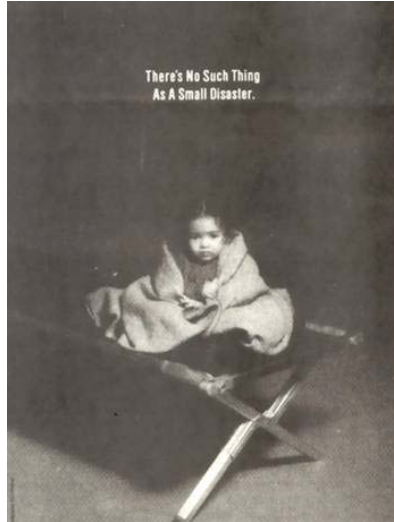


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A Review of Recent Literature

Women's Law Project

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The PVS Disaster:

**Poverty, Violence and Substance Abuse in the
Lives of Women and Children**

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Preface

Some cataclysmic disasters, like a bomb or an airline crash unfold within the space of minutes while others, like floods and hurricanes take days or weeks to roll out the toll of human suffering. As human beings, we become riveted on these rapid disasters and the threat they pose to our individual and national survival and well-being. We respond rapidly, generously, and whole-heartedly to the rescuing of those still living, the recovery of the deceased, and the grieving of those who mourn.

But as human beings, we have a relatively short attention span, we adjust rapidly to changing circumstances, and we tend to only focus on sources of immediate, clear, and present danger. As a result we have been largely ignoring a slowly progressive disaster, a disaster so far-reaching in its impact, so insidiously progressive in its devastation over decades, that it foils the capacity to understand it, much less respond to it. This disaster moves like a slow lava flow, destroying individuals, families, neighborhoods, and whole cities in its wake.

Substance abuse, Homelessness, Prostitution, HIV, Violence, Poor parenting, Poverty: the seven plagues of urban modern life - seven plagues of modern urban life that appear to have no common denominator other than the "weak" character of the men and women involved. However, in the last two decades, a new way of viewing human psychological and social dysfunction has begun to emerge. What all of these vicious, and seemingly unresponsive social problems share in common is a repetitive exposure to individual, family, community and systemic violence. Poverty, Violence, Substance Abuse – *The PVS Disaster* – is what this report is about.

As we will see, this is particularly true for the connection between women, children, and exposure to violence, poverty, and substance abuse. There is no adequate way to address the problem of substance abuse in the female population without understanding and addressing the complex consequences of exposure to trauma. Since the focus of the present project is on women, we have focused on the research literature particularly relevant to girls and women at the interface between substance abuse, mental disorder, medical disorders, and social dysfunction.

In this review of the existing recent literature, mostly from the 1990's to the present and largely from the U.S., we will start with many different ends of the tangled web of social dilemmas presently challenging all of our institutions and discover that regardless of the entry point we repeatedly end up back at the

beginning – violence, abuse, and neglect of basic human needs, usually beginning in childhood. In the end we will have broadly outlined the magnitude of the disaster that confronts our regional and national will. As a people we must decide: Will we continue down the road of blaming the victims for a disaster of a magnitude much larger than any individual's capacity to recover from it? Or will we exert our combined efforts - as we do in any widespread disaster – to prevent unnecessary damage, to help the injured to recover and the grieving to mourn?

I. Introduction: Substance Abuse and Violence in America

Substance Abuse and Stress

Since September 11, twenty-three states, five cities, and Washington, D.C. have detected an increased demand for alcohol and drug treatment according to a survey conducted by the National Center on Addiction and Substance Abuse at Columbia University. This is an increase since late November/early December when the survey found that 13 states, three cities, and Washington, D.C. had already seen an increased demand for such treatment. The increased demand for treatment is clustered largely on the East Coast [1].

But the September 11th disaster only exacerbates an already existing vast social problem. In 1999, 105 million Americans age 12 or older reported current use of alcohol, about 45 million of this group engaged in binge drinking, and 12.5 million were heavy drinkers [2]. According to the National Institute on Alcohol Abuse and Addiction, approximately 14 million Americans – about 7% of the adult population – meet the diagnostic criteria for alcohol abuse and/or alcoholism. About 40% of Americans report having a direct family experience with alcohol abuse or alcoholism [3]. In 1999 the Substance Abuse and Mental Health Services Administration conducted the 1999 National Household Survey on Drug Abuse (NHSDA), the primary source of statistical information on the use of illegal drugs by the United States population, conducted since 1971. Nearly 70,000 Americans were sampled. According to the survey, an estimated 14.8 million Americans were current users of illicit drugs in 1999 and an estimated 3.6 million were dependent on illicit drugs [2].

According to a recent report from the National Institute on Drug Abuse, individuals exposed to stress are more likely to abuse alcohol and other drugs and to undergo relapse. This is supported by research with animals showing that stress increases the tendency of animals to self-administer drugs that are defined as illicit substances for humans. Research has shown that there is an overlap between the neurocircuitry that responds to drugs and those that respond to stress and that it is these same neurocircuits that are involved in the development of post-traumatic stress disorder and related syndromes [4]. As this report emphasizes:

“Stressful events may influence profoundly the use of alcohol or other drugs. Stress is a major contributor to the initiation and continuation of addiction to alcohol or other drugs, as well as to relapse or a return to drug use after

periods of abstinence. ... Children exposed to severe stress may be more vulnerable to drug use. A number of clinical and epidemiological studies show a strong association between psychosocial stressors early in life and an increased risk for depression, anxiety, impulsive behavior, and substance abuse in adulthood.... An emerging body of research has documented a very strong association between PTSD and substance abuse. In most cases, substance use begins after the exposure to trauma and the development of PTSD, thus making PTSD a risk factor for drug abuse.... Of individuals with substance use disorders, 30-60% meet the criteria of comorbid PTSD.... Children who witness or are exposed to a traumatic event and are clinically diagnosed with PTSD have a greater likelihood for developing later drug and/or alcohol use disorder [5].

There is an increasing body of knowledge establishing a link between stress and addiction. Addicts may be more sensitive than non-addicts to stress and this hypersensitivity may exist before drug users start taking drugs, may contribute to their initial drug use, or could result from the impact of chronic drug abuse on the brain. Studies have demonstrated that the nervous system of an addict is hypersensitive to chemically induced stress and therefore, an addict may use drugs like heroin, morphine and cocaine to alleviate the noxious aspects of the stress experience. But the constant switching on and off of the stress systems of the body when withdrawal begins heightens whatever hypersensitivity the person already may have had before the person starting taking drugs [6].

The connections between violence, substance abuse, and stress are particularly important for child well-being. In Philadelphia, a recent study showed that of a sample of inner city children, 75% had heard gunshots, 60% had seen drug deals, 18% had seen a dead body outside, and 10% had seen a shooting or stabbing in the home. [7]. In 1997, 22,688 children were reported abused or neglected in Pennsylvania [8]. In 1998, 108,494 children were arrested in Pennsylvania. Exposure to violence in all its forms has been strongly associated with an awesome array of psychological, medical, social, and school problems that children endure. Exposure to violence in adolescence is as potentially damaging as violent victimization in childhood. As a longitudinal study has shown,

Violent victimization during adolescence appears to be a risk factor for . . . and a cause of – most of the adult problem outcomes measured: violent crime victimization, domestic violence perpetration and victimization, violent and property crime perpetration, and problem drug use [9].

Women are exposed to high levels of violent attack in childhood and as adults: 52% of women have been physically assaulted. 18% have been raped, 8% have been stalked, 22% have been battered by an intimate partner [10]. In

Philadelphia in the year 2000, there were 1,021 rapes, and according to the Philadelphia District Attorney's office, at least 45,000 women are battered in the city every year. Twenty percent of the emergency room visits by women in the city are the result of domestic violence, and 75% of these women will have additional injuries requiring treatment within the year [11, 12] .

Poverty, homelessness, substance abuse, child abuse, and previous trauma all substantially increase the risk for exposure to violence. All result in an enormous loss of financial and social capital. In the subsequent pages we are going to look at these subjects from a variety of different angles. We are going to begin at the beginning – with the exposure of American children to violence and the multiple effects of this exposure. Then we will look at the exposure to violence, the occurrence of PTSD and other forms of mental illness that American women experience. We will then make numerous connections between substance abuse and exposure to violence and its effects. Then we will look at the health consequences of the combined exposure to violence and substance abuse. It is via the parenting relationship that these consequences are conveyed intergenerationally, and it is poverty that exacerbates the impact of all of these factors and we will summarize the impact of substance abuse, violence and poverty on pregnant and parenting women, children and the homeless, and look at the connections with prostitution. We will review the economic consequences of violence and substance abuse and review some aspects of treatment and recovery.

This paper reflects only a partial review of the voluminous national literature pertaining to the effects of violence on individuals, families, social service systems, cities, and our entire society, and does not even draw on the growing body of international literature. In addition to the material presented in this review, the report that accompanies it provides specific information gleaned from local sources – clients and providers – about the impact of these interconnected and complex problems on the City of Philadelphia. Although it may on the surface appear to be a daunting and even overwhelming task to address the complexity of these problems, there is reason to hope. An important conclusion that can be drawn from our growing understanding of the toll violence takes is that most of our social problems - the plagues that besiege us – are preventable. Just as it is largely human action – or inaction – that lies at the heart of our current dilemmas, so too does the remedy for these problems revolve around human action. To act effectively, however, we must evolve a different approach. The interconnected nature of our social problems urges us to undertake a more systematic, creative and holistic approach to solving these problems.

II. Exposure of American Children to Violence in America

In 2000, there were 70.4 million children under age 18 in the United States, comprising 26% of the population. These children represented a diverse population: 64% were white, non-Hispanic, 15% were black, non-Hispanic, 9% were Hispanic, 4% Asian/Pacific Islander, and 1% American Indian/Alaska Native. Twenty-six percent of these children lived in single parent families, only 4% with single parent fathers. At least 16% of these children live in poverty. For 79% of these children at least one parent is working full-time, including 31% of the children living below the poverty line who have at least one parent employed full-time [13].

In this section we will look at the exposure to violence that American children sustain because it is not until we put all the numbers together that we are able to grasp the enormity of the problem that confronts our society today. Violence has a profound impact on a child's cognitive, emotional, social and moral development. As researcher, Martin Teicher has said in a recent article in *Scientific American*, "because childhood abuse occurs during the critical formative time when the brain is being physically sculpted by experience, the impact of severe stress can leave an indelible imprint on its structure and function. Such abuse, it seems, induces a cascade of molecular and neurobiological effects that irreversibly alter neural development"[14]. These alterations in neural development appear to have a widespread impact on every level of a child's cerebral organization and therefore on cognitive, emotional, and social function. It is not a useful construct to think about these changes as "brain damage" but rather that the brain, based on our evolutionary heritage, adapts well to the adversity of a hostile childhood environment [15]. One of the unfortunate consequences of this adaptation is that once our brains are suited to an adverse and dangerous environment it is very difficult for us to feel comfortable in any other environment – even a far safer one. The use of behaviors or external substances like drugs and alcohol to feel better and to manage distressing emotional and physical states, frequently begins in childhood or adolescence and originally is an adaptive coping skill to manage this distress but rapidly deteriorates into the spiral we know as addiction. Alcohol is a serious problem for U.S. children: 14% of 8th-graders, 26% of 10th graders, and 30% of 12th graders report rates of heavy drinking. Likewise, 12% of 8th graders, 23% of 10th graders, and 25% of 12th graders report illicit drug use [13].

Normative Violence: Corporal Punishment

What is the actual experience of violence in the lives of children? We start this look with the normative experience of violence in most people's lives. One group of researchers define violence as "*an act carried out with the intention, or perceived intention, of causing physical pain or injury to another person*" p.7 [16]. The use of violence, in the form of corporal punishment, is a routine experience for most American children. In the U. S. a quarter of infants one - six months of age are hit and this rises to half of all infants by the age of six months to a year. Ninety percent of American toddlers are spanked, and at least half of American adolescents. It's worth remembering that many of the same acts used to discipline a child would be considered criminal if the acts occurred between two adults [16, 17].

The effects of corporal punishment are far-reaching. "Strict" discipline seems to affect intelligence measures. Using IQ at age 3 years as the outcome measure, girls were found to be vulnerable to persistent harsh discipline and lack of maternal warmth. When mothers used harsh discipline and were emotionally cold toward their daughters, the IQ scores for the girls were 12 points lower than the IQ scores of girls who received low punishment and high warmth [18]. Children who received corporal punishment in adolescence have an increased risk later in life of depressive symptoms, suicidal thoughts, alcohol abuse, physical abuse of children, and wife beating [17]. In a large community study of depression, women with major depression were more likely to have experienced more frequent corporal punishment, poor relationships with their mothers, and unhappy childhoods [19]. In a study of batterers, the results indicated that batterers were more likely than comparison subjects to have been abused as children, to have witnessed their father beating their mother, and to have been disciplined as children with corporal punishment [20].

To look at the long-term impact of corporal punishment, one group of researchers did an eighteen-year longitudinal study of the effects of physical punishment. The study drew three major conclusions: (1) Those exposed to harsh or abusive treatment during childhood are an at-risk population for juvenile offending, substance abuse, and mental health problems; (2) Much of this elevated risk arises from the social context within which harsh or abusive treatment occurs; (3) Nonetheless, exposure to abuse appears to increase risks of involvement in violent behavior and alcohol abuse [21].

In an extensive body of work, Straus has reviewed the connection between corporal punishment, violence and crime in the United States. Studies have shown a connection between corporal punishment and increased

aggression and violence in children. Children whose parents hit them are twice as likely to attack a brother or sister. Adults who were hit as adolescents are more likely to hit their spouses. Teenagers who were hit by their parents are more likely to steal and physically assault someone. The more corporal punishment parents use, the greater the chances of delinquent behavior among their children. States where teachers are allowed to hit children have a higher rate of student violence. Corporal punishment and physical abuse overlap: the more a parent was hit as an adolescent, the greater the chance that the parent will physically abuse his or her own child [16].

Physical aggression and verbal aggression against children often go together. Parents who yell are commonly the ones most likely to hit frequently, and vice versa. In addition, both physical and verbal violence are learned behaviors, transmitted transgenerationally. Respondents who were spanked (yelled at) frequently as children are more prone to frequently spank (yell at) their own children [22]. What has become increasingly clear is that physical punishment is not necessary, either at home or at school and that other methods of containment are effective [16, 23, 24]. Instead, there are many indicators that the use of such coercive means of discipline as physical punishment teaches a child that coercion is a preferred way of dealing with social conflict, a situation that is a fundamental part of antisocial behavior patterns [25, 26].

Children Witnessing Violence

Children in America today witness violence in the media, in school, on the streets, and in their homes. According to a child victimization survey in 1997, almost 9 million adolescents have witnessed serious violence, excluding media presentations of violence. This category measured lifetime experience of seeing someone shot with a gun, knifed, sexually assaulted, mugged, robbed, or threatened with a weapon. In the study sample, 43% of the boys and 35% of the girls had witnessed some form of violence firsthand, excluding 30% of adolescents who had directly observed someone being beaten up and badly hurt – an experience so common that had these figures been included, the prevalence of witnessing violence would have arisen to 72% for the entire sample. Among witnesses to violence, 15% developed PTSD compared to 3.3% of surveyed youths who had not witnessed violence [27].

Children living in impoverished, crime-ridden neighborhoods are particularly susceptible to exposure to violence. To get some idea of the amount of trauma exposure for children in an urban, inner city project, one group of researchers studied 146 children. Forty-two percent had seen someone shot and 37% had seen someone stabbed; 21% lived with someone who had been shot and 16% lived with someone who had been stabbed. Of these children 47% of the girls and 55% of the boys had witnessed violence [28].

Another study looked at 342 high school students from inner city Baltimore schools who were referred for mental health care. The study examined demographic variables as well as risk factors that included parental substance use and total life stress. Over 90% of the sample knew at least 1 victim of a violent act, 77% reported witnessing a violent act, and 47% reported past victimization by violence. Life stress was the most consistent predictor of violence exposure for this sample [29]. In a study designed to look specifically at PTSD in trauma-exposed urban teenage girls, 90 girls aged 12 to 21 who came to a primary care clinic were evaluated. Ninety-two percent of the girls endorsed at least one trauma. Witnessing community violence (85.6%) and hearing about a homicide (67.8%) were the most common traumatic events endorsed. Twelve (14.4%) and 10 (11.6%) traumatized girls met DSM-IV symptom criteria for full and partial PTSD, respectively. Compared with traumatized girls without PTSD, girls with PTSD were significantly more depressed, used more cigarettes and marijuana, and were more likely to have failed a school grade, been suspended from school, or been arrested. [30].

Another longitudinal study looked at the impact of exposure to violence of inner city, seven-year-old Philadelphia children. The researchers found that the children they studied were frequently exposed to violence. Of the study sample, 75% had heard gunshots, 60% had seen drug deals, 18% had seen a dead body outside, and 10% had seen a shooting or stabbing in the home. Many of the children were depressed and anxious. Sixty-one percent of them worried sometimes or a lot of the times that they might get killed or die and 19% sometimes wished they were dead. The higher the exposure to violence, the more anxious and depressed were the children, and the poorer their self-esteem. Levels of anxiety and depression were associated with lower grade point average in school and more days of school absence. Interestingly, the caregivers' reports of the children's anxiety were not consistent with what the children themselves reported. The caregivers tending to minimize the extent of the children's anxiety [7].

Another group of investigators wanted to determine the prevalence of exposure to violence in preadolescent children in communities that vary by family income and to determine patterns of physical symptoms and communication after exposure to a traumatic event. They looked at 228 sixth-grade students from a suburban middle school (school A) and 209 sixth-grade students from an urban middle school (school B) in the Philadelphia metropolitan area and surveyed the children using a group-administered anonymous questionnaire. Two hundred two students (89%) from school A and 200 students (96%) from school B reported knowing someone who had been robbed, beaten, stabbed, shot, or murdered. One hundred twenty-nine students from school A (57%) and 183 students from school B (88%), witnessed a robbing, beating, stabbing, shooting, or murder. Ninety-one students from school A (40%) and 141 students

from school B (67%) had been personally robbed, beaten up, stabbed, shot, or caught in gun cross fire. One hundred thirty-four students from school A (59%) and 152 students from school B (73%) reported hearing gunfire in their neighborhood. One hundred eighty-eight students from school A (82%) and 202 students from school B (97%) had at least one positive response in all three categories: knowing a victim, witnessing an event, and being a victim of violence. The proportion of positive responses from school B – the urban school - was significantly greater than the proportion from school A – the suburban school - for all of these results. Many students reported symptoms associated with somatization syndromes, depression, and post-traumatic stress disorder; the school B group had significantly more symptoms than the school A group. Both student groups had discussed episodes of witnessing an event or victimization with others, mostly family members and friends, and expressed feelings of fear, anger, sadness, and frustration about these episodes. A very low percentage of the students (from 1% to 8% in the different analyses) consulted a medical or mental health professional. The data supported a substantial prevalence or exposure to violence for suburban and, even more dramatically, for urban middle school-aged children. The higher-prevalence group reported a higher incidence of symptoms sometimes seen after traumatic stress. Many students in both groups expressed multiple feelings about their exposure to violence, and most talked to someone about their exposure; but only rarely was this person a health professional [31].

It is not known exactly how many children witness domestic violence but given the rate of spousal abuse, the number is significant. It has been estimated that at least 3.3 million children between the ages of 3 and 17 years witness parental abuse annually [32]. Multidisciplinary findings reveal that the effects of witnessing violence, without being abused oneself, are serious, varied, and generally framed in emotional and behavioral manifestations [33]. One large study looked at the prevalence of children's exposure to substantiated cases of adult female assaults in five U.S. cities. Results indicated that children were disproportionately present in households with domestic violence and that young children, 0-5 years of age, were disproportionately represented among these children. Moreover, these children were exposed to excessive levels of additional developmental risk factors and they were involved in the incidents to varying degrees [34].

Many studies have demonstrated that the effects on children of witnessing domestic violence is extremely detrimental, predisposing male children in particular to the subsequent use of violence [35-39] Exposure to conflict and violence plays a major role in how children learn to relate to others, how they develop their self-concept and self-control, and how they interact with dating and marital partners in the future. In a group of 285 inner-city children in Grades 4-6, violent victimization was associated with negative social outcomes through

the mediation of emotion dysregulation. These children do not learn how to manage their emotions appropriately and this leaves them vulnerable to many other social and academic adjustment difficulties. Children who witness violence tend to be more aggressive than children who do not witness violence, apparently because they have learned that violence is appropriate social behavior. These results demonstrate that violence exposure is linked to multiple levels of behavioral and social maladjustment and suggest that there are distinct patterns of risk associated with different forms of exposure [40].

Children who witness domestic violence learn destructive patterns of conflict resolution [41]. In one study of boys and girls, youth with high levels of community violence exposure reported more fears, anxiety, internalizing behavior, and negative life experiences than those with low exposure. When the researchers looked at the children's psychophysiological measures by having the adolescents watch a montage of media violence and then measuring their physical status, youth exposed to high levels of community violence had lower baseline heart rates than those with low exposure. Presumably, they had grown "used to" the violence and no longer had the normal physical responses associated with stress. Community violence exposure predicted both post-traumatic stress and separation anxiety symptoms – both increasing the likelihood of substance abuse [42]. In general, childhood exposure to domestic violence can be associated with increased display of aggressive behavior, increased emotional problems such as depression and/or anxiety, lower levels of social competence, and poorer academic functioning [43].

One researcher wanted to find out how exposure to violence impacts on children's IQ's. After controlling for confounders like the child's gender, caregiver's IQ, home environment, socioeconomic status, and prenatal exposure to substance abuse, violence exposure was found to be related to the first-grade child's IQ and reading ability. Trauma-related distress accounted for additional variance in reading ability. A child experiencing both violence exposure and trauma-related distress at or above the 90th percentile would be expected to have a 7.5-point decrement in IQ and a 9.8-point decrement in reading achievement [43].

Another group of researchers wanted to see whether young children of substance-abusing mothers witnessed more violence than children of non-substance abusing mothers. The results were interesting, albeit appalling. The children of substance-abusing mothers did *not* witness more violence than children of non-substance abusing mothers, but among this population of 6-year-old inner city children, 43% had seen someone beaten up, 13% had seen someone threatened with knife, 7% had seen someone stabbed or shot. The children who had witnessed violence had significantly more aggressive, anxious/depressed, withdrawn, attention and social problems. More than half of the 6-year old inner city children in this study had witnessed some form of

violence, regardless of whether their mothers were or were not drug addicts [44].

One of the results of living in a community where there is a high level of violence is that many of the adults who are killed are also parents. Children who lose parents often suffer long-term difficulties as a result. In one study investigators compared a group of parentally bereaved children with a disaster comparison group and a non-traumatized control group and measured emotional adjustment. The parentally bereaved children reported significantly more PTSD symptoms than the disaster and non-traumatized control groups. Among the bereaved children, girls, younger children, and children living with a surviving parent who scored high on a measure of post-traumatic stress reported more symptoms [45]

Violent juveniles tend to have co-occurring problems such as victimization, substance abuse, and school failure and can be described as multiple-problem youth. Overall, children exposed to multiple forms of family violence reported twice the rate of youth violence as those from nonviolent families. Adolescents who were not themselves victimized but who had grown up in families in which partner violence occurred were 21% more likely to report violent delinquency than those not so exposed [46]. A consistent finding in many areas of research is the continuity from childhood aggression to juvenile violence and on to adult violence. An early age of onset of violence predicts a large number of violent offenses. Risk factors for juvenile violence can be categorized as individual, family, peers, and social. Individual risk factors include high impulsiveness and low intelligence, possibly linked to the executive functions of the brain. Family risk factors include poor supervision, harsh discipline, child physical abuse, having a violent parent, large family size, poverty, a broken family. Peer factors include having delinquent friends and belonging to a gang. Social risk factors include urban residence, and living in a high-crime neighborhood characterized by gangs, guns, and drugs in the United States [47].

Despite the high likelihood that youth will be exposed to violence, our institutions are not universally responsive to the enormity of this problem. In one study designed to assess emergency department clinicians' attitudes and behaviors regarding identification, assessment, and intervention for youth at risk for violence in the emergency department, only 15% of the emergency room staff correctly recognized the lack of existing protocols for addressing youth violence. Clinicians reported being most active in identification of at-risk youth (93% asking context of injury and 82% determining relationships of victim and perpetrator), with pediatricians being more active than general emergency room clinicians (87% vs. 68%). Clinicians less often reported performing assessments or referrals of at-risk youth. Nurses and physicians were no different in their reported identification, assessment, or referral behaviors. Barriers identified

include concern over upsetting family members, lack of time or skills, and concern for personal safety [48].

Child Physical Abuse

In many families, physical abuse is disguised as discipline, carrying on an intergenerational pattern of using violence in an attempt to manage children. Physical abuse has been defined as a physical injury upon a child inflicted by a caregiver by other than accidental means [49]. Parents sometimes lose control and what was meant as a slap turns into a punch, a kick, a serious injury, and sometimes, even death. There is often a fine line between physical punishment and physical abuse [50].

The United States' government-sponsored Third National Incidence Study of Child Abuse has presented alarming data. The number of abused and neglected children in the U. S. grew from 1.4 million in 1986 to over 2.8 million in 1993. During that same period, the number of seriously injured children *quadrupled* and these increases cannot be attributed to increased sensitivity on the part of reporters. Of the children who met the strictest criteria, the Harm Standard, child protective services only investigated 28% of the reports – a significant decrease from the 44% investigated in 1986 when the Second National Incidence Study of Child Abuse was performed [26]. The number of sexually abused children rose by 83% in that period. A 1995 Gallup Poll of parents estimated that as many as 49 children per 1,000 in the population suffered physical abuse and 19 per 1,000 suffered sexual abuse [51]. Of children entering battered women's shelters with their mothers, 40-70% are themselves abused[52].

In a research study on the prevalence and consequences of child victimization, published in 1997, it was reported that approximately 3.9 million adolescents have been victims of a serious physical assault, defined as behavior that includes being attacked or threatened with a weapon, badly hurt from a beating, or attacked without a weapon but with the intent to kill or seriously injure. The rate of physical assault for young males was 21.3% and for females, 13.4%. Among those who had been physically assaulted, 23.4% developed PTSD and 14.8% still suffered from it, while 10.8% of non-victims of physical assault developed and 4.5% still had – PTSD [27].

In a national sample of over 4000 adult women that looked at severe cases of physical abuse, approximately 2.6% reported having experienced serious assaults in childhood with fathers and stepfathers identified as having been the most frequent offenders. In this study, the investigators did not place physical abuse in the context of physical discipline, but rather as an incident considered to be physical assault involving either the use of a weapon or the

conviction on the part of the victim that her assailant's intent was to kill or seriously injure her. Therefore, women who interpreted a childhood assault as discipline that got out of hand, or who believed that belts, cords, or whips are not weapons, would have denied a history of serious assault. Almost half of the respondents reported that they believed the perpetrator to have been under the influence of intoxicants during the assault. Close to half of the victims reported that the index assault was one in a series by the same assailant. Most victims received physical injuries and 88% reported fearing that they would die as a result of the assault. Only 26% of these cases were reported to authorities. Those identifying themselves as victims were significantly more likely than non-victims to have used prescription medications in a non-prescribed manner, to have smoked marijuana, to have used hard drugs, to be current users of marijuana and cocaine. Victims began drinking alcohol almost three years before non-victims and had more days during the previous year in which they were intoxicated, more likely to have driven while intoxicated, more likely to have had an alcohol-related accident both at home and while driving. Compared to non-victims, victims were more likely to have had other problems as a result of substance abuse: legal problems, work problems, problems with family and friends. A higher proportion of victims than non-victims had received inpatient or outpatient treatment for substance abuse [53]. Other studies have reported that approximately 11% of adults have been physically abused as children [54].

As controversial as may be the continued use of corporal punishment, there is no doubt that physical abuse is destructive. A growing body of evidence has clearly demonstrated the connection between physical abuse and many other problems including: increased likelihood of the use of alcohol, marijuana, and almost all other drugs for both males and females [55]; more lifetime and current episodes of depression, post-traumatic stress, and substance abuse [53]; a significant impact on the likelihood of arrest for delinquency, adult criminality, and violence [56]; increased rates of psychopathology, sexual difficulties, decreased self-esteem, and interpersonal problems [57]; increased risk for promiscuity, prostitution, and teenage pregnancy [58]; increased risk for later aggressive behavior as well as the development of deviant patterns of processing social information which may mediate the development of aggressive behavior [59, 60].

In a study of physically abused adolescents, physical abuse added significantly to other risk factors in accounting for lifetime diagnoses of major depression, dysthymia, conduct disorder, drug abuse, and cigarette smoking. Physical abuse also contributed significantly to prediction of current adolescent unipolar depressive disorders, disruptive disorders, and cigarette smoking [61].

Child Sexual Abuse

Surveys of child sexual abuse in large non-clinical populations of adults have been conducted in at least 19 countries in addition to the United States and Canada, including 10 national probability samples. Comparisons between the countries are difficult because of methodological and definitional differences. However, all studies have found rates roughly in line with comparable North American research, ranging from 7% to 36% for women and 3% to 29% for men. Most studies found females to be abused at one and a half to three times more frequently than males [62]. Considerable evidence exists to show that at least 20 percent of American women and 5 percent to 10 percent of American men experienced some form of sexual abuse as children with the peak age of vulnerability between age 7 and age 13. Most sexual abuse is committed by men (90%) and by persons known to the child (70% to 90%), with family members constituting one-third to one-half of the perpetrators against girls and 10% to 20% of the perpetrators against boys. Around 20% to 25% of child sexual abuse cases involve penetration or oral-genital contact [63].

More than six out of ten of all rape cases occur before victims reach age 18; 29% of all forcible rape occur before the age of eleven [64]. A 1995 Gallup Poll of parents estimated that as many as 19 per 1,000 children suffer sexual abuse. Researchers asked a national survey of parents how many of their children had been sexually abused and their replies resulted in an estimate of 1.9% in the last year and 5.7% ever, with an equal number of sexually abused boys and girls [51]. Sixty-seven percent of all victims of sexual assault reported to law enforcement agencies were juveniles (under the age of 18); 34% of all victims were under age 12 [65]. According to 1998 Federal statistics, nearly 12% of the child abuse victims were sexually abused which amounts to over 10,000 children in a year [66].

Of adolescents ages 12-17 in the United States, an estimated 8% have been victims of serious sexual assault. Extrapolating the findings of this study to the national adolescent population as a whole suggests that of the 22.3 million adolescents ages 12–17 in the United States today approximately 1.8 million have been victims of a serious sexual assault. As anticipated, more female than male adolescents had been sexually assaulted (13% of females in contrast to 3.4% of males). Of the females, 3.3% experienced unwanted penile penetration in contrast to 0.5% of the males. Similarly, 2.7% of the female adolescents but only 0.6% of the males experienced penetration with fingers or objects [27]. In another survey of high school adolescents 12% of girls were sexually abused, while 5% of boys were sexually abused [67]. In the United States, more than six out of ten of all rape cases (61%) occur before victims reach age 18; 29% of all forcible rapes occur before the age of eleven[68].

Children who are sexually assaulted demonstrate a number of adjustment problems [69]. Sexually abused children are more likely to develop PTSD. In one study of non-clinically referred, sexually abused children, aged 6 to 16 years, during the 30- to 60-day period after disclosure, children were at high risk for PTSD and symptoms of post-traumatic stress, anxiety, and depression in the immediate period after disclosure and termination of abuse [70].

In study after study the post-traumatic stress level of children who have been sexually abused is associated with an impaired level of child mental health functioning [71]. Sexually abused children are more likely to have sexual behavior problems that pose problems for them at home and at school and that may lead to perpetrator behavior directed at other children [72]. Children who have been both physically/sexually abused appear to be at highest risk of psychiatric disturbance including post-traumatic stress disorder, major depression, dysthymia, suicidality, self-mutilation, somatic complaints, poor self-esteem, anxiety disorders, sleep disturbances, substance abuse disorders, learning disabilities, conduct disorders, delinquency, aggression, increased health risk behaviors, and inappropriate sexual behavior [73, 74] .

As traumatized children make the transition into adolescents, adjustment problems continue. In a study of a community sample of 1,490 adolescents, aged 12 to 19 were analyzed to investigate the relationship between a history of sexual abuse and adolescent functioning. Emotional problems, behavioral problems, suicidal thoughts and behavior of boys and girls with a history of sexual abuse were compared to those in a matched control group of boys and girls without such a history. Both sexually abused girls and boys reported significantly more emotional problems, behavioral problems, suicidal thoughts and attempts, than their non-abused counterparts. The results also indicated that the experience of sexual abuse carried far more consequences for boys than for girls regarding the use of alcohol, aggressive/criminal behavior, use of drugs, and the amount of truancy, as well as regarding suicidal thoughts and behavior. Whereas 2.6% of the non-abused boys reported a former suicide attempt, this percentage was 13 times higher for the sexually abused boys [75]. In another study of adolescents in residential treatment, sexually abused children had statistically and clinically higher evaluations on several MMPI-A scales compared to their non-abused counterparts [76].

One of the many horrors that result from sexual assault is the tendency of victims to be revictimized. Child sexual abuse survivors appear to be particularly vulnerable to revictimization experiences. Victimization before the age of 14 years almost doubles the risk of later adolescent victimization. In a recent study, sexual victimization among university women was highest for those who had been first assaulted in early adolescence. Adolescent victims of rape or attempted rape, in particular, were 4.4 times more likely to be as seriously assaulted during their 1st year of college [77]. Offering explanations for this

phenomenon among adolescents, one group of investigators propose that revictimization appears to arise because the childhood and family factors that are associated with childhood sexual abuse are also associated with increased sexual risks during adolescence; and because exposure to childhood sexual abuse may encourage early onset sexual activity which places those exposed at greater sexual risk over the period of adolescence [78].

Survivors of child sexual abuse are more likely to report unwanted sexual intercourse by acquaintances due to force and are more likely to report unwanted intercourse with both acquaintances and strangers due to the misuse of the perpetrator's authority. They are also more likely to experience unwanted fondling and oral-genital contact with acquaintances in the context of misuse of authority by the perpetrator and use of alcohol or drugs by the victim [79, 80]. Two hundred and twenty one women with histories of child sexual abuse participated in a study designed to test a model for predicting adult/adolescent sexual revictimization and post-assault functioning. Repeated victimization was associated with having experienced child sexual abuse involving physical contact, including intercourse and/or penetration. Women with repeated victimization engaged in more self-blame, reported higher levels of post-traumatic symptoms, and reported more high-risk sexual behavior [81].

There are some hopeful signs that programs can be developed to stop or at least reduce the revictimization cycle. One investigation tested a program to reduce women's risk for sexual revictimization. Participants were 66 women with histories of sexual victimization as adolescents or adults who were randomly assigned to a preventive intervention group or a no-treatment control group. They completed initial measures assessing history of sexual assault, self-efficacy, and psychological functioning, returning approximately 2 months later for follow-up assessment using the same measures. Results suggest that the prevention program may be effective in reducing the incidence of sexual assault revictimization in this population. In addition, participants in the intervention group displayed significant improvement in psychological adjustment and self-reported self-efficacy [82].

Child sexual abuse (CSA) has been found to be comorbid accompany many later psychiatric and physical problems. A number of studies have found correlations between borderline personality disorders, other personality disorders and CSA [83-88]; panic disorder and CSA [89, 90]; suicide attempts [91]; eating disorders [92, 93]; depression and generalized anxiety [94, 95]; chemical dependency [95-98]; irritable bowel syndrome [99]; chronic pelvic pain [100, 101]; increased risk for lifetime diagnoses of major depression, panic disorder, phobia, somatization disorder, chronic pain and drug abuse [102-108].

In a review of studies on the long-term consequences of sexual abuse after 1987, researchers found that sexually abused subjects report higher levels

of general psychological distress and higher rates of both major psychological disorders and personality disorders than non-abused subjects. In addition, child sexual abuse survivors report higher rates of substance abuse, binge eating, somatization, and suicidal behaviors than non-abused subjects. Adult survivors of child sexual abuse report poorer social and interpersonal relationship functioning, greater sexual dissatisfaction, dysfunction and maladjustment including high-risk sexual behavior, and a greater tendency toward revictimization through adult sexual assault and physical partner violence [109].

A recent paper discussed the results of a third wave of a longitudinal study of the consequences of child sexual abuse. Child sexual abuse victims reported a lifetime history of more exposure to various traumas and higher levels of mental health symptoms. Exposure to traumas in both childhood and adulthood other than the child sexual abuse mediated the relationship between child sexual abuse and psychological distress in adulthood. The authors conclude that child sexual abuse may be an important risk marker for exposure to an array of other traumatic stressors and for increased negative mental health effects from those stressors [110].

Crime Victimization

Children are also classified as crime victims. According to the Federal Bureau of Investigation, a violent crime is committed every 18 seconds [111]. Five out of six people will be victims of violent crimes at least once in their lifetimes [64]. Vulnerability to violent crime victimization varies across the age spectrum. The victimization rate increases through the teenage years, crests at around age 20. Persons age 12 to 24 comprised: 22% of the population but account for 35% of murder victims, and 49% of serious violent crime victims. Persons age 18 to 21 were the most likely to experience a serious violent crime and blacks in that age group were the most vulnerable. More than 52% of all rape/sexual assault victims were younger than 25. Children under the age of 18 accounted for 11% of all murder victims in the United States in 1994. Nearly half of the 2,660 child victims were between ages 15 and 17. About 1 in 5 child victims were killed by another child. Between 1976 and 1994 an estimated 37,000 children were murdered. Since the mid-1980's the increases in both the number and the rate of murder among persons age 15 to 17, and particularly among black youth in this age range, have outpaced changes in murder in all other age groups [112]. Teenagers and young adults were more likely to become victims of violent crime than older persons. In 1995, about a third of all victims of violent crime were ages 12 to 19. Almost half of all victims of violence were under age 25 [113].

In a study of over 1,000 African American inner city children, 75 percent of the participating boys and 10 percent of participating girls had witnessed the

shooting, stabbing, robbing, or killing of another person in their own lives [114]. A four-year study of Philadelphia neighborhoods completed in 1990 found that gun-related violence increased 179%. The same study reported that during the four years of the study 94% of men in the age group 20-29 had to go to an emergency room at least once with an injury, caused 41% of the time by violent encounters [115]. In fact, an American child dies of gunshot wounds every 1 1/2 hours, and every 2 days 30 children--the equivalent of a school classroom--lose their lives to guns [116].

Bullying

The aggressive behavior problems that children frequently demonstrate after maltreatment and exposure to violence often begin as easily recognized bullying behavior at school. In one study, participants were 169 maltreated and 98 non-maltreated boys and girls attending a summer day camp for inner-city children. Maltreated children were more likely than non-maltreated children to bully other children. Bullying was especially prevalent among abused children who experienced physical or sexual abuse. Maltreatment also placed children at risk for victimization by peers. Maltreated boys and girls appeared to be at similar risk for bullying and victimization. As expected, both bullies and victims evidenced problems with emotion regulation [117]. In a prospective investigation of the early family experiences of boys who later emerged as both aggressive and bullied (i.e., aggressive victims) during their middle childhood years, the early experiences of 16 aggressive victims were contrasted with those of 21 passive (non-aggressive) victims, 33 non-victimized aggressors, and 128 normative boys. Analyses indicated that the aggressive victim group had experienced more punitive, hostile, and abusive family treatment than the other groups. In contrast, the non-victimized aggressive group had a history of greater exposure to adult aggression and conflict, but not victimization by adults, than did the normative group, whereas the passive victim group did not differ from the normative group on any home environment variable [118].

Bullying behavior demonstrates consistency over time. In an 8-year longitudinal study, in Finland, 15% of boys and 7% of girls were bullied and 12% of girls and 13% of boys were victimized at age 16. Both bullying and victimization at age 16 were associated with a wide range of psychological problems at age 8 and 16, and with referral to child mental health services. Bullying at age 8 was associated with bullying at age 16, while victimization at age 8 was associated with victimization 8 years later [119]. Anxiety, depression and psychosomatic symptoms were most frequent among bully-victims and equally common among bullies and victims. Frequent excessive drinking and use of any other substance were most common among bullies and thereafter among bully-victims. Among girls, eating disorders were associated with involvement in bullying in any role, among boys with being bully-victims [120]. According to a

Norwegian study, drug addicts who attempt suicide are more likely to have been exposed to bullying behavior as well as other forms of violence during childhood [121].

According to a nationally representative sample of U.S. youth grades 6-10, 11% of the sample reported moderate bullying of others and 9% admitted to frequent bullying, while 30% of the children reported both bullying and being bullied. Being bullied and bullying others was associated with poorer psychosocial adjustment [122]. Of those characterized as bullies in grades 6-9, 60% had at least one criminal conviction by age 24 while 35-40% had at least three convictions [123, 124].

In another study, 196 young adolescents who reported that they bullied their peers were identified out of a sample of 1,758 students in Grades 5 through 8. The results indicated that bullies started dating earlier and engaged in more advanced dating than comparison adolescents. Bullies were highly relationship-oriented, yet their views of their friends and boyfriends or girlfriends were less positive and less equitable than the comparison adolescents. Finally, bullies were more likely to report physical and social aggression with their boyfriends or girlfriends [125].

Dating Violence

Dating violence is a serious problem among adolescents. According to Youth Risk Behavior Surveys performed in Massachusetts in 1997 and 1999, rates of physical and sexual violence from dating partners does not begin in adulthood but has its roots in adolescent experience. Approximately 1 in 5 female students reported being physically and/or sexually abused by a dating partner. Dating violence is associated with increased risk for substance abuse; unhealthy weight control behaviors, like using laxatives or vomiting; sexual risk behaviors like first intercourse before age fifteen; pregnancy; and suicidality [126].

Adolescents' responses to the Youth Dating Violence Survey were gathered by the Centers for Disease Control and Prevention. The children reported many different kinds of psychological, as well as physical, victimization experience within dating relationships: their partners did something to deliberately make them feel jealous, damaged their possessions, said things to hurt their feelings, insulted them in front of others, tried to control them, threatened them, blamed them for bad things the dating partners did, and brought up something from the past to hurt them. In terms of perpetrating psychological abuse in a dating relationship, over half of the adolescents reported that they hurt their dating partners' feelings, insulted them in front of others, did something just to make them jealous, tried to control them, and

damaged their possessions. Many of the adolescents had also been victims of physical violence in their dating relationships; they reported being scratched, slapped, slammed or held against a wall, kicked, bitten, forced to have sex, choked, and pushed, grabbed, or shoved, as well as having their arms twisted and fingers bent. Some perpetrated physical violence in dating situations, such as scratching their dating partners, hitting them with a fist or something hard, throwing something that hit their dating partners, kicking them, slapping them, physically twisting their arms, slamming or holding them against a wall, bending their fingers, biting them, choking them, and pushing, grabbing, or shoving them [127].

Investigators wanted to examine the relationship between child maltreatment, clinically relevant adjustment problems, and dating violence in a community sample of adolescents. They had adolescents from 10 high schools in Ontario complete questionnaires that assessed past maltreatment, current adjustment, and dating violence. One third of the 462 teenagers sampled reported levels of maltreatment above the cutoff score on the Childhood Trauma Questionnaire. Girls with a history of maltreatment had a higher risk of emotional distress compared with girls without such histories. They were also at greater risk of violent and nonviolent delinquency and carrying concealed weapons. Boys with histories of maltreatment were 2.5 to 3.5 times as likely to report clinical levels of depression, post-traumatic stress, and overt dissociation as were boys without a maltreatment history. They also had a significantly greater risk of using threatening behaviors or physical abuse against their dating partners [128].

Another study examined the association between having a history of dating violence and the sexual health of adolescent females. Over 500 black adolescent females completed a survey that assessed dating violence, defined as ever having a physically abusive boyfriend, and then were interviewed to assess sexual behaviors. Dating violence was reported by 18.4% of adolescents. Adolescents with a history of dating violence were, in the past 6 months, 2.8 times more likely to have a sexually transmitted disease, 2.8 times more likely to have non-monogamous male partners, and half as likely to use condoms consistently. Furthermore, adolescents with a history of dating violence were significantly more likely to fear the perceived consequences of negotiating condom use; fear talking with their partner about pregnancy prevention; have a higher perceived risk of acquiring a sexually transmitted disease; perceive less control over their sexuality; have peer norms non-supportive of using condoms; and have norms non-supportive of having a healthy relationship [129].

Boys are victimized by girls too. According to responses from 978 female college women, within a 5-yr. period, 29% admitted to involvement in physical aggression against their male partners. Younger women in their 20's were significantly more likely to aggress physically than women who were 30 year old, and above. Women stated that they expressed aggression toward their male

partners in part because they wished to engage their partner's attention, particularly emotionally. Additionally, assaultive women did not believe that their male victims would be seriously injured or would retaliate [130].

The purpose of another study was to evaluate whether perpetrators of dating violence could be differentiated from their nonviolent counterparts on measures of anger and cognitive distortion. Of the 95 male and 152 female undergraduates surveyed, 27% (24 males and 43 females) reported using some form of physical aggression against their current dating partner in the past year. On a self-report measure of anger (State-Trait Anger Expression Inventory), violent individuals reported higher levels of intense anger and lower levels of anger control compared to nonviolent participants. While there were no differences between violent and nonviolent participants' levels of anger as a trait, the results suggested that violent individuals have difficulty controlling angry feelings when they arise, which may increase the likelihood of externally directed forms of anger expression [131]. Everyone feels anger, but some people may feel anger more intensely and have more difficulty controlling anger than others.

To address dating violence a program called the "Safe Dates" program was created to focus on the primary and secondary prevention of adolescent dating violence. Fourteen schools were randomly allocated to treatment conditions. Eighty percent of the 1,886 eighth and ninth graders in a rural county completed baseline questionnaires, and 1700 (90%) completed follow-up questionnaires and then they were assigned to one of two groups – one for those who attended the "Safe Dates" program and another for those who did not. At follow-up, less psychological abuse, sexual violence, and violence perpetrated against the current dating partner were reported in school that had the "Safe Dates" program than in schools that did not. In a subsample of adolescents reporting no dating violence at baseline (a primary prevention subsample), there was less initiation of psychological abuse in "Safe Dates" schools than in control schools. In a subsample of adolescents reporting dating violence at baseline (a secondary prevention subsample), there was less psychological abuse and sexual violence perpetration reported at follow-up in "Safe Dates" schools than in control schools. Most program effects were explained by changes in dating violence norms, gender stereotyping, and awareness of services [132].

Lesbian and Gay Teens

There are no national statistics on the number of teenagers who identify themselves as gay, lesbian, transgendered, or bisexual. Some states and locales have performed surveys, however. In a Seattle survey of 9th –12th graders, 4.5% of the respondents described themselves as gay, lesbian and bisexual and another 4% were "not sure". In a similar Massachusetts survey, 2% of the

students described themselves as gay, lesbian or bisexual, and in Vermont, 5.3% of boys and 3.4% of girls in grades 9-12, reported having engaged in same-gender sexual activity. In a survey of college students, 48% of the self-identified gay and bisexual college students said that they became aware of their preferences in high school, while 26% found their true sexuality in college [133].

Results of a 1997 study of risk behaviors among Massachusetts' high school students showed that 36% of students who identify themselves as gay, lesbian, or bisexual, and have had any same-sex sexual partner, used alcohol or drugs prior to their last sexual intercourse [134]. In a study of adolescent same-sex relationships, investigators found that females with same-sex attractions were at higher risk for negative outcomes related to substance use and abuse [135]. They also found that sexual minority youths are more likely to be at risk for suicide thoughts and suicide attempts [136]. These adolescents were also more likely to experience extreme forms of violence than youths who report other-sex attraction, and are more likely to witness violence. Youths attracted to the same sex and to both sexes were more likely than youths attracted to the other sex to have been in a fight that resulted in the need for medical treatment. Those romantically attracted to both sexes were more likely to have been jumped and violently attacked. They were no more likely, however to perpetrate violence against others [137].

The authors of one study conducted a community school-based health survey in two high schools both located in an upper middle class school district. Significantly increased health risks for self-identified gay, lesbian or bisexual youth were found in mental health, sexual risk-taking, and general health risks compared with self-identified heterosexuals, but not in health domains associated with substance abuse, homelessness, or truancy [138].

In an analysis of the Minnesota Adolescent Health Survey, behaviors, risk factors and pregnancy histories were compared among adolescents who identified themselves as lesbian or bisexual, as unsure of their sexual orientation and as heterosexual. Overall, bisexual or lesbian respondents were about as likely as heterosexual women ever to have had intercourse (33% and 29%, respectively), but they had a significantly higher prevalence of pregnancy (12%) and physical or sexual abuse (19-22%) than heterosexual or unsure adolescents. Among sexually experienced respondents, bisexual or lesbian and heterosexual women reported greater use of ineffective contraceptives (12-15% of those who used a method) than unsure adolescents (9%); bisexual or lesbian respondents were the most likely to have frequent intercourse (22%, compared with 15-17% of the other groups). In the sample overall, among those who were sexually experienced and among those who had ever been pregnant, bisexual or lesbian women were the most likely to have engaged in prostitution during the previous years[139].

According to a National School Climate Survey, two out of five youths do not feel safe at school because they are lesbian, gay, bisexual, or transgendered and 87% of those who did feel safe said that they sometimes or frequently heard homophobic remarks made at school. Of the children who did feel safe, 46% reported verbal harassment, 36% reported sexual harassment, 12% physical harassment, and 6% were physically assaulted in their school. Over a third of them reported hearing homophobic remarks from faculty or school staff, while 99% of them heard homophobic remarks from other students. All together, 69% of these young people reported experiencing some form of harassment or violence [140]. In the 1995 Massachusetts Youth Risk Behavior Surveillance, a study of 9th to 12 grade public high school students, gay, lesbian, or bisexual students represented 2.5% of the population. Gay, lesbian, and bisexual youth were more likely than their peers to have been victimized and threatened and to have been engaged in a variety of risk behaviors including suicidal ideation and attempts, multiple substance use, and sexual risk behaviors. They were more than four times as likely to report being threatened with a weapon school property, almost five times as likely to report failing to attend school because of fear about safety, more likely to carry a weapon themselves, and more likely to have engaged in a physical fight than their heterosexual peers [141].

There are some indications that LGBT-specific programming in schools can help reduce some problems in this population. In a study of high school students and HIV education, GLB youths reported more substance use, high-risk sexual behaviors, suicidal thoughts or attempts, and personal safety issues than did heterosexual youth. Among those who were sexually active, GLB youths reported more lifetime and recent sexual partners than did heterosexual teenagers, and more of them reported alcohol use before last sex and a history of pregnancy. In schools with gay-sensitive instruction, GLB youths reported fewer sexual partners, less recent sex, and less substance use before last sex than did GLB youths in other schools [142]

Parents in Jail

Since 1985, the number of women in prison has almost tripled [143]. Approximately three-quarters of the women in prison are mothers [144]. According to a report released in 2000 by the Bureau of Justice, in 1999 an estimated 721,500 State and Federal prisoners were parents to 1,498,800 children under age 18. Forty-six percent of these prisoners reported having lived with their children prior to incarceration that means that over 336,000 American households were directly affected by the incarceration of a parent. One-third of mothers in prison had been living alone with their children within a month of their incarceration. Of the nation's 72 million minor children, 2.1% of them had a parent in prison in 1999 [145]. Forty percent of fathers and 60% of mothers had at least weekly contact with their children prior to going to jail. An estimated

46% of women in state prisons in 1991 who had minor children said they talked with those children on the phone at least once a week; 45% had contact by mail at least once a week; and 9% were visited by their children [146].

Nearly 60% of the parents in State prisons reporting using drugs within a month prior to their incarceration and 25% of them admitted to being alcohol dependent. About 14% reported being mentally ill and 70% of the parents did not have a high school diploma. Of all minor children in the United States, 22% of them had a parent in prison were under 5 years old. Nearly half of all imprisoned parents were black. On the average, parents in State prisons expected to be serving 80 months while those in Federal prisons expected to be serving at least 103 months. Over a third of parents in State prisons had committed their crimes while under the influence of alcohol. One in three mothers in State prisons committed their crimes to get drugs or money for drugs. Nearly 20% of mothers in State prisons had been homeless in the year prior to admission. About 1 in 7 parents in State prisons reported indications of a mental illness [145]. Regardless of race, children's grandparents were the most common single category of caregivers. Nearly 10% of the women reported that their children were in a foster home, agency, or institution [146].

These figures translate into more than 1.3 million minor children who are the offspring of women under correctional sanction; more than a quarter million of these children have mothers who are serving time in prison or jail. About two-thirds of women in State prisons and half of women in Federal prisons who had young children had lived with those children prior to entering prison. About one in six women inmates had criminal records spanning both their juvenile and adult years. In 1996, women accounted for about 11% of successful discharges from parole and 8% of unsuccessful parole terminations. Overall, about 45% of women for whom parole supervision was ended in 1996 were returned to prison or had absconded. Women successfully discharged from parole supervision had spent an average of 15 months in prison on their sentence and 20 months under supervision in the community [147]. For rapidly growing children this means that mothers miss critical periods in their children's development and, given the high rate of recidivism, that the children are faced with repeated loss and separation.

According to the Pennsylvania Department of Corrections, 55% of inmates have one or more children under the age of 18, 42% had two or more children under the age of 18 – 44% for females. Every woman in the Pennsylvania prison system has 1.6 children. During March 1999, this represented a total of 717 minor children. The average age of these minor children is seven years old [148].

The impact of having an incarcerated parent has not yet been well studied. One investigator places the effects of parental imprisonment into three major categories: the strains of economic deprivation; the loss of parental

socialization through role modeling, support, and supervision; the stigma and shame of societal blaming. The strain perspective looks at the loss of economic capital, but also of the social capital of relationships among family members and the organization of family life toward maintenance and improvement of life opportunities. As a result of parental imprisonment children often must assume unexpected roles and responsibilities that divert them from more age appropriate activities. They may need to supplement family income and become more susceptible to the promise of reward from underground economies and criminal activity. Alternately, incarceration of parents may stop the drain of income, as the family's money is no longer being used to support a drug habit and all that goes along with criminal activity. Similarly with the socialization perspective, if the parent lost to incarceration has played a positive role in the life of the family then the loss may be a significant one. Children may lose whatever positive supervision, support and role modeling that the parent was providing and force a shift of allegiances upon the child. If the parent has played a negative role in these areas, then the removal to prison may open the possibilities for the child of receiving what has been missing through a new placement position. The stigma of criminalization is another way that children are punished along with their parents. Increasingly, the stigma of imprisonment results in exclusion from the social group, often permanently, particularly given more recent legislation that bans people with certain convictions from ever receiving benefits afforded others. This risks creating permanent defiant outlaws in the previously incarcerated parents and their children [149].

We do know that according to one study, boys whose fathers have been incarcerated receive higher teacher ratings for delinquent and aggressive behavior [150] A study compared a group of behaviorally disturbed children in day hospital treatment who had incarcerated parents with a group of children without this history who were treated in the same facility at the same time. Children with histories of incarcerated parents accounted for almost 40% of those treated. They were more likely than their peers without histories of having had an incarcerated parent to have had substance abusing parents and to have been involved in at least one report of suspected child abuse/maltreatment [150].

The child welfare system is significantly affected by the increasing number of children with incarcerated parents. As of 1994, in about 4% of the cases of children and families who received child welfare services the presenting problem of the primary caregiver was incarceration. Studies suggest that 8-10% of the children of female prisoners are in some form of out-of-home care [151].The incarceration of mothers is often even more disruptive to the life of a family than the imprisonment of fathers, because in two-thirds of the cases, mothers are the primary caregivers before their arrest. Small-scale studies suggest that children are profoundly affected by parental arrest and incarceration and often suffer

from multiple psychological problems and negative behavioral manifestations including decline in school performance, truancy, substance abuse and aggression [152].

A study of 36 children from 5-16 years old who were participating in a visitation program at a women's prison, found that three-quarters of the children reported symptoms including depression, difficulty in sleeping, concentration problems and flashbacks about their mother's crimes and arrests as well as poor school performance. The impact on children depends in part on the age of the child involved. Very young children separated from their primary caregivers will suffer from impaired parent-child bonding. Loss of a parent in early childhood often leads to developmental regression, anxiety, and guilt. In later childhood, children may experience signs of traumatic stress and reactive behavior. In early adolescence, the reactions are likely to be characterized by a rejection of limit-setting behaviors and in late adolescence a premature termination of the parent-child relationship and intergenerational crime and even incarceration [152]. All of these symptoms leave a child more vulnerable to substance abuse and this creates a chain linking parental substance abuse and incarceration to the possibility of the same sequence recurring in the next generation.

One of the obvious negative impacts of having an unavailable parent is the impact that lack of mentoring can have on a child's substance use. To examine the joint influences of parental monitoring and peer influence on adolescent substance use over time researchers studied 6500 adolescents attending six high schools in Wisconsin and northern California. Parental monitoring was negatively associated with substance use, whereas the more involved an adolescent's peers were in substance use, the more likely he or she also was to use drugs and alcohol. Effects of monitoring and peer coercion were strongest for boys and girls at the transition into substance use, rather than at the transition from experimentation to regular use. Poorly monitored adolescents are more likely to use drugs, and drug-using adolescents seek out like-minded friends. Once an adolescent associates with drug-using peers, his or her own substance use approaches their level [153].

Juvenile Crime and Children in Jail

We are learning more about the juveniles who become seriously violent offenders and there we can see the cycle of violence making its way down through the generations. Violence does not appear out of nowhere. Beginning in childhood, violent offenders develop behavior problems over time including aggression, property offences and conflicts with authority figures. Screening, evaluation and treatment could occur before they reach adulthood, but services in the community are fragmented or often non-existent. This is most unfortunate because preventive interventions are known to be effective [154].

According to one recent study of a delinquent population, a history of maltreatment increased the risk of youth violence by 24%. For each type of family violence – partner violence, a family climate of hostility, and child maltreatment - adolescents who live in violent families have higher rates of self-reported violence than do youngsters from non-violent families. The effect of multiple forms of violence is even more dramatic. While 38% of the youngsters from non-violent families reported involvement in violent delinquency, this rate increased to 60% for youngsters whose family engaged in one of these forms of violence, to 73% for those exposed to two forms of family violence, and further increased to 78% for adolescents exposed to all three forms of family violence. Exposure to multiple forms of family violence, therefore, doubles the risk of self-reported youth violence [155].

In one study, childhood abuse and neglect had a significant impact on the likelihood of arrest for delinquency, adult criminality, and violence. By the age of 32 years, almost half of the victims of abuse and neglect were arrested for a non-traffic offence [56]. In another study of 213 adolescent delinquents, results indicated that violent offenders and undetected violent offenders had higher rates of exposure to serious physical abuse, and weapons violence between adults, than controls and those who denied violence. Exposure to serious violence also was associated with lower self-reported competence, attitudes more supportive of aggression, and more use of aggressive control as a form of coping [156].

One study examined the incidence of post-traumatic stress disorder (PTSD) in a sample of 96 adolescent female offenders and found that the rate of PTSD among incarcerated female delinquents not only is higher than that in the general population but surpasses the incidence of PTSD among incarcerated male delinquents. In addition, those who suffer from PTSD also tend to exhibit higher levels of distress and lower levels of self-restraint [157].

In 1999, the population of girls detained at the Youth Study Center, Philadelphia's secure juvenile detention center, continued to grow. Typically, girls comprised less than 10% of new delinquency petitions annually, but by 1999, girls were averaging approximately 30% of the population. Some members of the Juvenile Unit of the Philadelphia Defender Association decided to survey the population by reviewing records and interviewing all of the girls who were public defender clients, paying special attention to their family histories, diagnoses, substance abuse and trauma histories. Out of this data they compiled a profile of the typical girl being held in detention in Philadelphia. She is African American; was found dependent prior to her first arrest; had experienced five or more foster care transitions; had at least one parent that abuses drugs/alcohol; had experienced some type of trauma (sexual abuse, physical abuse, neglect or witness to violence); had been committed to a psychiatric hospital at least once, most likely for a suicide attempt; abused drugs or alcohol herself; had exhibited

violent behavior, most likely in the school setting; had an Axis I diagnosis of "Oppositional Defiant Disorder"; had been arrested for aggravated assault, but would not be found guilty of the felony; would stay in detention for over a month, even if it is her first time in detention; had a history of running away. After gathering the data, the investigators asked whether adequate services were available in Philadelphia's Juvenile Justice System to meet the needs of these girls and found many deficiencies including a misdiagnosis of mental health problems with an absence of PTSD diagnoses even though these girls had experienced significant trauma: 81% reported trauma of some sort; 43% physical abuse, 38% sexual abuse, 29% neglect or abandonment, 38% witnessing violence. They were not receiving treatment for their traumatic backgrounds. The girls essentially "treat themselves" with street drugs – 77% used substances abusively. Additionally, 54% had been hospitalized for psychiatric reasons and 10 of the 26 girls had at least one suicide attempt. The authors also noted the unhelpful degree of fragmentation in the legal system supposed to serve these girls. The girls get horizontal representation by the legal system, so lawyers do not follow them throughout their involvement in the justice system and there is an absence of information exchange between the dependent and delinquent systems, so serious issues of abuse and neglect are not factored in when the judge makes decisions [158]. In so many ways, the odds are stacked against these girls becoming successful adults or good parents. Instead, they are more likely to perpetuate the conditions they have experienced.

Childhood Injury, Violence and Substance Abuse

In homes where family violence is occurring, children often get caught in the crossfire – figuratively and literally. Investigators designed a study to describe the causes, types, and patterns of pediatric injuries resulting from family violence. They reviewed the medical records of 139 children who presented to the emergency department with injuries resulting from domestic violence. Children who were injured during episodes of domestic violence ranged in age from 2 weeks to 17 years. Although the mean age of the children identified was 5 years, 48% of the children were younger than 2 years. Although the most common dyad involved in the fight was the mother and father (57% of cases), extended family members and non-related adults were involved in almost one third of the cases. The most common mechanism of injury was a direct hit (36%). Of the injured children who were younger than 2 years, 59% were injured while being held by parents. Thirty-nine percent of the children were injured during attempts to intervene in fights. The majority of injuries were to the head (25%), face (19%), and eyes (18%). Young children sustained more head and facial injuries than older children, who had disproportionately more extremity trauma. Medical intervention was indicated in 43% of patients, of which 9% required hospital admission and 2% required surgical or intensive care

intervention. Of the 91% of children discharged from the emergency department, 73% returned home, and 27% went to alternative homes. In their conclusions the researchers urged that all pediatric injuries be screened for exposure to family violence, even the minor ones [159].

A group of investigators wanted to evaluate for the presence of acute stress disorder (ASD) symptoms in the emergency department and provide an initial estimate of the prevalence, severity, and variability of these symptoms in violently injured urban children and young adults. Out of 109 identified youths, 81 participated. Fear, helplessness, or horror during the injury event was reported by 59 (73%) of study participants. Each of the following categories of ASD symptoms was reported by a significant number of youths: dissociation at the time of the trauma (78%); post-trauma dissociation, (41%); re-experiencing intrusive thoughts or images, (82%); avoidance, (65%); and hyperarousal, (39%) [160]. Acute stress disorder is known to be a predictor for the development of PTSD [161].

Children who sustain injuries, even accidental injuries, are at a heightened risk for the development of PTSD. One study looked at 48 children, aged 7-17 years and their parents who were assessed during an acute hospitalization after an injury. At outpatient follow-up at least 1 month later, children were evaluated for current PTSD diagnosis and PTSD symptomatology (PTSDS) by a child structured interview and for PTSDS by a parent questionnaire. A total of 12.5% had the full syndrome of PTSD at follow-up, and an additional 16.7% had partial (sub-syndromal) PTSD. Full PTSD was associated with a higher level of prior psychopathology, higher parental acute distress, and higher rates of prior sexual abuse, compared with partial or no PTSD. Prior psychopathology, parental distress, and, to a lesser extent, children's acute distress as reported by parents and breadth of prior traumatization, predicted subsequent PTSDS [162].

Another study was designed to look prospectively at the presence of post-traumatic stress disorder (PTSD) in children hospitalized following acute physical injury. Forty children ages 8-17 were interviewed approximately 1 month following a serious injury and assessed for PTSD, pretrauma behavior problems, levels of fear at the time of the trauma, and post-traumatic thought suppression. Twenty-two and a half percent of participants developed PTSD; 47.5% met criteria for at least two of the three PTSD symptom clusters. Greater thought suppression was associated with increased symptoms of PTSD, as were the child's fear response at the time of the trauma and pretrauma internalizing behaviors [163].

Children in the United States don't just witness violence or experience violence at the hands of their caregivers. They also are the victims of criminal violence and many kinds of injury including self-injury. The Los Angeles Police Department surveyed the number of children and adolescents under the age of

18, who were shot at, injured, or killed in 1991. They discovered that a total of 677 adolescents and children were shot at, among whom 429 (63 percent) had gunshot wounds and 36 (5.3 percent) died from their injuries [164]. According to another survey, 1 in 5 pediatricians in the United States treated a gun injury in the prior twelve months [165].

As we can anticipate, given the extensive exposure of children to various forms of violence, that substance abuse problems among children and adolescents is a widespread problem. In a Minnesota study survey, of the students who reported any substance use in the past 12 months, 13.8% of the ninth graders and 22.7% of the 12th graders met the criteria for a substance abuse diagnosis, and 8.2% of the ninth graders and 10.5% of the 12th graders met the criteria for dependence [166]. The older the child, the more likely it was that the presence of an existing mental disorder, intentional injury and injuries that occurred at home involved the use of alcohol or drugs [167].

Substance use and abuse increases the risk of injury in any population, but add the tendency among young people to engage in risky behaviors, to be oblivious to risk, and to react in self-destructive ways to emotions they cannot manage and we have a formula for disaster. In one study of children less than 21 years of age who were admitted to a hospital for life-threatening injuries, 42% tested positive for alcohol or drugs. In this particular study all of the substance-abusing juveniles were over the age of 14, but in the age group 14 – 15, 71% tested positive. Of the adolescents who were victims of gunshot wounds, 72% had evidence of substance use. The authors of this study concluded that substance use, along with poverty, inadequate family support, and peer pressure are factors that influence injury risk in this population [168]. In another study of 139 cases of gunshot wounds in patients under 17 years of age, who were admitted to Children's Hospital of Philadelphia from January 1, 1986 to June 30, 1992, shootings were considered intentional in only 26.6% of the cases, and the assailant was known in 32.4% of instances. Of the teenage patients tested for substance abuse, results were positive for 36% of the teens [169].

Confirming these findings, in another study of almost 2000 high school students aged 14-18 years, regarding the incidence of injury and substance use at the time of the injury in the prior 6 months, alcohol or other drugs were reported particularly often for falls, cuts, and gun and assault injuries. Alcohol or other drugs were reported to be involved in a substantial proportion of injuries resulting in medical care, most notably for gunshots (70%), pedestrian injuries (42%) and physical fights (38%) [170]. In another large study of high school students the authors surveyed the relationship between injury and substance abuse. Their analysis revealed that the odds of a substance use-related injury increased approximately sixfold when adolescents reported engaging in risk-taking behavior. About 15% of the teens reported injuries associated with

substance use. Adolescents who reported a history of risk-taking behaviors were much more likely to report substance use-related injuries [171]. The problems often begin prior to adolescence.

In a study of preteens, aged 10-14 years, all of who had been recorded in the National Pediatric Trauma Registry between 1990 and 1995, 9% of the children were positive for alcohol or another psychoactive drug such as marijuana or cocaine. In a study of adolescents who were admitted to a pediatric trauma center, 34% were positive for alcohol or drugs of abuse, and these children were more likely to have intentionally injured themselves. [172]. In another study of 125 adolescent victims of major trauma brought to an inner-city trauma center in 1990, 25% of screened adolescent victims had positive urine toxicology screens for alcohol or illicit drugs. The most commonly detected drugs were alcohol, cocaine, and opiates. Gender, race, mechanism of injury, mental status at presentation, injury severity score, and revised trauma score were not associated with a positive drug screen [173].

Despite the fact that serious injury frequently involves substance abuse in children and adolescents, a national survey of trauma centers showed that just 72.0% of level 1 trauma centers routinely obtain blood alcohol levels on trauma patients and only 50.4% routinely utilize toxicology screens. The lowest rates of screening occurred for 12-20 year olds [174].

Foster Care and Adopted Children

As of September 30, 1999, there were 568,000 children in foster care. The median age was 10.1 years. Of these children, 36% were White Non-Hispanic, 42% were Black Non-Hispanic, 15% were Hispanic, and 7% were of other racial/ethnic origins. Fifty-two percent were male and forty-eight percent were female. With data from 30 states, it is estimated that 17% of the children who entered foster care in 1998 had been in foster care before. It is estimated that 1.5% of children who were maltreated in 1999 were maltreated by substitute care providers which includes foster parents, residential care providers, and child care providers. This translates to an estimated 12,390 children out of an estimated 826,000 maltreated children in 1999. Of the 568,000 children in foster care, 48% were in family foster homes, 26% were in relative foster homes, 17% were in group homes or institutions, 3% were in pre-adoptive homes, and 5% were in other placement types. As of September, 1999 42% of these children had goals of reunification, 19% had goals of adoption, 8% had goals of guardianship or custody to a relative, 5% had goals of emancipation, 7% had goals of long-term foster care, and 19% had not yet had a permanency goal established. Of the 122,000 foster children who exited foster care during the first half of 1999, 59% were reunified, 16% were adopted, 12% went to a legal guardian or relative, 8% were emancipated and 5% had other outcomes. Of

those 122,000 children, 21% had been in foster care less than one month, 16% had been in care for 1-5 months, 13% had been in care for 6-11 months, 19% had been in care for 1-2 years, 11% had been in care for 2-3 years, 11% had been in care for 3-4 years, and 10% had been in care for five or more years. The total spending, including Federal, State and local for out-of-home care was estimated to be at least \$9.4 billion [175].

Substance abusing mothers, particularly those from low income families, are at heightened risk for out-of-home placement of their children. In one study, investigators wanted to identify perinatal factors that are predictive of disruption in primary care giving among infants of substance abusing women. They obtained data from a randomized longitudinal cohort study of 152 mother/infant dyads who were assessed for evidence of disruption of primary care giving or neglect during the first 18 months of life, defined by mother's inability to provide care. Sixty-six infants (43.4%) had disruption in their primary care during the first 18 months of their life, 86 infants (56.6%) remained in the care of their mothers. Women who were younger, were heroin users, had two or more children, had other children in foster care, and reported depressive symptoms were least likely to provide ongoing primary care for their infant [176].

In a methadone maintenance program for pregnant, drug dependent women, an investigation was undertaken to study the occurrence of violence experienced by the women as children and as adults and to learn whether those who report past violence/abuse are more likely to neglect and/or abandon their children to the care of others. Subjects included 178 drug dependent women who completed a Violence Questionnaire and 70 comparable, but drug-free women. Results revealed that a history of violence or abuse is related to drug abuse and also to the placement of one's child (children) in foster care [177].

A study examined the association between family homelessness and children's placement in foster care. In a random sample of 195 young foster children, almost half of the birth parents of the foster children had experienced homelessness. Those children were more likely than other foster children to have siblings in foster care and to be placed with non-relatives [178].

In a study of adopted children, investigators looked at the extent of symptomatology related to attention-deficit hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD) in a statewide sample of 808 adopted youth, aged 4-18 years. According to parental report, a striking number of the youth qualified as manifesting significant symptom levels of externalizing behavior problems: 21% met symptom cutoffs for ADHD (with or without ODD) and 20% met criteria for ODD (with or without ADHD), for a combined total of 29% of the sample. A number of parent-reported, preadoptive risk factors distinguished these groups from one another and from the control group of children. The clearest associated factors included histories of preadoption abuse/neglect, later

age of adoption, prenatal drug exposure, and placement in multiple foster homes prior to adoption [179].

In another study, administrative data on child abuse reporting, foster care, birth records, and juvenile corrections (CYA) were linked to prospectively examine the risk of incarceration as an adolescent following an investigation of abuse or neglect after age 6. The 10 county California sample included 159,549 school-aged children reported for abuse and neglect after 1990. About 8 per 1,000 children in the sample were later incarcerated in CYA. African American and Hispanic children who received in-home or foster care services after the index investigation event had a lower risk of incarceration than those whose cases were closed after the investigation. Among females, the rate of incarceration was highest for those who experienced foster or group care placements. Children initially reported for neglect were more likely to be incarcerated than those reported for physical or sexual abuse. This study finds that one serious negative outcome, CYA involvement, can only be understood when a number of factors are considered. The importance of understanding the differences between how different subpopulations respond to services is highlighted. Specifically, these findings suggest that more attention should be focused on children who are now receiving no services after an investigated child abuse and neglect report, on females, and on victims of child neglect [180].

Since the 1980s Child Protective Services has increasingly relied on family reunification for abused/neglected children rather than long-term foster care or adoption. While family reunification practices are controversial, little research is available to inform the debate. This research explores the efficacy of these practices. Researchers did a study utilizing two CPS data sources and both quantitative and qualitative methodologies to identify reentry rates and correlates of reentry for abused and neglected children returned to their families by CPS. System reentry due to additional maltreatment was considerable. Thirty-seven percent of the children reunited with their families reenter the system within 3 1/2 years. Correlates of reentry are identified as: abuse type, CPS history, parental competency, race, criminal history, substance abuse, and social support. Notably, assessments of risk made by caseworkers are found to be unrelated to reentry. The authors conclude that the high reentry rate and the limitations of current risk assessment procedures suggest that CPS family reunification practices have not been entirely successful [181].

Another group of investigators did a literature review of 46 program evaluation studies they could find in a database of over 800 published between 1977 and 1993 articles on Family Preservation Services (FPS). They concluded that despite current widespread use of FPS to prevent out-of-home placements of children, evaluations of FPS are methodologically difficult and show no benefit in reducing rates of out-of-home placements of children at risk of abuse or neglect in 8 of 10 studies. Consistent, methodologically rigorous evaluations are

needed to determine the effectiveness of FPS and to guide social policy for high-risk children and their families [182].

A study was designed to compare 109 homeless young people, 41 who were shelter-based and 68 children involved in foster care systems. The street youth exhibited greater risk-taking behaviors and suffered from poorer health status and access to care than did systems youth. The main differences were in substance using and high-risk sexual behaviors. The street youth were more likely to report previous exposure to violence and having been victims of forced sex. Self-reported risk behaviors, including sexual activity and substance abuse were corroborated by more objective information on these items from medical record information. The street youth were more likely to be medically uninsured, to have used an emergency department in the past year, and to have used an emergency department for their last care [183].

The ability to assess accurately risk factors for maltreatment while in family foster care is essential for developing prevention and intervention strategies. Yet information about children involved in maltreatment episodes while in foster care is severely limited. In a study of Baltimore Child Protective Services investigation records between 1984 and 1988, results indicated that foster families had over a three-fold increased frequency of maltreatment reports as compared to non-foster families. Report frequency was highest for physical abuse with a seven-fold risk of report as compared to non-foster families. Overall, 20% of foster care reports were substantiated as compared to 35% of non-foster reports, although the risk of having a substantiated report was significantly higher in foster care. The distribution of report types in foster care differed from those in the community with physical abuse the most frequent allegation in foster care, as compared to neglect as the most frequent allegation in the community [184]. A related correlational study reported on characteristics, health, and functioning parameters of all 78 children with substantiated maltreatment reports between 1984-1988 in an urban foster care program as compared to a random sample of 229 non-maltreated children in foster care in the same time period. Almost 50% of the substantiated maltreatment was sexual abuse with the remainder physical abuse and neglect. Problems in health, development, and functioning were reported in the social services record for a large number of all children, but children sexually abused while in care were significantly more likely to have a non-kinship placement, and to have mental health and development problems identified. Physical abuse and neglect while in foster care were not associated with child health and functioning characteristics [185].

Predictors of maltreatment of children living in family foster care were sought in characteristics of foster homes. Four characteristics that presented increased risk were identified: homes that had younger foster mothers, homes in which children shared bedrooms with other family members, homes about which case-workers had reservations and homes that were

restricted for placement of certain children. Kinship-care homes were found to present decreased risk [186].

A study examined placement outcomes of 206 severely maltreated children 7.5 years after arraignment in Boston Juvenile Court (BJC) on Care and Protection Petitions. Sixty-seven percent of the sample had been permanently removed from their parents and 33% had their cases dismissed in the BJC. At time of this follow-up, 21% of the full sample were still in temporary custody awaiting permanent placement. In addition, 4% of children had "drifted" back to their abusive/neglectful parents despite prior permanent removal. The average time children in this sample spent in probate proceedings (awaiting permanent placement) had increased substantially to 2.1 years since the last overview study of this sample 4 years prior. The rate of court referral for incidences of reabuse (a C&P filing), or delinquency was significantly lower among children who had been permanently placed. Rates of court-referral for reabuse charges were the same (16%) for children who were in temporary custody at the time of follow-up and children who had been dismissed back to the parent for whom the original C&P had been filed [187].

Another group of investigators decided to examine the impact of foster care, on the subsequent development of juvenile delinquency among child victims. One hundred fourteen foster children, aged 11 to 18 years, who had been in foster care for three or more years, and who were in foster care as a result of maltreatment were studied. A comparison cohort was composed of 106 victims of maltreatment who were left in their family home; these children were similar to the children in foster care with regard to age, race, sex, and year of diagnosis. Cohort differences in maternal education, type of abuse, history of prior maltreatment, sex, and race were controlled in the analysis. Foster children committed 0.050 crimes per person-year after age 11 years; home care children committed 0.059 crimes per person-year after age 11 years. Foster children were more likely to have committed criminal assault. Among foster children, an increased number of foster home placements correlated with an increased number of delinquency convictions. The authors concluded that overall, there appears to be no support for the idea that foster care is responsible for a significant portion of later problems encountered by victims of maltreatment [188].

Another study was designed to study the long term impact of adverse childhood experiences resulting from family breakdowns combined with a stable care environment and to determine predictive factors for maladjusted psychosocial integration in adulthood. Sixty-three children from severely psychosocially dysfunctional families were selected from among those having been in care in an institutional setting. All had been reared for at least 5 years by foster families, had been out of care for more than 5 years and were at least 23 years old at the time of the survey. Semi-structured interviews were used in a follow-up study to

assess adult outcome, essentially in terms of professional status, social, and family relationships. Data was obtained for 94% of the study population, 71% via direct interviews. The majority had managed to overcome their childhood adversities: 56% were well-integrated socially, 12% had average integration results, 20% were partially integrated and 10% were in situations of failure. These difficulties were linked to multiple family disturbances and repeated traumatic experiences during childhood. Multiple regression analyses indicated that these risk factors accounted for 28% of the variance in the social integration score. Severe emotional deprivation over a prolonged period was a contributing factor to clinical disorders. At the study period, intergenerational repetition of "child placement" behaviors, significant in the previous generation, had practically disappeared. The results also highlighted the substantial psychotherapeutic and child-rearing assistance provided by the staff of the foster care agency [189].

In Pennsylvania in 1996, 21,377 children in Pennsylvania lived apart from their families in out-of-home care, an increase of 28.3% since 1990. In 1998, public child welfare agencies in Pennsylvania placed 217 children into adoptive homes, a 78.7% decrease since 1995 [8].

Substance Abuse and Childhood Exposure to Violence

Alcohol is the top drug of abuse by America's teens. Children under the age of 21 drink 25% of the alcohol consumed in the United States. More than five million high school students (31.5%) admit to binge drinking at least once a month. The age which children begin drinking is dropping. Since 1975, the proportion of children who begin drinking in the 8th grade or earlier has jumped by almost a third from 27% to 36%. And the gender gap that for generations separated alcohol consumption by girls and boys has evaporated: male and female ninth graders are just as likely to drink and binge drink. Eighty percent of high school students have tried alcohol, while 70% have smoked cigarettes and 47% have used marijuana and 29% have used some other illegal drug. Children who begin drinking are more than twice as likely to develop alcohol-related problems. Those who begin drinking before age 15 are four times likelier to use illegal drugs than those who do not drink [190].

According to the statistics gathered by the National Institute of Alcohol Abuse and Addiction, in the previous thirty days, 27% of Philadelphia teenagers had driven with someone who had been drinking alcohol; 6% had driven a vehicle while under the influence; 33% had taken their first drink of alcohol, other than a few sips, before the age of 13; 33% had had at least one drink of alcohol on one or more days of the last thirty days; 17% admitted to five or more drinks in a row on at least one day during the previous thirty days [191].

In Pennsylvania in 1999, 16% of children 12-17 had used alcohol in the previous month, while over 8% had used illicit drugs [11]. Of Pennsylvania students surveyed, 51% of 12th graders report drinking alcohol at least once a month, 24% report drinking at least once a week. In Philadelphia in 1999, nearly 40% of high school students reported using marijuana, while 7% admitted to inhalant use and over 5% to methamphetamine use [11].

Child abuse and neglect, witnessing family violence, exposure to trauma and violence in the community all substantially increase the risk for substance use and abuse as well as many other problems. One study looked at 597 adolescent girls in treatment for substance abuse in nine inpatient facilities and found that 35% of them reported a history of sexual victimization [192]. In a review of medical records for 150 hospitalized adolescents with psychoactive substance abuse along with a psychiatric disorder, 61% had a history of documented or suspected maltreatment, with the most common forms of maltreatment being physical and sexual abuse [193].

In a recent study, 256 adolescents with alcohol disorders, aged 14 through 18, were compared to a control group. Adolescents with alcohol dependence or alcohol abuse had higher trauma occurrence rates than control adolescents in every trauma category. Female gender was associated with a higher rate of sexual abuse and violent victimization was more common in males. Approximately a quarter of the alcohol dependence and abuse groups had experienced traumas in two or more categories (physical abuse, sexual abuse, violent victimization, witness violent crime, any interpersonal violence, other traumas) while most of the control group adolescents had not experienced any of these events and only one control subject had experienced two or more interpersonal trauma categories. The proportion of cases having the specific trauma prior to the onset of alcohol use disorder was as follows: 90% physical abuse; 77% sexual abuse; 23% violent victimization; 40% witnessing violence; 76% any of these four. Additionally, positive life events were less common in the alcohol dependence and alcohol abuse groups than in the control group, while negative stressful life events were much more common in the dependence and abuse group. Negative stressful life events included items like family arguments, failing in school, legal troubles, having a relative arrested. These negative life events in isolation are not likely to be major factors in the development and course of the alcohol use disorders but taken together with the history of trauma, may contribute to the initiation, acceleration, or chronicity of alcohol-related problems. The authors hypothesized that alcohol consumption may be perceived by teens as a way to regulate their emotional states quickly and with little effort or need to turn to others [194].

In a study examining the comorbidity of substance use disorders and other psychiatric disorders in adolescent populations, of 100 consecutive admissions to an acute care adolescent psychiatric inpatient unit for substance

use disorders, 60% of all adolescents interviewed had histories of sexual or physical trauma, with trauma being significantly more common in the substance-using group [195]. Another recent study looked at the psychological and behavioral functioning in psychiatrically hospitalized adolescents who reported histories of childhood abuse. The high-abuse group was characterized by significantly higher levels of substance use problems, dependency, suicidality, violence, impulsivity, and borderline tendency. The most severe psychological problems were associated with higher levels of childhood abuse [196].

Sexual abuse increases the risk of substance abuse and mental health problems in children and adults. In a study of severely mentally ill youth, sexual abuse was associated with higher rates of social chaos, associated abuse and neglect, PTSD and substance abuse disorders and was more likely to occur to girls. The sexual abuse predicted sexually inappropriate behaviors, symptoms of PTSD and borderline personality disorders, dissociative symptoms, substance abuse and animal cruelty [197]. In a vicious cycle typical of these problems, the use of drugs or alcohol make adolescent girls more vulnerable to sexual assault, and a history of sexual assault make it more likely that girls will turn to drugs or alcohol as a way of reducing distressful feelings. In one study, 47% of adolescent girls who were sexually assaulted were under the influence of drugs or alcohol just prior to the assault. [198].

Likewise, among adolescent substance abusers, the rate of PTSD is very high and establishes a continuity between adolescent and adult substance abuse. In one study of adolescent substance abusers who were receiving treatment, the lifetime prevalence of PTSD was 45% for girls and 24% for boys, and the current prevalence was 40% for girls and 12% for boys. This was five times the prevalence rate reported for a community sample of adolescents [199]. In another study looking at psychiatrically hospitalized adolescents, 23% met criteria for PTSD, 37% for drug use, and 34% for alcohol use. The association between PTSD and substance abuse was particularly strong for girls [200].

Children, who are already abusing substances when exposed to violence, even the violence of a friend's suicide, are more likely to develop PTSD, have prior suicide attempts themselves, have a history of parent-child disruptions, and have a history of loss [201]. Several community studies have demonstrated that there is a high rate of co-occurrence of substance use disorders and post-traumatic stress disorder among adolescents [202]. In a national household probability sample of 4,023 adolescents aged 12 to 17 years interviewed by telephone about substance use, victimization experiences, familial substance use, and post-traumatic reactions, several major findings emerged. Adolescents who had been physically assaulted, who had been sexually assaulted, who had witnessed violence, or who had family members with alcohol or drug use problems had increased risk for current substance abuse/dependence. In

addition, post-traumatic stress disorder independently increased risk of marijuana and hard drug abuse/dependence [203].

Once a child has entered the drug culture, the problem is compounded. The effect of crack dealing on emotionally disturbed adolescents in two African-American inner-city communities was found to have dynamics and consequences separate from those of crack use. These include post-traumatic stress disorder and other significant emotional disturbances arising from the violence associated with crack dealing, and the shaping of adolescent identity by the associated culture of violence and guns [204].

A study investigated the progression from conduct disorder to antisocial personality disorder among individuals treated for adolescent substance abuse. This issue is important because of the poor outcomes observed among individuals with antisocial pathology after treatment for alcohol and drug problems. The utility of factors assessed at the time of treatment in predicting progression to adult antisocial personality disorder was evaluated in the context of developmental models of antisocial behavior. The researchers performed a prospective longitudinal study of 137 substance-abusing adolescents (53 female and 84 male), whose average age was 15.9 years and who met the DSM-III-R criteria for conduct disorder. Consecutively admitted patients were recruited from two adolescent inpatient alcohol and drug treatment facilities. Four years after treatment, 61% of the study group met the DSM-III-R criteria for antisocial personality disorder. The onset of deviant behavior at or before age 10, a greater diversity of deviant behavior, and more extensive pre-treatment drug use best predicted progression to antisocial personality disorder. At 4-year follow-up, the subjects with an antisocial personality disorder diagnosis exhibited more involvement with alcohol and drugs and poorer functioning across important life domains than the subjects without antisocial personality disorder [205].

In a 1995 Minnesota study of over 120,000 public school students in grades 6, 9, and 12, physical and sexual abuse were associated with an increased likelihood of the use of alcohol, marijuana, and almost all other drugs for both males and females in the three grades surveyed. Use of multiple substances was highly elevated among victims of abuse, with the highest rates seen among students who reported both physical and sexual abuse. Abuse victims also reported initiating substance use earlier than their non-abused peers and gave more reasons for using substances, including use to cope with painful emotions and to escape from problems [55]. In another study with a large study group, childhood maltreatment was found to be a significant predictor of adult arrests for alcohol- and/or drug-related offences [206].

The Adolescent Brain, Violence and Substance Abuse

It may be the combined impact of substance use and trauma on the developing brain that is one of the main mediating factors for chronic substance dependence, psychiatric dysfunction, and social dysfunction among adults. Certainly, an increasing amount of research is demonstrating the impact of trauma and substance abuse on the brain. The human brain continues to develop until we are at least twenty years of age. The part of the brain that categorizes incoming experience and that is critical for learning continues to develop throughout adolescence. It is this brain area, the hippocampus that may be particularly susceptible to the adverse effects of adolescent alcohol use disorders. We have known for a long time that chronic alcohol use in adults is associated with memory problems. One study compared the hippocampal volumes of adolescents and young adults with adolescent-onset alcohol use disorders to those of healthy matched comparison subjects. In an MRI study, both left and right hippocampal volumes were significantly smaller in adolescents and young adults with alcohol use disorders than in comparison subjects. The earlier the age of onset of alcohol abuse and the longer the individual had been drinking, the greater the decrease in hippocampal. During adolescence, the hippocampus may be particularly susceptible to the adverse effects of alcohol. This problem may be exacerbated by the impact of trauma on the same brain system [207, 208]. Although brain research into the impact of trauma is still in its infancy, there is evidence that for girls, sexual abuse is particularly damaging and associated in some studies with a reduction in the size of the part of the brain that connects the right and left hemispheres, the corpus callosum [209].

It may be that a significant pathway to early onset substance abuse occurs as a result of emotional and behavioral dysregulation that begins in infancy, progresses to conduct problems in childhood and then onward to substance abuse by early adolescence and severe substance abuse by early adulthood [210]. In the Rochester Youth Development Study, researchers did a longitudinal study to determine how officially documented maltreated youth differ from the general adolescent population as they grow up. They began collecting data in 1988 and repeated interviews every six months. The present data reflects information on youth beginning at about age 14 and ending at about age 17. While controlling for sex, race/ethnicity, family disadvantage, family structure, and mobility, children who have been maltreated go on to engage in significantly more delinquent activities than non-maltreated children, and generally, the more serious the maltreatment the more serious the delinquency. The prevalence of pregnancy among maltreated girls is 52% compared with 34% among non-maltreated girls. The risk of becoming pregnant is therefore approximately 50% higher among high schools girls who experienced maltreatment during their childhood. Girls exposed to multiple types of maltreatment are significantly more likely to become pregnant than girls who

experienced one type of maltreatment. Youth with a history of maltreatment in childhood are more likely to use drugs than non-maltreated subjects, in this study 43% vs. 32%. Thus, the risk of using drugs is about one-third higher among youth with a maltreatment history. School achievement is significantly lower among maltreated youth. Poor grades are evident among 33% of the maltreated group, compared with 23% in the non-maltreated group. Students performing poorly in middle school are considered at increased risk for continued academic failure in high school, low educational aspirations, premature school dropout, and reduced educational opportunities. Mental health problems that affect teenagers including externalized conduct problems such as aggressive, hostile, and hyperactive behavior and internalized problems such as social isolation, anxiety, and physical distress are more common among the maltreated children than the non-maltreated children, 26% vs. 15%. Maltreated (40%) and non-maltreated (42%) youth are almost equally likely to have only one or two problems. This suggests that many young people, not just those with official records of maltreatment, have a significant problem in some area of their lives. The group of most concern – youth experiencing three or more of the five problem areas examined – tend to have maltreatment histories. Of the maltreated youth, 32% have three or more negative outcomes, compared with only 18% in the non-maltreated group. The risk of multiple negative outcomes increases by nearly 80% among the maltreated subjects. On a brighter note, however, 28% of the youth with histories of childhood maltreatment were not presenting any negative adolescent outcomes at the time the study results were formulated, nor were 40% of the non-maltreated children [49].

One researcher suggests that the dysregulation of biological stress response systems is a major part of the physiological disturbance seen in maltreated children and adolescents, and may lead to an enhanced vulnerability for psychopathology, particularly post-traumatic stress disorder (PTSD) and depression. These emotional management problems then may put a child at increased risk for adolescent or young adult onset alcohol or substance use disorders [211].

A national household probability sample of 4,023 adolescents aged 12 to 17 years were interviewed by telephone about substance use, victimization experiences, familial substance use, and post-traumatic reactions in order to identify risk factors for substance abuse/dependence. Age and ethnicity data were available for 3,907 participants. Major findings were that: (a) adolescents who had been physically assaulted, who had been sexually assaulted, who had witnessed violence, or who had family members with alcohol or drug use problems had increased risk for current substance abuse/dependence; (b) post-traumatic stress disorder independently increased risk of marijuana and hard drug abuse/dependence; and (c) when effects of other variables were controlled,

African Americans, but not Hispanics or Native Americans, were at approximately 1/3 the risk of substance abuse/dependence as Caucasians [203].

Animal studies provide hints about the connection between exposure to violence in childhood and substance abuse. According to researchers, isolation stress enhances cocaine self administration and these results have important implications for the role of early childhood stress in vulnerability to cocaine addiction, providing strong evidence that early life stress enhances vulnerability to drug addiction [212].

The National Youth Survey is a longitudinal study that drew a sample of people in late 1976 of youth born between 1959 and 1965. There have been nine waves of investigation of this sample. A recent report was released about the short- and long-term consequences of adolescent victimization. The findings of the current study show that violent victimization during adolescence has a pervasive effect on problem outcomes in adulthood. It increases the odds of being a perpetrator (3.5 times) or victim of violence in adulthood (2.3 times), including felony assault perpetration and victimization, and domestic violence perpetration and victimization (almost 2 times). It nearly doubles the odds of problem drug use in adulthood and of ever experiencing PTSD. It also increases the odds of adult property offending. The risks posed by violent victimization during adolescence persist even when controls are introduced for sociodemographic characteristics and prior problems in adolescence. Frequency of adolescent violent victimization is a risk factor for failure to make the successful transition from adolescence to adulthood [9].

PTSD in Children and Adolescents

Post-traumatic stress disorder, or PTSD, is a serious and often chronically debilitating psychological injury that may affect a child's development in a variety of profound ways. One group of investigators looked at 100 consecutive referrals to an inner-city child and adolescent psychiatry clinic. Fifty-nine of the children had experienced a trauma that qualified as a precipitant of PTSD. For those with trauma, ages ranged from 3 to 18 years and 39 (66%) were males. The authors used a series of multiple regression analyses to examine the contribution of demographic characteristics, the nature of the stressor(s), and the role of preexisting clinical signs in the development of PTSD. Twenty-two percent of the 59 children who had been traumatized met the full criteria for PTSD, 32% had some symptoms of PTSD but did not meet the full criteria, and 46% had no symptoms of PTSD. Witnessing domestic violence or being physically abused predicted severity of PTSD. Children with preexisting aggressive behavior were more likely to be victims of physical abuse [213].

In a study of severely maltreated children and their mothers, 109 pairs of women and their children who were before a juvenile/family court due to maltreatment of sufficient severity to warrant removal of the child from parental custody were evaluated for PTSD and also given clinical psychiatric interviews. From the sample of 109 cases, 15.6% of the mothers currently had PTSD, while 36.7% had a past history of PTSD. Of the 109 evaluated children, 35.8% had PTSD. The onset of maltreatment was significantly earlier among children whose mothers meet PTSD criteria than among other maltreated children [214].

In another study, 337 children were assessed for exposure to a traumatic event. The leading precipitating event for PTSD symptoms was death or illness of someone close to the child. Family violence, violent crime, but not accidents also resulted in PTSD. Children with PTSD displayed comorbidity across different symptom classes, most notably phobias and separation anxiety [215].

Kids with PTSD symptoms are more likely to have suicidal behavior. One study looked at 106 adolescents in an urban high school and found that after controlling for depression and gender, PTSD symptoms were significantly related to suicidal ideation and showed a trend toward suicide attempt history. In addition, adolescents with high levels of PTSD symptomatology were more likely than peers with "average" levels of PTSD symptomatology to be currently thinking about suicide and to have made a past suicide attempt that could not be explained on the basis of depression or gender [216].

III. General Exposure to Violence and Substance Abuse

Exposure to Violence

To the date of this writing there have been four studies investigating the overall prevalence of traumatic events in the general population, all performed in the United States [217-221]. The results are grim. In the most recent study by Kessler and colleagues, 60% of men and 51% of women in the general population reported at least one traumatic event at some time in their lives. Almost 17% of men and 13% of women who had some trauma exposure had actually experienced more than three such events [218]. In Norris' study, the prevalence was even higher – 73.6% lifetime prevalence for men, 64.8% for women. In this study, 21% of the sample population had experienced a traumatic event in the year prior to the study [219]. In another survey of women by Resnick and her colleagues, the rate of lifetime exposure to any traumatic event was 68.9% and exposure to crime including sexual or aggravated assault or homicide of a close friend or relative was 35.6% [221]. The only study that showed a relatively low rate was that of Breslau and colleagues, thought to be different because the population sample was biased in favour of those adults who were of a higher socio-economic status than the general population. Even so, their study showed a trauma prevalence of 39.1% [220].

The kinds of exposure varied. The most common traumatic events, affecting about 15% to 35% of the people surveyed were witnessing someone badly injured or killed; being involved in a fire, flood, or other disaster, and being involved in a life-threatening accident. Also common were life-threatening experiences like robbery, and the sudden tragic death or injury of a close relation. A little less than 15% of the population admitted to molestation, physical attack, rape, combat, and physical abuse [217].

Statistics from the United States Department of Justice paint an even worse picture indicating that 83% of Americans will be victims of violent crime at some point in their lives and about 25% will be victims of three or more violent crimes [222].

Post-traumatic Stress Disorder and Comorbidity

But so what? What do we know about the effects of traumatic events in the population? As it turns out, exposure to traumatic events may play a significant role in explaining many of the medical, psychiatric, and social problems that afflict society. We will look at specific high-risk groups later. For now, sticking to the general population data, lifetime rates for post-traumatic stress disorder (PTSD) range from 1% to 12.3%, depending on a number of

factors including the kind of trauma exposure and the specific instruments used to measure that exposure. One of the most striking findings is the persistent, chronic, and debilitating nature of PTSD.

Another striking and consistent finding is the rate of comorbidity with PTSD. Even in the most conservative study, those with PTSD were two to four times more likely than those without PTSD to have virtually any other psychiatric disorder, particularly somatization [217]. According to one study, somatization was found to be 90 times more likely in those with PTSD than in those without PTSD [223]. In the study by Breslau and colleagues, those with PTSD were more than six times as likely to have some other psychiatric disorder [220]. The Kessler study showed that those with PTSD are almost eight times as likely to have three or more disorders – 88% of men and 79% of women with PTSD had a history of at least one other disorder [218].

In another study, the patients with one or more symptoms of PTSD were more likely than those without any mental disorder to experience poor social support, marital difficulties, and occupational problems, as well as more impairment on income and disability measures than even those with major depressive disorder. The people with PTSD symptoms were also more likely to have a number of chronic illnesses, consistent with many other studies of specific trauma groups. Although these patients have a disproportionate utilization of the health care system, they are reluctant to seek mental health treatment, a finding that has been seen in many other studies as well [217].

When investigators looked at the influence of previous exposure to trauma on the PTSD effects of subsequent trauma in a representative sample of 2,181 individuals in southeast Michigan, they found that a history of any previous exposure to traumatic events was associated with a greater risk of PTSD from the index trauma. Multiple previous events had a stronger effect than a single previous event. The effect of previous assaultive violence persisted over time with little change. When they examined several features of the previous exposure to trauma, the authors found that subjects who experienced multiple events involving assaultive violence in childhood were more likely to experience PTSD from trauma in adulthood. Furthermore, previous events involving assaultive violence--single or multiple, in childhood or later on--were associated with a higher risk of PTSD in adulthood [224].

Substance Use and Abuse in the United States

In 1999, 105 million Americans age 12 or older reported current use of alcohol, about 45 million for this group engaged in binge drinking, and 12.5 million were heavy drinkers [2]. According to the National Institute on Alcohol Abuse and Addiction, approximately 14 million Americans – about 7% of the

adult population – meet the diagnostic criteria for alcohol abuse and/or alcoholism. About 40% of Americans report having a direct family experience with alcohol abuse or alcoholism [3].

In 1999 the Substance Abuse and Mental Health Services Administration conducted the 1999 National Household Survey on Drug Abuse (NHSDA), the primary source of statistical information on the use of illegal drugs by the United States population, conducted since 1971. Nearly 70,000 Americans were sampled. According to the survey, an estimated 14.8 million Americans were current users of illicit drugs in 1999 and an estimated 3.6 million were dependent on illicit drugs while an estimated 8.2 million Americans were dependent on alcohol [2].

Of these, 1.5 million people were dependent on both illicit drugs and alcohol. Overall, an estimated 10.3 million people were dependent on either alcohol or illicit drugs – 4.7% of the total population age 12 or older. Of that number, 6.6% were white, 6.8% were Hispanic, 7.7% were black, 10.6% were Native Americans, and 3.2% were Asians [2].

The rate of illicit drug use was higher in metropolitan areas compared to rural, non-metropolitan areas, the highest rate going to large metropolitan areas. According to the National Household Survey on Drug Abuse (NHSDA), in 1996, 29.9% of American women over the age of 12, had used an illicit drug at least once in their lives – 33.3 million out of 111.1 million women. More than 4.7 million women had used an illicit drug at least once in the month preceding the survey. The survey showed 30.5 million women had used marijuana at least once in their lifetimes. About 603,000 women had used cocaine in the preceding month; 241,000 had used crack cocaine. About 547,000 women had used hallucinogens, including LSD and PCP in the preceding month. In 1996, 56,000 women used a needle to inject drugs, and 856,000 had done so at some point in their lives. During the same year, nearly 1.2 million females aged 12 and older had taken prescription drugs for a non-medical purpose during the preceding month [225]. An estimated 1.6 million Americans used prescription-type pain relievers non-medically during that year [2].

Males are more likely to be dependent on illicit drugs (4.9% vs. 2.6%) or alcohol than females (6% vs. 3.4%). However, for the youngest age group, age 12-17, the percent dependent on illicit drugs and on alcohol was essentially the same for males and females. Among whites, age 12-17, the percent dependent on illicit drugs was significantly higher for females than for males (3.9% vs. 2.8%) [2].

The misuse of alcohol is involved in approximately 30% of suicides, 50% of homicides, 52% of rapes and other sexual assaults, 48% of robberies, 62% of

assaults, and 49% of all other violent crimes. Alcohol is also a factor in 30% of all accidental deaths, including up to 50% of motor vehicle deaths [3].

Among pregnant women age 15-44 years, 3.4% reported using illicit drugs in the month prior to the interview, significantly lower than the rate among non-pregnant women age 15-44 which was 8.1%. Among pregnant women age 15-44 years, 13.8% used alcohol and 3.4% were binge drinkers. These rates were also substantially lower than rates for non-pregnant women of that age [2].

An estimated 2.8 million people, age 12 or older, received some kind of drug or alcohol treatment in the 12 months prior to being interviewed in 1999. Of this group, 1.6 million received treatment for illicit drugs and 2.3 million received treatment for alcohol. The rate of treatment for substance abuse was higher for males than for females (1.7% vs. 0.9%) [2].

IV. Exposure to Violence Among Adult Women

PTSD and Women

Women have a higher rate of PTSD than men, by some studies twice the rate [217]. Wanting to explore this difference further, investigators examined data from a community survey of trauma exposure and PTSD in Winnipeg, Canada. Women were found to be at significantly increased risk for PTSD following exposure to serious trauma, even when sexual trauma--which predominates in women--was excluded. Adjusting for gender differences in the number of lifetime traumas, or in the likelihood of the trauma being associated with particular reactions to or consequences of the event (i.e. thinking that one would be killed or seriously injured; sustaining a serious physical injury; seeing someone else seriously injured or killed) did not result in a lessening of the PTSD risk in women. Women were found to be at increased risk for PTSD following nonsexual assaultive violence (e.g. mugging or other physical attack) but not following non-assaultive trauma (e.g. fire, witnessing injury to others) [226].

Another group of researchers examined potential sources of the sex differences noted in post-traumatic stress disorder (PTSD) in the community by looking at data from another representative of 2181 persons aged 18-45 years in the Detroit primary metropolitan statistical area. The lifetime prevalence of exposure and the mean number of traumas were lower in females than males. The overall conditional risk of PTSD (i.e. the probability of PTSD among those exposed to a trauma) was approximately twofold higher in females than males, adjusting for the sex difference in the distribution of trauma types. The sex difference was due primarily to females' greater risk following assaultive violence. The sex difference in the avoidance and numbing symptom group following assaultive violence exceeded the sex differences in other symptom groups [227].

The ACEs Study

The ACEs (ACE stands for Adverse Childhood Experiences) Study is a major retrospective study of 17,337 adult health maintenance organization members (54% female; mean age, 57 years) who attended a primary care clinic in San Diego, California within a 3-year period (1995-1997) and completed a survey about childhood abuse and household dysfunction, suicide attempts (including age at first attempt), and multiple other health-related issues. The ACE's study provides a documented link between childhood exposure to violence, psychiatric disorders, physical disorders, and substance abuse. The researchers

asked people to place themselves into eight categories of adverse childhood experiences: psychological, physical, or sexual abuse; violence against mother; or living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned. The number of categories (not the numbers of occurrences) of these adverse childhood experiences was then compared to measures of adult risk behavior, health status, and disease. More than half of respondents reported at least one, and one-fourth reported falling into two or more categories of adverse childhood exposures.

Persons who had experienced four or more categories of childhood exposure, compared to those who had experienced none, had a 4- to 12-fold increased health risks for alcoholism, drug abuse, depression, and suicide attempt; a 2- to 4-fold increase in smoking, poor self-rated health, equal to or greater than 50 sexual intercourse partners, and sexually transmitted disease; and 1.4- to 1.6-fold increase in physical inactivity and severe obesity. The number of categories of adverse childhood exposure showed a graded relationship to the presence of adult diseases including ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease. The categories of adverse childhood experiences were strongly interrelated and persons with multiple categories of childhood exposure were likely to have multiple health risk factors later in life [228].

In the study a lifetime prevalence of having at least one suicide attempt was 3.8%. Adverse childhood experiences in any category increased the risk of attempted suicide 2- to 5-fold. From this study it is clear that a powerful graded relationship exists between adverse childhood experiences and risk of attempted suicide throughout the life span. The authors believe that alcoholism, depressed affect, and illicit drug use, which are strongly associated with such experiences, appear to partially mediate this relationship [229].

After adjusting for age, sex, race, and education, each category of childhood adverse experience also showed an increased risk for smoking behavior, and these risks were comparable for each category of adverse childhood experiences. Compared with those reporting no adverse childhood experiences, persons reporting 5 or more categories had substantially higher risks of early smoking initiation, of ever smoking, of current smoking, and of heavy smoking. Each relationship between smoking behavior and the number of adverse childhood experiences was strong and graded. For any given number of adverse childhood experiences, recent problems with depressed affect were more common among smokers than among nonsmokers [230].

Researchers also looked at unintended pregnancy in this cohort population. A total of 1193 women aged 20 to 50 years whose first pregnancy occurred at or after age 20 years were in the sample. The investigators categorized the risk of unintended first pregnancy by type of abuse

(psychological, physical, or sexual abuse; peer sexual assault) and type of household dysfunction (physical abuse of mother by her partner, substance abuse by a household member, mental illness of a household member). More than 45% of the women reported that their first pregnancy was unintended, and 65.8% reported exposure to 2 or more types of childhood abuse or household dysfunction. After adjustment for marital status at first pregnancy and age at first pregnancy, the strongest associations between childhood experiences and unintended first pregnancy included frequent psychological abuse, frequent physical abuse of the mother by her partner, and frequent physical abuse. Women who experienced 4 or more types of abuse during their childhood were 1.5 times more likely to have an unintended first pregnancy during adulthood than women who did not experience any abuse [231].

Compared to persons who grew up with no parental alcohol abuse, the adjusted odds ratio for each category of ACE was approximately 2 to 13 times higher if the mother, father, or both parents had abused alcohol. For example, the likelihood of having a battered mother was increased 13-fold for men who grew up with both parents who abused alcohol. For almost every ACE, those who grew up with both an alcohol-abusing mother and father had the highest likelihood of ACEs. The authors conclude that although the retrospective reporting of these experiences cannot establish a causal association with certainty, exposure to parental alcohol abuse is highly associated with experiencing adverse childhood experiences [232].

Partner Violence

It has been estimated, based on probability sampling, that from 2 to 3 million women are assaulted by male partners each year in the U.S. and that from 21-34% of all women will be assaulted by an intimate male during adulthood [54]. More than 50% of all women will experience some form of violence from their spouses during marriage; more than one-third are battered repeatedly every year; 15-25% of pregnant women are battered [64]. According to a nation-wide survey released by the Family Violence Prevention Fund, more than one in three Americans have witnessed an incident of domestic violence [233]. In homes where spousal abuse occurs, children are abused at a rate 1,500% higher than the national average [64]. In 1991, 28% of all female murder victims in the United States were slain by their husbands or boyfriends and in fact, family violence kills as many American women every five years as the total number of Americans who died in the Vietnam War [64]. Studies of partner violence reveal that 35-50% of young adults are involved in some level of physical abuse [234].

The National Crime Victim Survey surveyed intimate partner violence for the period covering 1993-1999 and reported that women account for 85% of the

victims from among the more than 790,000 victims of intimate violence in 1999, accounting for 671,110 violent victimizations. Women age 16-24 were the most vulnerable age group. The apparent good news is that intimate partner violence against all females decreased 41% during the period, but only in the age group 20-49. However, the sample did not capture homeless individuals, those living in homeless or battered women's shelters, or the experience of people who have left a household to escape violence. This is an important consideration because women separated from their husbands were victimized by an intimate at rates higher than married, divorced, widowed, or never married women, and divorced women were victimized as the second highest rate among married categories. Intimate partners murdered 1,218 women during 1999, accounting for 32% of all murdered females. Women age 35-49 were the most vulnerable to intimate murder. There were 91,470 rapes. Of the 1,642 persons murdered by an intimate in 1999, 26% were men. Black and white females experienced intimate partner violence at similar magnitudes for all age categories except one. Among females age 20-24, black women incurred intimate partner violence at significantly higher rates than white women. The rates of intimate partner violence for non-Hispanic women age 20-24 and 25-34 were significantly greater than those of Hispanic women of comparable ages [235].

A large study was designed to determine the prevalence of domestic violence among female patients and to identify clinical characteristics that are associated with current domestic violence by looking at 1,952 female patients of varied age and marital, educational, and economic status who were seen in a primary care setting from February to July 1993. Of the entire sample, 108 of the 1,952 respondents (5.5%) had experienced domestic violence in the year before presentation. Four hundred eighteen (21.4%) had experienced domestic violence sometime in their adult lives, 429 (22.0%) before age 18 years, and 639 (32.7%) as either an adult or child. Compared with women who had not recently experienced domestic violence, currently abused patients were more likely to be younger than 35 years of age, were more likely to be single, separated, or divorced, were more likely to be receiving medical assistance or to have no insurance, had more physical symptoms, had higher scores on instruments for depression, anxiety, somatization, and interpersonal sensitivity (low self-esteem), were more likely to have a partner abusing drugs or alcohol, were more likely to be abusing drugs or alcohol, and were more likely to have attempted suicide. They visited the emergency department more frequently but did not have more hospitalizations for psychiatric disorders. The authors conclude that in a large, diverse, community-based population of primary care patients, 1 of every 20 women had experienced domestic violence in the previous year; 1 of every 5 had experienced violence in her adult life; and 1 of every 3 had experienced violence as either a child or an adult [236].

Another study examined the relationship between childhood abuse and partner abuse among a sample of predominantly African-American and Hispanic women, who were patients in methadone clinics in Harlem and the South Bronx. A structured questionnaire addressing demographics, psychosocial and physical health characteristics, depression, childhood abuse, and domestic violence was administered to 151 women. Over half of the women (60%, n = 98) reported lifetime physical, life-threatening, or sexual abuse by a spouse or boyfriend. Women who reported childhood physical abuse were almost nine times more likely to report having been abused by a spouse or boyfriend. Women who reported childhood sexual abuse were almost four times more likely to report having been abused by a spouse or boyfriend. Depression and a need for social support were significantly associated with partner abuse, while current heroin use was inversely associated with partner abuse [237].

The danger to women continues to be a menace during and even after, divorce. A recent survey of divorced, Philadelphia-area women found that 70% were abused by their spouses. Nineteen percent cited the violence as their primary reason for leaving the marriage in the first place. Fifty-four percent had suffered several incidents of violence and sustained injury from their ex-husbands. Even after separation, nearly one-half of the women experienced violence from their estranged husbands. Not surprisingly, 30% feared further violence during child support negotiations, and, of this subset, 66% did not receive regular child support payments [238].

Women with histories of partner violence are often reluctant to disclose what is happening to them at home. Investigators wanted to look at the differences in maternal health and child behavior between women who filed for a restraining order and those who did not in a sample of 160 women and child pairs living in high-crime neighborhoods. Sixty-four (40%) of 160 mothers reported a history of filing a restraining order against a current boyfriend or husband (39%), ex-boyfriend or husband (44%), someone known (8%), or other (9%) Mothers in the restraining order group experienced higher current partner verbal aggression and physical violence to mother, poorer health, and higher PTSD-related symptoms, compared with mothers in the non-restraining order group. [239].

Sometimes women are the perpetrators of domestic violence. In a study of an urban emergency department, the prevalence of domestic violence committed by women against male patients was assessed. Of 866 male patients interviewed, 109 (12.6%) had been the victims of domestic violence committed by a female intimate partner within the preceding year. Victims were more likely to be younger, single, African American, and uninsured. The most common forms of assault were slapping, grabbing, and shoving (60.6% of victims), followed by choking, kicking, biting, and punching (48.6%), or throwing an object at the victim (46.8%). Thirty-seven percent of cases involved a weapon. Seven percent

of victims described being forced to have sex. Only 19% of victims contacted the police; 14% required medical attention; 11% pressed charges or sought a restraining order; and 6% pursued follow-up counseling. Almost 13% of men in this sample population had been victims of domestic violence committed by a female intimate partner within the previous year [240].

Many victims of family violence also suffer from mental illness. In a study of 941 young adults, half of those involved in partner violence had a psychiatric disorder and one-third of those with a psychiatric disorder were involved in partner violence. Individuals involved in severe partner violence had elevated rates of a wide spectrum of disorders [241].

Preventing partner violence begins with identifying those who are already being victimized. Screening tools have been designed to assist social service and health care workers. One study looked at a brief, three-question screening tool and applied it to a cohort of adult women participating in the Colorado Behavioral Risk Factor Surveillance System (BRFSS). The three questions used were: 1) Thinking back over the past year, on any occasion were you hit, slapped, kicked, raped, or otherwise physically hurt by someone you know or knew intimately such as a spouse, partner, ex-spouse or ex-partner, boyfriend, girlfriend, or date?; 2) Considering your current partners or friends, or any past partners or friends, is there anyone who is making you feel unsafe now?; 3) In the past year, have the police ever been called to your home because of a fight or argument, no matter who was fighting or who was at fault?. A "yes" response to one or more of the three items constituted a "positive" screen. Among BRFSS respondents, 8.4% had an initial positive screen. During the follow-up period, women who screened positive were 46.5 times more likely to experience severe physical violence, 11.2 times more likely to experience physical violence; 3.6 times more likely to experience verbal aggression, and 2.5 times more likely to experience sexual coercion. Separation from one's spouse and a positive screen were significant independent predictors of physical violence [242].

In the Philadelphia Court of Common Pleas, 58% - amounting to 13,088 cases - in 1999 were for domestic violence [243]. According to statistics compiled by Women Against Abuse in Philadelphia, at least 45,000 women are battered in Philadelphia each year [12].

Sexual Assault

Twenty-two percent of women polled say they have been forced to do sexual things against their will, usually by an intimate [244]. One out of every eight adult women or at least 12.1 million American women will be the victim of forcible rape sometime in her lifetime [68]. In 1990, 683,000 American women were forcibly raped which equals 56,916 per month; 1,871 per day; 78 per hour;

and 1.3 per minute, and of these, only 16 percent were reported to the police [68].

Among adult women an estimated 32,101 pregnancies result from rape each year. Only 11.7 percent of these victims received immediate medical attention after the assault, and 47.1 percent received no medical attention related to the rape [245]. Approximately 34 percent of rapes are estimated to occur in the victim's home where children are likely to be present to see or hear the sexual assault of their mothers or caretakers [246]. Most violence directed against women is perpetrated by intimates. Almost seven in ten rape/sexual assault victims stated the offender was an intimate, other relative, a friend or an acquaintance [247].

Sexual assault is strongly associated with suicidality and other emotional problems. In one study, sexual assault history was associated with increased prevalence of lifetime suicide attempt after controlling for sex, age, education, post-traumatic stress symptoms, and psychiatric disorder. For women, the odds of attempting suicide was 3 to 4 times greater when the first reported sexual assault occurred prior to age 16 years compared with age 16 years or older [248].

Some studies have looked specifically at the incidence and experience of rape among chemically dependent women. In one study, sixty women in a residential treatment facility were interviewed about sexual trauma they had experienced in their lives. In this sample 73% had been raped, and 45% had been raped more than once. The stories of rape were classified in five categories: rape while in the context of using, when too high to resist, while prostituting, by a significant other, and by a family member. Some 35% of the rapists were described as friends of the women with whom they were using drugs. Only 20% of the rapes were reported to the police [249]. Another prospective study examined the epidemiology of physical attack and rape among a sample of 171 not in treatment, crack-cocaine using women. Since initiating crack use, 62% of the women reported suffering a physical attack. The annual rate of victimization by physical attack was 45%. Overall, more than half of the victims sought medical care subsequent to an attack. The prevalence of rape since crack use was initiated was 32%, and the annual rate was 11%. Among those women having been raped since they initiated crack use, 83% reported they were high on crack when the crime occurred as were an estimated 57% of the perpetrators. Predictors of having experienced a physical attack included: duration of crack use, arrest for prostitution, and some college education. Duration of crack use and a history of prostitution were predictors of suffering a rape [250]

Criminal Victimization

Women tend to be victimized by intimate offenders far more often than men, who are more typically victimized by people other than their intimate partners. In at least 29% of the violent crimes against women, the lone offenders are intimate partners. Friends or acquaintances commit over half of the rapes and sexual assaults, while another 26% occurs at the hands of other intimates. Strangers were responsible for only one in five rapes. Of all violent attacks against female victims 12 years and older by multiple offenders most also involved offenders they knew. During 1992 approximately 28% of female homicide victims were known to have been killed by an intimate. Strangers used weapons 30% of the time compared to 18% for intimates, but women are injured by intimates in 52% of the attacks, compared to 20% of the attacks by strangers. The rate of intimate offender attacks on women separated from their husbands was about three times higher than that of divorced women and about 25 times higher than that of married women. Women of all races were about equally vulnerable to attacks by intimates, but families with incomes below \$10,000 were more likely than other women to be violently attacked by an intimate partner [251].

In the U.S., the National Victim Center has been looking closely at the impact of crime on the victims. In one study of a sample of 391 women, 75% had been victimized by crime but only 41.4% of the crimes had been reported to the police, including only 7.1% of the sexual assault. Of the victims, 27.8% had developed PTSD [252]. In a broad survey of criminal victimization in the general population, other researchers looked at 105 violent crime victims, 227 property crime victims, and 190 non-victims to evaluate levels of psychological distress following criminal victimization. At three, nine, and fifteen months after the crime, symptoms of depression, somatization, hostility, anxiety, phobic anxiety, fear of crime, and avoidance were measured. Although crime victims showed substantial improvement between 3 and 9 months, thereafter they did not. As might be expected, violent crime victims remained more distressed than did property crime victims who were more distressed than people who had not been victimized [253].

Up to 1 in 20 women will be stalked during her lifetime. The majority of victims are female, while the offenders are usually males who have been intimate partners. Stalking behaviors range from surveillance to threatening aggressive or violent acts. Victims may experience anxiety, depression, guilt, helplessness, and symptoms of post-traumatic stress disorder [254]. One study looked at 35 battered women who were classified as being "relentlessly stalked" and compared them to 31 battered women who were "infrequently stalked". Compared to infrequently stalked battered women, relentlessly stalked battered women reported: (a) more severe concurrent physical violence, sexual assault

and emotional abuse: (b) increased post-separation assault and stalking; (c) increased rates of depression and PTSD; and (d) more extensive use of strategic responses to abuse [255].

From 1973 to 1994 the violent victimization rates of women and men in the U. S. converged. Twenty years ago women's likelihood of victimization was less than half that of men. In 1994 women were about two-thirds as likely as men to be victims of violence. Of the 10.9 million crimes of violence in 1994, 4.7 million were against women. Low-income women are more likely to be victimized, and if it is an intimate, they are 4 times as likely to suffer violence at his hands. In 78% of cases the perpetrator is known to the woman, in 29% he is an intimate, and in only 23% if the cases is he a stranger (Craven, 1997).

Given the exposure to violence that many inner city people experience, investigators wanted to find out how many of the people accessing an inner-city clinic for sexually transmitted diseases own weapons, carried them, and had recent experiences with violence. Face-to-face interviews were administered to 245 clients and they found that overall, 43.7% reported experience of carrying a weapon at some point in their lives. More men chose to carry guns; more women chose to carry knives or mace. Participants reported experiencing alarming levels of violence in the previous year: 30.5% experienced beatings, 23.9% reported being threatened with a gun, and 18.9% reported forced, unwanted sex. Persons with a history of carrying weapons were significantly more likely to report being both victims and perpetrators of violence. Persons who experienced violence in the previous month were significantly more likely to be diagnosed with an STD [256].

Exposure to Violence and Mental Illness

The mentally ill frequently have a past history of victimization as children and/or as adults. One study looked at 331 involuntary psychiatric patients. The rate of nonviolent criminal victimization (22.4 percent) was similar to that in the general population (21.1 percent), but the rate of violent criminal victimization was two and a half times greater than in the general population: 8.2 percent versus 3.1 percent. Substance use and transient living conditions were strong predictors of criminal victimization [257]. In a sample of 54 adult black psychiatric outpatients, previously identified as victims of sexual or physical assault, patients were questioned about the nature of the assaults, their relationship to the perpetrator(s), the number of assaults suffered in each relationship, and whether the assault(s) occurred before or after the onset of their mental illness. Eighty percent of the sample had experienced major physical assault as an adult and 59% had experienced major physical assault as a child; 37% and 31%, respectively, reported major sexual assault as a child and as an adult. Women were more likely than men to report physical and sexual assault as

an adult and sexual assault as a child. Childhood assault most often occurred before the onset of the patient's mental illness; whereas, adult sexual assault for women and physical and sexual assault for men was as likely to occur after the onset of the psychiatric disorder, suggesting an increased vulnerability to victimization for the adult mentally ill [258].

In a series of large studies, researchers first established that exploring the temporal consistency of reports of childhood sexual abuse, adult sexual abuse, and adult physical abuse, as well as current symptoms of post-traumatic stress disorder among 50 people with serious mental illness could yield reliable information essential to further research in this area [259]. Then they reviewed a number of studies on physical and sexual assault against women with serious mental illness reporting that across studies, between 51% and 97% of participants experienced lifetime physical or sexual assault and a significant proportion of these had experienced multiple acts of victimization [260].

In a recent large study that is part of a larger investigation of risky behavior and sexually transmitted diseases in men and women with serious mental illness, roughly one third of women reported having been the victim of either sexual or physical assault or both in the past year, and 80% reported having been assaulted since the age of 16. The majority of the sample also reported a history of childhood abuse with approximately two-thirds of the women reporting being assaulted prior to age 16. Revictimization appears, in fact, to be the norm for this population of women – 87% reported having been either physically or sexually assaulted during their lifetime. Recent assault was associated with alcohol use disorder, drug use disorder, younger age, having never been married, recent homelessness, childhood physical and/or sexual abuse. However, neither race, nor poverty, nor employment status was associated with recent assault [261].

People suffering from chronic post-traumatic stress disorder (PTSD), a serious and debilitating condition frequently associated with exposure to violence, are two to four times more likely than those without PTSD to have virtually any other psychiatric disorder [217], and are almost eight times as likely to have three or more disorders – 88% of men and 79% of women with PTSD have a history of at least one other disorder. Women with PTSD are four to five times more likely to also suffer from an affective disorder than those without PTSD and two to four times more likely to have another anxiety disorder [218].

One group of authors has proposed a model to explain the relationship between PTSD and serious mental illness. They propose that PTSD mediates the negative effects of trauma on the course of serious mental illness by influencing both the PTSD and other psychiatric disorders directly through the effects of specific PTSD symptoms including avoidance, hyperarousal, and re-experiencing the trauma, and indirectly, through the effects of common correlates of PTSD

such as retraumatization, substance abuse, and difficulties with interpersonal relationships [262].

PTSD & Family Violence

The rate of post-traumatic stress disorder is very high in populations of battered women, in various studies ranging from 33%-84% [263]. One group of researchers looked at battered women attending a domestic violence clinic and found that the overall rate of PTSD was 45%, while 60% of those women with high exposure to life threat had PTSD [264]. In another study of battered women from a shelter, 84% had PTSD [265]. Researchers studied the prevalence of PTSD in women participating in domestic violence programs and compared them to women who were not participants and found that the participants had a 60% rate compared to the non-participants who had a 62% rate [266]. In a primary care setting, 39% of the patients referred for mental health consultation met criteria for PTSD and the most frequent traumas associated with the PTSD were domestic violence and childhood abuse [267].

One group of researchers wanted to explore the relationship between symptoms of PTSD and severity of abuse, so they interviewed an ethnically stratified group of 131 abused women in a primary care setting. Symptoms of PTSD, both intrusion (i.e., trouble falling asleep, strong waves of feelings about the abuse) and avoidance (i.e., trying not to think or talk about the abuse, staying away from reminders of the abuse), were significantly correlated to severity of abuse, regardless of ethnicity. When asked about childhood physical or sexual abuse, women reporting physical abuse had significantly higher intrusion scores, whereas those reporting sexual abuse had significantly higher avoidance scores. Sixty-five percent of the women reported dreams, flashbacks, or terror attacks and had significantly higher mean results on both intrusion and avoidance [268].

PTSD And Sexual Assault

The prevalence of PTSD after rape is very high. In a review of nine studies that investigated the prevalence of PTSD among victims of rape or other sexual violence, four studies showed the rate as great than 70% [269]. In a survey of over 2000 women asked about victimization experiences, rates of "nervous breakdowns," suicidal ideation, and suicide attempts were significantly higher for crime victims than for non-victims. Victims of attempted rape, completed rape, and attempted sexual molestation had problems more frequently than did victims of attempted robbery, completed robbery, aggravated assault, or completed molestation. Nearly one rape victim in five (19.2 percent) had attempted suicide, whereas only 2.2 percent of non-victims had done so. Most sexual assault victims' mental health problems came after their victimization [270].

The National Women's Study produced dramatic evidence of the mental health impact of rape by determining comparative rates of several mental health problems among rape victims and women who had never been victims of rape. Almost one-third of all rape victims developed PTSD sometime during their lifetimes and more than one in ten rape victims still had PTSD at the time of assessment. Rape victims were 6.2 times more likely to develop PTSD than women who had never been victims of crime. Additionally, investigators found that 30 percent of rape victims had experienced at least one major depressive episode in their lifetimes and 11 percent of all rape victims were experiencing a major depressive episode at the time of assessment. In contrast, only 10 percent of women never victimized by violent crime had ever had a major depressive episode and only 6 percent had a major depressive episode when assessed. Thus, rape victims were three times more likely than non-victims of crime to have ever had a major depressive episode and were 3.5 times more likely to be currently experiencing a major depressive episode. Rape victims were 4.1 times more likely than non-crime victims to have contemplated suicide and 13 times more likely than non-crime victims to have actually made a suicide attempt. The fact that 13 percent of all rape victims had actually attempted suicide confirms the devastating and potentially life-threatening mental health impact of rape [68].

In a survey of over 2000 women asked about victimization experiences, rates of "nervous breakdowns," suicidal ideation, and suicide attempts were significantly higher for crime victims than for non-victims [218]. Victims of attempted rape, completed rape, and attempted sexual molestation had problems more frequently than did victims of attempted robbery, completed robbery, aggravated assault, or completed molestation. Nearly one rape victim in five (19.2 percent) had attempted suicide, whereas only 2.2 percent of non-victims had done so. Most sexual assault victims' mental health problems came after their victimization [270].

There is a disturbingly high rate of comorbidity with PTSD, further complicating recovery for many survivors of sexual assault. Even in the most conservative study, those with PTSD were two to four times more likely than those without PTSD to have virtually any other psychiatric disorder, particularly somatization disorder [217].

In another study, people with one or more symptoms of PTSD were more likely than those without any mental disorder to experience poor social support, marital difficulties, and occupational problems, as well as more impairment on income and disability measures than even those with major depressive disorder. The people with PTSD symptoms were also more likely to have a number of chronic illnesses, consistent with many other studies of specific trauma groups. Although these patients had a disproportionate utilization of the health care

system, they were reluctant to seek mental health treatment, a finding that has been seen in many other studies as well [217].

With early intervention, it may be possible to prevent PTSD from developing. In one study investigators compared the efficacy of a brief prevention program (BP) aimed at arresting the development of chronic PTSD in 10 recent female victims of sexual and nonsexual assault was compared to a matched trial of 10 control victims. The experimental group received 4 sessions of a cognitive-behavioral program shortly after the assault. The behavioral program consisted of education about common reactions to assault and cognitive-behavioral procedures. Two months post-assault, victims who received the behavioral program had significantly less severe PTSD symptoms than victims in the control condition; 10% of the former group met criteria for PTSD versus 70% of the latter group. Five and a half months post-assault, victims in the behavioral program group were significantly less depressed than victims in the control group and had significantly less severe reexperiencing symptoms [271].

Women who are sexually abused as children can develop extreme and prolonged anxiety with flashbacks – PTSD. One NIMH-funded study demonstrated that these women have abnormal blood flow to the hippocampus, the brain region associated with memory and learning, processing of emotions, and visual imagery. Animal studies have shown that stress can damage brain cells in the hippocampus [272].

Risk Factors for PTSD

Not everyone who is traumatized gets PTSD. Therefore, it is important to understand the factors that put an individual at risk for the development of post-traumatic stress disorder. Some research has demonstrated that the severity of the trauma, the absence of social support, and additional life stresses are all risk factors [273]. Among a group of sexual assault victims, less education, greater perceived life threat, and receipt of more negative social reactions upon disclosing assault were each related to greater PTSD symptom severity [274]. The National Women's Study employed a national probability sample of 3,006 adult women in order to (a) identify separate risk factors for rape and physical assault, (b) identify separate risk factors associated with post-rape post-traumatic stress disorder (PTSD) and post-physical assault PTSD. The authors concluded that risk factors for rape included: past victimization, young age, and a diagnosis of active PTSD. Increased risk factors for physical assault included: past victimization, minority ethnic status, active depression, and substance abuse. Risk factors for developing PTSD following rape included: a history of depression, alcohol abuse, experiencing injury during the rape. The risk factors

for the development of PTSD following a physical assault included: a history of depression and lower education [275].

Ironically, given the toll that substance abuse takes on the individual and society, at the time of the traumatic event, substance abuse may serve as a protective factor. In a study of 127 people trapped in a ballroom fire, researchers studied the risk factors and preventive factors for the development of PTSD. In their study, female gender, the number of previous trauma, a past history of simple phobia, threatened death, trauma exposure, and hospitalization for trauma-induced injuries and the presence of burns increased the odds of PTSD, whereas a sense of control during the trauma, and alcohol consumption and intoxication decreased the odds of PTSD. Six factors made independent contributions to the prediction of PTSD, i.e. the number of previous trauma, a past history of simple phobia, loss of control increased the odds of developing PTSD while a sense of control, alcohol consumption and alcohol intoxication decreased the odds of developing PTSD [276].

In determining the risk factors for PTSD, a picture begins to emerge describing the complexity of the interaction between overwhelming stress and many other factors. Overall, the risk factors for PTSD can be divided into seven different categories: environmental, demographic, prior psychiatric history, dissociation, cognitive risk factors, biological risk factors, and familial risk factors. The environmental risk will be determined by: the characteristics of the stressor event, the dose-response relationship, the history of prior exposure to trauma or chronic stress, particularly in childhood, prior assault, a history of family instability, and poor social support. The demographic risk factors include: female gender (prevalence in women twice that of men) with a particular vulnerability to assaultive violence, lower educational levels, lower income levels, being divorced or widowed, being of an ethnic minority. The authors remind us that several of the demographic factors increase the risk of trauma exposure so that they may be less a predictor of PTSD than of trauma exposure. Dissociation at the time of the traumatic event is the best predictor of PTSD six months after the trauma and it may be dissociation that mediates the relationship between prior trauma and subsequent vulnerability to PTSD. Cognitive factors include lower intellectual function even when controlled for degree of exposure, preexisting impairments in neurodevelopment, and impairments in explicit memory that may predate the focal trauma. Biological risk factors include heart rate increases at the time of the traumatic event which may help to enhance or prolong the catecholamine response so typical of trauma, elevated norepinephrine that may result in overconsolidation of memory and intrusive symptoms, lowered cortisol as a result of prior exposure to rape or assault, chronically low levels of cortisol, and systematic alterations in the overall HPA axis. Familial or genetic risk factors may exist: twin pair studies demonstrate that 30% of PTSD may have a genetic basis

and trauma survivors with PTSD are more likely to have family members with mood, anxiety, and substance abuse disorders [277].

V. Exposure to Violence, Mental Disorder, and Substance Abuse

Mental Illness in Women

Mental disorders as a whole affect women and men almost equally, but certain disorders, such as major depression, dysthymia, and post-traumatic stress disorder affect women more than men. An estimated 12% of women in the United States will experience a depressive disorder during a one-year period. Anxiety disorders affect approximately 2-3 times as many women as men. Up to 2% of adolescent girls and young women are affected by eating disorders. Depression occurs frequently in women during pregnancy and immediately following childbirth and in addition to the risks associated with depression for the woman, postpartum depression increases the risk of dissatisfaction with their partner relationship and bonding problems with their children [278].

Based upon a national survey, researchers have determined that 19% of welfare recipients meet diagnostic criteria for a disabling psychiatric disorder. About the same percentage reported using illicit drugs. Because of the new work requirements and the time-limited nature of assistance, policy makers often must decide what to do when welfare recipients fail to successfully transition from welfare to work. But these data indicate that mental and behavioral health problems could be significant barriers to self-sufficiency for many of these women [279]

Substance Abuse and Mental Illness

There is a high degree of comorbidity between substance abuse, exposure to trauma, depression, self-harming behavior, suicidality, personality disorders, and ADHD. In one study, the risk for heavy drinking in women with a history of depressive disorder was 2.6 times greater than the risk in women with no history of depressive disorder. A higher frequency of depression also found to be associated with elevation in risk for heavy alcohol use [280]. Suicidality and substance abuse have long been connected. In a population of African American women, suicide attempts were correctly predicted 77% of the time: by high levels of psychological distress, hopelessness, drug use, and relationship discord [281]. Another study looked at the risk factors for suicide attempts among 80 women with a history of alcohol problems who were recruited from a large, inner-city hospital. Only three factors remained significant in the multivariate analysis: hopelessness, recent interpersonal loss, and childhood trauma [282]. In a study of 298 alcoholic subjects, 19% had attempted suicide. Suicide attempters were significantly more likely to: be female, have a lower socioeconomic status,

be younger, have heavy drinking onset of alcohol-related problems at an earlier age, consume a greater amount of alcohol when drinking, have additional lifetime psychiatric diagnoses of major depression, antisocial personality disorder, substance abuse, panic disorder, phobic disorder, or generalized anxiety disorder. Additionally, significantly more attempters had first- or second-degree relatives who abused alcohol [283]. In another study of non-fatal suicidal behavior in 100 men and 100 women, significantly more married women than men cited as precipitants of their self- destructive behaviors: spousal extramarital affairs, spousal alcohol abuse and marital violence [284].

A new study of young women during the 5-year transition from high school to early adulthood found that a substantial proportion experienced one or more episodes of major depressive disorder during the study period. The risk that depression would recur was substantial for all the women, particularly those whose illness began relatively early – prior to their senior year in high school. Women who had experienced psychiatric disorders other than depression also were more likely to have depressive episodes during the post-high school period. Substance abuse disorders affected 9.5% of the women during the 5-year period. Major depressive disorder and substance abuse disorders co-occurred frequently during the adolescent and early adult years [285, 286].

Self-mutilation and other self-harming behaviors are also frequently seen in people who are substance abusers. Self-harm and addiction are seen as two separate but interacting problems: taking a drink or drug can help people work up to self harm by decreasing inhibitions; substances may be used as excuse for self-harming behavior because they are seen as being more socially acceptable; using can bring strong emotions to surface and then may the person may self injure to deal with feelings; using can help people forget when and how they hurt themselves. Some people switch back and forth between using and self-harming – when not doing one, doing the other [287]. In a study of 660 consecutive psychiatric admissions; 32 people were admitted for self-mutilation and 88 patients for unsuccessful suicide attempts. The self-mutilators were less likely to be diagnosed with major depression or adjustment disorder and more likely to have a history of substance abuse and receive Axis II diagnoses. Reports of lifetime sexual or physical abuse were more common among mutilators and they also had frequent histories of suicide attempts distinct from their mutilation behavior, multiple hospitalizations, and transfer to state hospitals for longer-term care [288].

There is also a strong connection between substance abuse and anxiety. Three prominent perspectives are that anxiety disorder promotes pathological alcohol use, that pathological alcohol use promotes anxiety disorder and that a third factor promotes both conditions [289]. In a study of college students, the odds of having either an anxiety disorder or an alcohol use disorder were two- to fivefold greater when the other condition was present. Alcohol use disorders

(especially alcohol dependence) and anxiety disorders demonstrate a reciprocal causal relationship over time, with anxiety disorders leading to alcohol dependence and vice versa [290]. In another study, patients with panic disorder were given either moderate alcohol or non-alcohol placebo and then panic was induced. The findings suggest that alcohol acts acutely to reduce both panic and the anxiety surrounding panic, and this lends support to the view that drinking behavior among those with panic disorder is reinforced by this effect. This process may contribute to the high rate at which alcohol-use disorders co-occur with panic disorder [291].

In the Hispanic community "ataque de nervios" is a folk diagnosis that describes episodic, dramatic outbursts of negative emotion in response to a stressor, sometimes involving destructive behavior. Dissociation and affective dysregulation during such episodes suggested a link to childhood trauma and researchers found that significantly more subjects with an anxiety or affective disorder plus ataque reported a history of physical abuse, sexual abuse, and/or or a substance-abusing caretaker than those with psychiatric disorder but no ataque [292].

Personality disorders have been strongly connected to both trauma and substance abuse disorders. In one recent study, physical abuse and physical neglect were related to a subcluster of "psychopathic" personality disorders consisting of childhood and adult antisocial personality traits and sadistic traits. Emotional abuse emerged as a broad risk factor for personality disorders in Clusters A, B, and C. Emotional neglect was related to the traits of schizoid personality disorder, which formed its own subcluster. Sexual abuse, which had been expected to predict borderline personality disorder traits, was unrelated to any personality disorder cluster [85]. According to one research review, close to 60% of subjects with substance use disorders had personality disorders. Borderline personality disorder was significantly associated with: current substance use disorders, excluding alcohol and cannabis, lifetime alcohol, stimulant, and other substance use disorders, excluding cannabis [293].

Borderline personality disorder, frequently associated with a history of child trauma, is associated with a high utilization of mental health services. In one study, investigators described the types and amounts of psychiatric treatment received by a well-defined sample of borderline personality disorder (BPD) inpatients, and compared these parameters with those of a group of carefully diagnosed personality-disordered controls. Then they assessed the risk factors associated with a history of intensive, high-cost treatment, which we defined as having had two or more prior psychiatric hospitalizations. The treatment histories of 290 borderline inpatients and 72 patients with other Axis II disorders (other personality disorders) as controls, were assessed using a reliable semistructured interview. All nine forms of treatment studied except electroconvulsive therapy (ECT) were common among borderline patients (36%

to 96%). In addition, a significantly higher percentage of borderline patients than axis II controls reported a history of individual and group therapy, day and residential treatment, psychiatric hospitalization, participating in self-help groups, and taking standing medications. They were also significantly younger when they first entered individual therapy and began to take medications. In addition, borderline patients spent more time than axis II controls in individual therapy and psychiatric hospitals, and were on standing medications for a significantly longer period of time. They also reported a significantly higher number of psychiatric hospitalizations, lifetime number of standing medications, and number of psychotropic medications taken at the same time. In addition, the researchers found a highly significant multivariate predictive model for multiple prior hospitalizations. The six significant predictors were age 26 or older, a history of quasi-psychotic thought, lifetime number of self-mutilative efforts and suicide attempts, a childhood history of reported sexual abuse, and an adult history of being physically and/or sexually assaulted [294].

Another study looked at the association between attention deficit hyperactivity disorder (ADHD) and psychoactive substance use disorders in adults with ADHD, attending to comorbidity with mood, anxiety, and antisocial disorders. There was a higher lifetime risk for psychoactive substance use disorders in the ADHD adults than in the comparison subjects (52% versus 27%). ADHD adults had significantly higher rates of drug and drug plus alcohol use disorders than the comparison subjects. ADHD significantly increased the risk for substance use disorders independently of psychiatric comorbidity [295].

Studies of psychiatric inpatients also connect substance abuse disorders. In one study, of 100 patients on an inpatient psychiatry unit, 64% admitted to substance abuse and 29% met DSM-III-R criteria for substance abuse in the 30 days prior to admission. Forty-three percent had positive urine drug screens, and of those with positive urine drug screens, 42% had denied drug use upon admission. Only 40% of patients with current or past substance abuse problems had received treatment for their chemical dependency [296]. In a study on a state hospital unit of women who remained chronically institutionalized and were actively psychotic despite psychopharmacologic and psychosocial treatment, 46% reported histories of childhood incest. They were more likely than the others to engage socially with ward staff, had a higher proportion of sexual delusions, affective symptoms, substance abuse, suspected organicity, and major mental problems, and spent more time in seclusion than other patients [297]. In another study of dual diagnosis in 160 frequently hospitalized adults with severe mental illness, 49% were diagnosed as having at least one current substance dependence disorder. Most were polysubstance dependent (55.1 percent), and almost half (44.9 percent) met criteria for cocaine dependence. Subjects who were substance dependent were significantly over-represented among those diagnosed with bipolar disorder, psychotic disorder not otherwise specified, and

major depression. The substance-dependent subjects were significantly more likely to have been arrested and jailed than nondependent subjects [298].

Another study evaluated the prevalence of Axis II disorders in substance abuse patients and the relationship between Axis II psychopathology and two other known predictors of adverse addiction treatment outcomes, i.e., Axis I psychiatric comorbidity and illegal drug use, specifically cocaine. For this study, 232 patients with cocaine and/or alcohol dependence were admitted to either inpatient or outpatient addiction recovery programs at Carrier Foundation, a nonprofit, private-pay hospital in New Jersey. Axis II disorders were more prevalent in cocaine than alcohol dependence and in patients with Axis I psychiatric comorbidity. When all three predictors were evaluated in one prediction model, the combination of Axis I and II psychopathology was the best predictor of a return to substance use at one year post-treatment, compared to the three factors alone. These findings highlighted the importance of the interrelationship of the relative prognostic value of three known predictors of addiction treatment [299].

Substance Abuse and Exposure to Violence

Substance-abusing women are likely to have been raised by parents who were substance abusers, particularly alcoholics. Although the intergenerational patterns of substance abuse may have some genetic basis, there is also ample evidence suggesting problematic relationships in families with a substance-abusing parent that raises concerns about intergenerational transmission of problematic parenting behavior. A high proportion of substance-abusing women have experienced early sexual abuse. Although most studies have not had adequate comparison groups of non-substance-abusing women, the fact remains that most studies suggest a third to a half of substance abusing women experienced some kind of sexual abuse during childhood. Substance-abusing women's lives remain complicated as adults. They are commonly involved with men who are also users of drugs, they are often the victims of domestic violence, and they suffer from a variety of psychiatric disorders. Studies of epidemiologic and treatment populations indicate that the majority of substance-abusing women have one or more types of comorbid mental disorders, with depression being the most common and the most elevated compared with substance-abusing men, but antisocial personality being extremely high compared with samples of non-substance-abusing women. These findings are of great concern given a growing body of research with non-substance-abusing women, suggesting that family violence and maternal psychopathology can have a profound effect on women's parenting and development [300]

People who abuse substances are known to have a high rate of exposure to violence both before they begin using substances and after. Family violence

and substance abuse share a number of behavioral features including loss of control, continuation of behavior despite adverse consequences, preoccupation or obsession, development of tolerance, and family involvement. Both disorders, especially in combination predispose the next generation to both domestic violence and addictive disorders. Sexual abuse and substance abuse also have common features and both predispose to disorders in the next generation [301]. According to one author, the insidious process of addiction in families creates: a conspiracy of silence and denial, coupled with unpredictable, unavoidable stress, trauma, and deprivation. The complex interplay of isolation, inhumane treatment, inconsistency, and indoctrination in these families results in a process similar to brainwashing in which members gradually relinquish their own identity and develop robotlike patterns of adaptive behaviors. Interactive relationships are replaced with survival role performances, which allow the individual to participate in the family while avoiding and hiding the painful reality of what is happening. Adaptive survival behaviors continue to operate even after the individual leaves home and the survival maneuvers of an innocent child become the automatic behaviors of a dysfunctional adult [302].

In a study of 375 women at an inner-city clinic patients were asked about intimate violence. Of the women, 37.6% reported ever having experienced physical assault by an intimate, 32.8% reported verbal threats of violence, and 15.5% women reported at least one episode of physical abuse in the year preceding participation. Physical violence was associated with drug use, STD history, and a history of a serious medical condition [303]. In another study of 105 substance abusers assessed for family violence, 37% had family history of physical violence, 22% were adult victims of physical violence. 14% were victims of childhood abuse, 18% were perpetrators of physical violence. The substance abuse + family violence group had significantly more self-reported and positive urine screens for cocaine use within the 2-month monitoring period, more individual therapy sessions attended, and significantly higher scores on the Michigan Alcoholism Screening Test and the Beck Depression Inventory scores. [304].

Women who are substance users are more likely to be victims of domestic violence than non-substance users and pregnant women are at increased risk for forced sex. The most common perpetrators of domestic violence are boyfriends or ex-boyfriends. Researchers compared a non-substance group of pregnant women with a substance-abuse group. In the non-substance-use group: 7% of the obstetric patients and 5% of the gynecologic women were abused during the preceding year. Also, 1% of the obstetric patients were abused while pregnant, and 3% were forced to have sex within the past year. In the substance-use group: 15% of the obstetric patients were abused during the past year, 7% were abused while pregnant, and 15% were forced to have sex within the past year [305].

Sexual trauma is also a risk in the lives of substance-abusing women. Sixty women in a residential treatment facility for chemical dependence were interviewed about sexual trauma they had experienced in their lives. Of the women interviewed, 73% had been raped, and 45% had been raped more than once [249]. Childhood sexual abuse (CSA) is also a common problem in this population. In one study, CSA was reported by 13.5% of women and 2.5% of men. There was a significant association between CSA and subsequent onset of mood, anxiety, and substance use disorders among 14 of the women. Among women, rape (vs. molestation), knowing the perpetrator (vs. strangers), and chronicity of CSA (vs. isolated incidents) were associated with higher odds of some disorders [306].

The signs of substance abuse and sexual victimization sometimes overlap. Typical signs of sexual victimization in this population include: vague memories, or no memories of significant periods of time, vague memories of having been abused, promiscuous sexual relationships, avoidance of sexual relationships, unexplained or multiple gynecological problems, significant changes over a short time in school or in conduct, early use of alcohol or drugs, binge-eating in childhood or early adolescence, attempts to be physically unattractive, sudden weight gain or loss, deterioration in personal grooming, dissociative experiences, abrupt personality changes, recurring nightmares with themes of victimization, inexplicable depression, anxiety and fear, sudden changes in social, occupational, or academic functioning, running away, depression, anxiety, irritability [307].

Women who abuse alcohol and/or drugs are more likely to be victims of domestic violence and victims of domestic violence are more likely to receive prescriptions for and become dependent upon tranquilizers, sedatives, stimulants, and painkillers and are more likely to abuse alcohol [308]. In a study of 91 adults seeking treatment for cocaine dependence, 86% of the participants reported having been physically assaulted at least once during their lifetime; 61% reported having been attacked with a weapon during their lifetime; 56% reported having been attacked without a weapon but with the intent to kill or seriously injure them. Slightly less than half of these individuals reported physical assault by an intimate partner. Close to half also met criteria for PTSD at some point in their lives. Women were more likely than men to be physically assaulted by an intimate partner and to report PTSD and those who had been physically assaulted by intimate partners were over four times as likely to meet criteria for current PTSD and over two times more likely to meet criteria for lifetime PTSD [309].

Substance Abuse and Dissociation

There is also a strong overlap between substance abuse symptoms and those of dissociation [310]. In the general population, 6.3% of the people suffer

from three or more frequently occurring dissociative symptoms. Among these individuals, the rate of childhood sexual abuse was two and one-half times as high, the rate of physical abuse was five times as high, and the rate of current psychiatric disorder was four times as high as the respective rates for the other subjects [311]. Substance abuse may be one method to dissociate from painful emotions. A dissociative disorder may present as an atypical pattern of substance abuse with the presence of intense emotional pain out of proportion to current life circumstances and not attributable to a mood disorder. The intense denial, that is actually amnesia, characteristic of dissociative disorders may alienate other patients in substance abuse programs [312]. Most researchers working in the field of dissociative disorders recognize substance abuse as a significant problem for this population and that alcohol and drug addiction are common accompaniments of the disorders. In many cases, particularly of dissociative identity disorder (DID), drug abuse is severe and begins at an early age [313, 314].

The purpose of one study was to identify dissociative experiences and disorders among women who are survivors of sexual abuse. Fifty-one women from two different centers who identified themselves as abuse survivors participated in the research interviews. The Dissociative Experiences Scale (DES) and the Dissociative Disorders Interview Schedule (DDIS) were used to collect data. The results indicated that 88.2% of the 51 women had a dissociative disorder of some type. Twenty-eight (54.9%) of the women had a DDIS diagnosis of multiple personality disorder (MPD). The women had high DES scores, a high number of secondary features of MPD, high rates of depression, borderline personality, substance abuse, somatic symptoms, Schneiderian symptoms, ESP/supernatural experiences, suicide attempts, and conversion symptoms [315].

Whether one looks at a population of substance abusers or of psychiatric patients, the connection remains between trauma, dissociation, and substance abuse. A study was designed to determine 1) the prevalence of dissociative disorders in psychiatric inpatients, 2) the degree of reported childhood trauma in patients with dissociative disorders, and 3) the degree to which dissociative experiences are recognized in psychiatric patients. A total of 110 patients consecutively admitted to a state psychiatric hospital were given the Dissociative Experiences Scale. Fifteen percent of the psychiatric patients scored above 25 on the Dissociative Experiences Scale; 100% of these patients met DSM-III criteria for a dissociative disorder. These patients had significantly higher rates of major depression, PTSD, substance abuse, and borderline personality than did the comparison patients, and they also reported significantly higher rates of childhood trauma [316].

In another study of 180 women in and outside drug and alcohol treatment, results showed that CSA survivors had higher overall levels of

psychological distress, compared with drug and alcohol treatment clients who had not experienced CSA. They reported elevated levels of anxiety, somatization and dissociation but not depression. Higher rates of self-harm, eating disorders and sexual dysfunction were also reported by CSA survivors. Women with a history of both CSA and substance abuse were more likely to have attempted suicide than other women [317].

Another group of researchers studied 85 substance abusing or dependent inpatients and found that those with distressing traumatic events reported more self-mutilation, higher levels of dissociation, and a greater degree of impulse control problems than did patients without such histories. Of the 85 subjects, 74% reported the occurrence of at least one traumatic event in their lives and 76% of these rated the event as having affected them very much or extremely during the past year. The 48 subjects classified with a distressing traumatic event had significantly higher DES scores, more impulse control problems and more self-mutilation [318].

This is a pilot study of substance abuse in the family of origin and its relation to offspring dissociation and offspring codependency. One author contends that substance abuse in the family of origin exposes offspring to trauma, that exposure to trauma in the family of origin engenders offspring dissociation, and that dissociation is the process underlying offspring codependency. Assuming that substance abuse in the family of origin exposes offspring to trauma, this experiment tested the hypothesis that dissociation mediates the relationship between substance abuse in the family of origin and offspring codependency. Although it was found that substance abuse in the family of origin, offspring dissociation, and offspring codependency were associated, no support was found for the prediction that dissociation mediates the relationship between substance abuse in the family of origin and offspring codependency. [319].

As her doctoral dissertation, an investigator wanted to explore the long-term effects of parental substance abuse and a history of childhood abuse in a population of 90 adult children of substance abusers (ACOSAs). Voluntary subjects were recruited through advertisements, self-help groups or were referred by therapists. It was hypothesized that ACOSAs who experienced childhood abuse would be at greater risk for developing symptoms of PTSD, dissociation, and substance abuse, and the more severe the abuse the higher the level of symptomatology. In the study, 79% believed they were emotionally abused, 43% believed they were physically abused, 41% believed they were sexually abused, and 51% believed they were neglected. In addition, 62% reported a substance abuse history, 24% reported a drug abuse history, 28% met the diagnostic criteria for PTSD in the past and 21% currently met this criteria. The results indicated that neglect, physical abuse and sexual abuse were significantly related to PTSD, and sexual abuse was correlated with dissociative

symptoms. Relationships were also discovered between a history of neglect or physical abuse and subsequent drug or alcohol abuse, and between PTSD and alcohol or drug abuse. Furthermore, the greater the number of incidents of childhood abuse the more likely were symptoms of PTSD and dissociation, and the combination of both extra and intra-familial abuse was significantly associated with PTSD. The study's findings underscore the importance of assessing for symptoms of PTSD and dissociation in clinical populations of ACOSAs where there are extensive histories of childhood trauma, even if clients are highly functioning, as these symptoms appear to endure for long periods of time and may contribute to substance abuse problems, relapse, and revictimization [320].

Dissociation and substance abuse can mimic each other. Typical for both are: blackouts/time loss, fugues, fragmentary recall of events, fragmentary recall of entire life history, erratic relationships, different networks, fluctuations in skills, habits and knowledge, variable personality states, mood swings, suicidal thoughts, attempts, self-mutilation. There are, however, important differences. In substance abuse physical complaints are usually related to: effects of drugs, acute withdrawal or poor self care [313]. In dissociation, physical problems such as pain, stomach ache, rashes, migraines have no identifiable cause. In substance abuse, amnesia when present usually involves recent events, while in dissociative disorders, people usually cannot recall traumatic events or specific periods of childhood.

Chronic pelvic pain is a symptom frequently encountered by gynecologists and frustrating to treat because there is often no discoverable etiology and therefore, resolution, of the problem. Substance abuse is frequently associated with chronic pain syndromes. Many clinicians have found a connection between chronic pelvic pain and a previous unresolved experience of sexual trauma. A study was designed to examine the relationships between histories of sexual or physical abuse and current reports of dissociation, somatization, substance abuse, adaptive coping, and maladaptive coping strategies among chronic pelvic pain patients. Using a structured interview, investigators assessed sexual and physical abuse and somatization. The Dissociative Experiences Scale was used to assess dissociation, and an abbreviated version of the COPE scale was employed to assess adaptive and maladaptive coping strategies as well as substance abuse. Participants included 46 women with chronic pelvic pain. Women with self-reported sexual or physical abuse histories were found to have significantly higher dissociation, somatization, and substance abuse scores than women without such a history. Significant positive correlations were found between reports of both dissociation and somatization with maladaptive coping strategies and among dissociation, somatization, and substance abuse. These results support the association between a positive abuse history and the high levels of

dissociation, somatization, and substance abuse often noted in the chronic pelvic pain population [321].

PTSD and Substance Abuse

Another concurrent problem for victims of violence is the intimate connection between substance abuse and post-traumatic stress disorder. People with PTSD are two to three times more likely to have a substance abuse disorder [218]. In a number of studies showing the relationship between PTSD and substance abuse, between 25% and 58% of those seeking substance abuse treatment also were comorbid for PTSD [322]. Studies show that 27–35% of adult sexual abuse victims have a history of alcohol abuse and 21% have a history of drug abuse [323]. For women, in particular rates of co-occurrence are more than double, ranging from 30-59% depending on what population is surveyed [324]. The rate in the general population averages about 11% [218]. Women substance abusers are far more likely to have PTSD than are women in general and treatment samples tend to have higher rates of positive diagnoses than community samples [324].

Researchers are struggling to discern whether PTSD predisposes to substance abuse or substance abuse predisposes to PTSD, or both, or neither. A study was designed to look at the prevalence of post-traumatic stress disorder (PTSD) among substance users in the general population and involved 2,663 respondents in The St. Louis Epidemiologic Catchment study. Findings indicate that cocaine/opiate users are over three times as likely as comparison subjects to report a traumatic event, report more symptoms and events, and are more likely to meet diagnostic criteria for PTSD. Physical attack, but not combat-related events, was the most prevalent event reported among cocaine/opiate users. The onset of substance use preceded onset of post-traumatic symptoms, suggesting that substance use predisposes the individual to exposure to traumatic events. When other variables-- including antisocial behavior--were controlled, female gender and use of cocaine/opiates predicted PTSD [325].

But in another longitudinal study in southeast Michigan, 1,007 adults aged 21 to 30 years were initially assessed in 1989 and were followed up 3 and 5 years later, in 1992 and 1994. Of the whole sample, 540 reported a traumatic event and 21.7% met the criteria for PTSD. There were 140 with a lifetime history of any drug abuse or dependence. Post-traumatic stress disorder signaled an increased risk of drug abuse or dependence whereas exposure to traumatic events in the absence of PTSD did not increase the risk of drug abuse or dependence. The risk for abuse or dependence was the highest for prescribed psychoactive drugs. There was no evidence that preexisting drug abuse or dependence increased the risk of subsequent exposure to traumatic events, but there was an increase in the likelihood of developing PTSD after a traumatic

event in substance abusers. Traumatic experience in the absence of PTSD did not increase the risk of drug abuse or dependence. It appears that PTSD, rather than the traumatic experience itself, might be a causal factor in drug abuse and dependence when trauma survivors attempt to self-medicate themselves for the symptoms of PTSD. In this study, the strongest association between PTSD, substance abuse and substance dependence was for prescribed drugs, although preexisting PTSD increased the risk of the abuse and dependence on other drugs. There was no significant increase in risk, however for marijuana or cocaine [326, 327].

Much of the existing research literature review supports a pathway by which PTSD precedes substance abuse or dependence. The theory is that substances initially are used to modify PTSD symptoms. Then, with the development of dependence, physiologic arousal resulting from substance withdrawal may increase PTSD symptoms, resulting in relapse of substance use. It is suggested that in PTSD, corticotropin-releasing hormone and noradrenergic systems may interact such that the stress response is progressively augmented and then patients may use sedatives, hypnotics, or alcohol in an effort to interrupt this progressive augmentation [328]. Different substances may be used to adjust to the symptoms of PTSD with CNS stimulants used to boost sociability and address the avoidance symptoms, sedatives for sleep problems and irritability, while combined symptoms could lead to combinations of various drugs or sequences of drug intake [329]. Unfortunately, this form of self-medication easily compounds the existing problems. Patients with PTSD and substance abuse had more avoidance and arousal symptoms and more sleep disorders than those with PTSD alone, while they also had greater trauma exposure [330]. Patients frequently perceive the connection between the two disorders more easily than the professionals that work with them. They report that when one disorder worsened, their other disorder was more likely to worsen; when one disorder improved, the other disorder similarly improved. Consistent with these perceptions, patients with PTSD and substance abuse favored simultaneous treatment of their two disorders. Unfortunately, however, the majority of these patients were never referred to PTSD treatment [331].

Approximately 50%-60% of women and 20% of men in chemical dependency recovery programs report having been victims of childhood sexual abuse [332]. Estimates of the rate of PTSD among substance abusers varies between 12% and 34%, while for female substance abusers, the co-occurrence rate is 2-3 times as high [324]. Estimates are that as many as 75% of women in treatment for alcoholism have a history of sexual abuse [333]. A history of childhood rape doubled the number of alcohol abuse symptoms that women experienced in adulthood and there was a significant relationship between pathways connecting childhood rape to PTSD symptoms and PTSD symptoms to alcohol use [334].

In a subpopulation of female incest survivors who had been inpatients in psychiatric institutions, the numbers of substance abusers rose to 80% [323]. Battered women are 15 times more likely to abuse alcohol [335]. According to the National Women's Study, there was also substantial evidence that rape victims had higher rates of drug and alcohol consumption and a greater likelihood of having drug and alcohol-related problems than non-victims [68].

In a prospective longitudinal study of 182 women and 148 men in outpatient substance abuse treatment, the women were far more likely to have sexual and physical abuse and higher levels of PTSD. The women had more factors predicting relapse: low self-esteem, depression, anxiety, and suicidal behavior. But interestingly, PTSD was not associated with relapse to drug use. In fact, women were not more likely than men to relapse within 6-month post-treatment interval. The conclusion the authors drew was that although women have more psychological risk factors associated with relapse, they are more likely than men to engage in treatment and it is engagement in treatment, especially participation in group counseling, that appears to mitigate risk of relapse for women [336].

One study evaluated the epidemiology of physical attack and rape among a sample of 171 not-in-treatment, crack-cocaine using women and illustrates the compounding interaction of substance abuse and PTSD. Since initiating crack use, 62% of the women reported suffering a physical attack. The annual rate of victimization by physical attack was 45%. Overall, more than half of the victims sought medical care subsequent to an attack. The prevalence of rape since crack use was initiated was 32%, and the annual rate was 11%. Of women raped since they initiated crack use, 83% reported they were high on crack when the crime occurred as were an estimated 57% of the perpetrators. Duration of crack use and a history of prostitution were predictors of suffering a rape [250].

Another study assessed victimization and post-traumatic stress disorder (PTSD) in a clinical and a national, epidemiologic sample of women who had received treatment for a substance use disorder. Separate clinical and epidemiologic approaches to evaluating substance use disorders were compared. More than 80% of women in both samples had a history of sexual and/or physical assault and approximately one-quarter had current PTSD [337]. At least 25% of treatment-seeking substance abusing patients suffer from crime-related post-traumatic stress disorder (CR-PTSD). In one study more than 90% of the SUD patients reported some type of victimization and approximately 38% met criteria for current CR-PTSD [338].

Another research project was designed to look at changes over time in post-traumatic stress disorder (PTSD) symptoms during periods when individuals with substance use disorders remain abstinent. PTSD symptomatology over a 36-month period was studied in cocaine-dependent individuals and results were

compared with participants who were negative for PTSD at baseline. Patients who had PTSD at the baseline point were significantly more likely to: (a) meet criteria for current PTSD at follow-up and (b) have been re-victimized over the time period of the study [339].

Another study was designed to assess the risk for first-onset major depression, anxiety, and substance use disorders with prior (PTSD) in sample of women. A random sample of 801 mothers of children, was selected, who participated in a study of cognitive and psychiatric outcomes by level of birth weight. The lifetime prevalence of traumatic events was 40% and of PTSD, 13.8%. Post-traumatic stress disorder signaled increased risks for: first-onset major depression and alcohol use disorder. The risk for major depression following PTSD was of the same magnitude as the risk for major depression following other anxiety disorders. Women with preexisting anxiety and PTSD had significantly increased risk for first-onset major depression. Additional analysis showed that preexisting major depression increased women's vulnerability to the PTSD-inducing effects of traumatic events and risk for exposure to traumatic events. The authors concluded that PTSD influences the risk for first-onset major depression and alcohol use disorder [340].

PTSD was evaluated in 91 participants attending a community-based substance abuse program. The results showed that 52.8% of participants had either PTSD (37.4%) or possible PTSD (15.4%). Findings also showed that those with PTSD experienced more potentially traumatic events (e.g., rape, being beaten-up) compared to the possible PTSD and no PTSD participants. Self-report measures correctly classified 70% of the PTSD group and 80% of a composite group of possible PTSD and no PTSD participants [341].

Another study looked at the prevalence of post-traumatic stress disorder (PTSD) among a sample of treatment-seeking substance abusers and examined the relationship between PTSD comorbidity and rates of inpatient substance abuse treatment. Eighty-four patients (48 male and 36 female) were admitted for detoxification at a private hospital and were administered self-report measures of lifetime stressor events, PTSD symptomatology, and prior treatment history. About 25% were found to present with significant PTSD symptoms. Women were more likely than men to have been physically and sexually abused, and women reported experiencing a greater number of traumatic events. Consequently, more women than men were classified as having possible PTSD. With respect to inpatient substance abuse treatment admission rates, the PTSD group reported a greater number of hospitalizations than their non-PTSD counterparts [342].

A study looked at the relationship between substance use, trauma history, post-traumatic stress disorder (PTSD), and psychiatric comorbidity in a treatment seeking sample of cocaine dependent individuals (N = 91). Structured clinical

interviews revealed that 42.9% of the sample met DSM-III-R criteria for lifetime PTSD. Patients with PTSD had significantly higher rates of exposure to traumatic events, earlier age of first assault, more severe symptomatology, and higher rates of Axis I and Axis II diagnoses [343].

Another study looked at 450 men and women entering private, hospital-based treatments for cocaine dependence. The prevalence of event exposure was the same for women and men; however, women were approximately five times more likely than men to be diagnosed with lifetime and current PTSD. Women experienced more PTSD than men even when exposed to the same type of event. In most subjects with PTSD, onset of the disorder preceded onset of cocaine dependence. Subjects with PTSD were more likely than those without PTSD to have additional co-occurring mental disorders. Findings from this relatively affluent, privately treated sample suggested that PTSD and cocaine dependence are related, independent of patients' resources. They further indicate that the relationship between gender and PTSD is robust across patient populations [344].

Lesbians, Violence and Substance Abuse

The MacArthur Foundation Survey of Midlife Development in the United States drew upon information from thousands of respondents aged 25-74 years of age from the non-institutionalized, English-speaking U.S. population. On the survey, one question was used to ascertain sexual orientation. About 2.5% of the respondents said they were homosexual or bisexual, and 49% of these were women. There was no statistically significant difference between homosexuals and heterosexuals in the prevalence of high levels of psychological distress, but the occurrence of discrimination differed between the two groups. 76% of homosexual or bisexual individuals reported personal experiences of discrimination and 25% of these reported that sexual orientation alone had been the basis for their being discriminated against. For example, 39% of the lesbian women thought they had been discriminated against by not being hired for a job; 34% by not being promoted at their job; 17% by being fired from a job. Growing evidence suggests that the experience of discrimination can result in negative psychological and physiological changes, underscoring its possible role as a risk factor for other kinds of problems [345]. Data from the National Comorbidity Survey indicated that 2.1% of men and 1.5% of women reported one or more same-sex sexual partners in the past five years. These respondents had a higher 12-month prevalence of anxiety, mood, and substance use disorders and of suicidal thoughts and plans than did respondents with opposite-sex partners only [346].

Investigators designed a study to identify psychosocial and health care needs of lesbians, to assess relationships with primary care providers and

disclosure of sexual orientation, and to describe the chronologic features of a sexual identity and lifestyle. An anonymous, self-administered written questionnaire was distributed through a campus lesbian organization. Fifty-three women (median age 23 years) completed the questionnaire. Whereas 60% had disclosed their sexual orientation to their parents, only 31% had "come out" to their health care provider. Of participants who had disclosed their sexual preference to a provider, 27% reported a negative effect on their health care, and 16% felt pressured in the past to accept birth control from a physician. Lesbian sexuality was associated with several risk factors, such as childhood abuse (20%), alcohol or drug problems (39%), suicide attempts (27%), depression (49%), and physical or verbal abuse at school (34%). The average age of awareness of sexual orientation was 15 years, and average age of first homosexual activity was 17 years [347].

In research with 942 non-clinical adult participants, gay men and lesbian women reported a significantly higher rate of childhood molestation than did heterosexual men and women. Forty-six percent of the homosexual men in contrast to 7% of the heterosexual men reported homosexual molestation. Twenty-two percent of lesbian women in contrast to 1% of heterosexual women reported homosexual molestation. This research is apparently the first survey that has reported substantial homosexual molestation of girls. Suggestions for future research were offered [348].

In a nonrandom sample of 94 women who are in long-term sexual relationships, the women were divided into groups of heterosexual and homosexual women who reported childhood sexual abuse, and heterosexual and homosexual women who reported no history of childhood sexual abuse. The groups were rated according to their levels of sexual satisfaction and relationship satisfaction. Results indicate that women who have not been abused are more satisfied with their relationships than women who have been abused. Heterosexual and homosexual women who have a history of childhood sexual abuse are less satisfied with their sexual relationships than women without histories of abuse. However, homosexual women who have been abused rated their relationship satisfaction higher than heterosexual women who have been abused [349]. In a smaller study of 35 lesbians in alcohol recovery, 46% unexpectedly disclosed having survived childhood sexual abuse (CSA), linking it with addiction and recovery experiences. This subgroup described unbounded difficulties that pervaded their lives well into recovery. They reported multiple addictions, self-harm, isolation, sexual problems, depression, self-loathing, physical illness, and inability to work more often than did other participants. Those not reporting CSA were more socially and occupationally stable, self-satisfied, and physically well in recovery; their alcohol problems seemed circumscribed and responsive to conventional intervention [350].

According to the National Gay and Lesbian Task Force of 1984, lesbians and gay men are 7 times more likely to be victims of crimes than the average citizen. In a large survey of criminal victimization experiences collected from 2,259 Sacramento-area lesbians, gay men, and bisexuals, approximately 1/5 of the women and 1/4 of the men had experienced victimization because of their adult sexual orientation. Hate crimes were less likely than other crimes to have been reported to police. Compared with other recent crime victims, lesbian and gay hate-crime survivors manifested significantly more symptoms of depression, anger, anxiety, and post-traumatic stress. They also displayed significantly more crime-related fears and beliefs, lower sense of mastery, and more attributions of their personal setbacks to sexual prejudice than did other crime victims and non-victims [351]. According to the FBI, 16% of all victims of hate/bias crimes in 2000 were victims of crimes motivated by bias against sexual orientation and 7% of these were specifically anti-female homosexual bias [352].

Being a lesbian does not serve as an immunity against domestic violence. In a review of nineteen studies looking at intimate violence in the lives of gay men and lesbian women, the literature suggests that the prevalence rates of same-sex partner abuse are high and that the correlates of abuse are similar to those identified in incidents of heterosexual partner abuse [353]. According to the National Coalition of Anti-Violence Programs, the rates of lesbian, gay, transgender, and bisexual domestic violence is roughly equal to the estimates for heterosexual couples – between 25-33% [354].

In the 1996 National Household Survey on Drug Abuse, researchers examined alcohol use patterns and treatment utilization among adults. Sexually active respondents were classified into 2 groups: those with at least 1 same-gender sexual partner (n = 194) in the year prior to interview and those with only opposite-gender sexual partners (n = 9,714). The authors compared these 2 groups separately by gender. Homosexually active women reported using alcohol more frequently and in greater amounts and experienced greater alcohol-related morbidity than exclusively heterosexually active women [355]. In another study, however 263 lesbians completed a self-report questionnaire as part of a larger study. Neither high rates of heavy drinking nor drug use were found in this sample. Among those who did drink excessively, it was associated with avoidant coping. Perceived stress and social resources did not differ significantly from the general female population. Levels of stress, social support, and coping style were not predictive of problematic substance use. The most significant predictor of alcohol use was reliance on bars as a primary social setting. Implications of these findings are discussed [356]. In another study, The Epidemiologic Study of Health Risk in Lesbians (ESTHER), a much higher percentage of women in the lesbian sample were classified as heavy drinkers (4.7%) compared with the sample of women in the CDC's Behavioral Risk Factor Surveillance Survey that was the comparison group [357].

When lesbians are exposed to workplace harassment, one study indicates that they may be more susceptible to alcohol abuse than heterosexual women [358]. Another study examined the sexual and drug use behaviors for bisexual and heterosexual drug users (n=11,435 males and n=5,636 females) who participated in the NIDA AIDS Cooperative Agreement study. For females, bisexuality was associated with ever having been arrested, past substance abuse treatment, ever having been paid for sex, ever having paid for sex, having five or more sexual partners in the month preceding the interview, ever using cocaine, and sharing injection equipment in the month preceding the interview. Overall, results from this study indicate that both male and female bisexuals, when compared to heterosexuals, were at higher risk for HIV and were more likely to be HIV positive [359].

Questionnaires from 1,633 lesbian women in a national community-based study provided the database for another study that looked at mental health services and life experiences. Past studies that investigated mental health needs of lesbians focused on the quality of treatment by mental health providers, rates of suicide attempts, and alcoholism. Findings indicated that although a significant number of the lesbian women in the sample had been in therapy, they sought out therapy as a coping strategy to deal with similar issues as other women, i.e., depression and relationships. Suicide attempts decreased considerably after adolescence and "coming out." Rates of alcohol use and abuse, although difficult to compare with other studies, were higher than other women but similar to other studies investigating a community sample of lesbians. Even with a high family history of alcoholism, less than 5 percent reported having sought out therapy to deal with any issues of alcohol or drug use [360].

Lesbian women have rates of substance abuse roughly similar to that of non-gay men and women, although frequent heavy drinking is reported to be higher among lesbians, fewer lesbians abstain from alcohol [361], and rates of drinking, heavy drinking, and problem drinking among lesbians decline less with age. A study from 1989 revealed that while a higher proportion of lesbians use alcohol or other drugs than heterosexual women, the increase was in moderate, not heavy, use [362]. A study of lesbians and substance use found that lesbians reported a higher incidence of problems when they drink compared to non-gay women, although both groups have similar drinking rates [363]. In another study derived from data from a 1996 health survey of Kaiser Permanent members, lesbians and bisexual women younger than 50 years were more likely than heterosexual women to smoke cigarettes and drink heavily. Lesbians and bisexual women aged 20-34 reported higher weekly alcohol consumption and less abstinence compared with heterosexual women and older lesbians and bisexual women [364].

There are some indications that given the shortage of specialized mental health services for those who are lesbian, gay, bisexual or transgender (LGBT)

individuals with major mental illness, their rate of dissatisfaction with the mental health system is likely to be higher than others. In one study, a significantly higher percentage of the LGBT group (17.6%) than of the control group (8%) was dissatisfied with mental health services. LGBT individuals were members of racial minority groups and those living alone were especially likely to be dissatisfied with mental health services. The dissatisfaction was found to especially true for lesbian and bisexual women [365].

Incarcerated Women, Violence and Substance Abuse

Women are the fastest-growing population in the criminal justice system. From 1980 to 1996, the number of women incarcerated in prisons and jails increased by 439% while the number of men increased by 229%. In 1996, women accounted for 7.7% of all inmates. Black and Hispanic women have the highest rates of incarceration [366]. In 1998, 3.2 million women were arrested and about 1 million women spent some time in jail that year. Most return to their communities within a few weeks of arrest, and few receive help for the substance abuse, health, psychological or social problems that contribute to incarceration [144]. In 1998 an estimated 950,000 women were under the care, custody, or control of correctional agencies – probation or parole agencies – probation or parole agencies supervising 85% of these offenders in the community. The total equals a rate of about 1 woman involved with the criminal justice system for every 109 adult women in the U.S. population [147].

Who are these women? The increase in drug law violators accounted for more than half of the increase in the female state inmate population between 1986 and 1991. In state prison, by 1991, a third of all women were convicted of a drug law violation, compared to 21% of men. In federal prison, from 1980 to 1991, the proportion of women who were drug law violators increased from 21% to 66% [366]. Typically the women began using drugs as young children or teens, often in direct response to sexual and/or physical abuse. The majority had no prior drug convictions and received felony convictions for very small quantities of drugs. They have limited educations, limited literacy, an employment history in short-term, low-wage jobs, histories of homelessness and prostitution, multiple physical and mental health problems needing treatment, have survived repeated and severe violence as adults, have children they care about but with whom they have troubled relationships, want to work but have multiple barriers to employment. For them, jail was the first time anyone had talked to them about the abuse or been offered drug treatment [367].

About half of women offenders confined in State prisons had been using alcohol, drugs, or both at the time of the offense for which they were incarcerated. On every measure of drug use (ever used, using regularly, using in month before the offenses, and using at time of offense), women offenders in

State prisons reported higher use than men – 40% of women compared to 32% of male inmates. By contrast, every measure of alcohol usage was higher for the male inmates. An estimated 25% of women on probation, 29% of women in local jails, 29% of women in State prisons, and 15% of women in Federal prisons had been consuming alcohol at the time of the offense. About 6 in 10 women in State prison described themselves as using drugs in the month before the offense, 5 in 10 described themselves as a daily user of drugs, and 4 in 10 were under the influence of drugs at the time of the offenses. Nearly 1 in 3 women serving time in State prisons said they had committed the offenses that brought them to prison in order to obtain money to support their need for drugs. Nearly 6 in 10 women in State prisons had experienced physical or sexual abuse in the past; just over a third of imprisoned women had been abused by an intimate in the past; and just under a quarter reported prior abuse by a family member. Substance abusing female inmates were more likely than substance abusing male inmates to report having received treatment. Nearly 56% of women substance abusers in State prisons compared to 41% of males had ever been in substance abuse treatment; 20% of women and 14% of men had received such treatment since prison admission. Nearly a third of both men and women inmates with substance abuse problems indicated that they had participated in some other type of voluntary program, such as Alcoholics Anonymous or Narcotics Anonymous, since entering prison [147].

In 1999, 76% of the adult female arrestees in Philadelphia who were tested for drugs at the time of their arrests tested positive for drugs. The majority of those receiving treatment in Philadelphia reported that cocaine was their primary substance of abuse [11]. In Pennsylvania during 2000, there were 48,194 arrests for drug offenses, and over 6,700 of those arrested were juveniles under the age of 18 [368]. As of June 30, 2001, there were 537 black females and 210 white females in Philadelphia prisons, comprising about 11% of the prison population. [369].

Female offenders generally had more difficult economic circumstances than male inmates prior to entering prison. About 4 in 10 women in State prison reported that they had been employed full-time prior to their arrest, compared to 6 in 10 male inmates. About 37% of women and 28% of men had incomes of less than \$600 per month prior to arrest. While just under 8% of male inmates had been receiving welfare assistance prior to arrest, nearly 30% of female inmates had received welfare. In 1997, an estimated 2200 women serving time in State prisons were HIV-positive, about 3.5% of the female inmate population [147].

Women account for about 14% of violent offenders – an annual average of about 2.1 million violent female offenders. Three out of four violent female offenders committed simple assault. An estimated 28% of violent female offenders are juveniles. Three out of four victims of violent female offenders

were women. Nearly 2 out of 3 victims had a prior relationship with the female offender. An estimated 4 in 10 women committing violence were perceived by the victim as being under the influence of alcohol and/or drugs at the time of the crime. At the same time, the rate at which women commit murder has been declining since 1980. Since 1990 the number of female defendants convicted of felonies in State courts has grown at more than 2 times the rate of increase in male defendants. More than half of female violent offenders were described by victims as white and just over a third were described as black. Black and white offenders accounted for nearly equal proportions of women committing robbery and aggravated assault; however, simple assault offenders were more likely to be described as white. Among violent female offenders, 53% committed the offense while alone and 40% were with others, all of whom were female. An estimated 62% of female violent offenders had a prior relationship with the victim as an intimate, relative or acquaintance in contrast to male violent offenders who were estimated to have known the victim in only about 36% of the cases. When women committed their violent offense against men, 35% of the offenders attacked an intimate or relative, while only 8% of victimizations of other females involved intimates or family members. For nearly half of female offenders the violent offense took place either at or near the victim's home or school, circumstances that occur in only a third of the male offenses. Female offenders account for about 1 in 4 offenders committing violence at a school, and women account for about 1 in 8 violent offenders in the workplace. Since 1993 both male and female rates of committing murder have declined – for women about 1 murderer for every 77,000 women in the population. Of the 60,000 murders committed by women between 1976 and 1997, just over 60% were against an intimate or family member compared to 20% among male murderers. The only group of women for whom the rate of murder offending has not continued to decrease are those age 18-24. Nearly 6 in 10 female murderers are black. Just over half of women committing murder used a firearm. Between 1976 and 1997, parents and stepparents murdered nearly 11,000 children. Mothers and stepmothers committed about half of these child murders. Sons and stepsons accounted for 52% of those killed by mothers and 57% of those killed by fathers. Mothers were responsible for a higher share of children killed during infancy while fathers were more likely to have been responsible for murders of children age 8 or older [147].

In state prison in 1991, 37% of women received drug treatment and more than a quarter of the women had been in some drug treatment program prior to their imprisonment. In 1994, a reporter from the New York Times described the clients that a prison medical director of health services in New York City was serving “*the isolated community of 14,000 that Dr. Yvette Walker serves is a sinkhole of medical problems: 25% of her patients have syphilis, 25% are mentally ill and more than 75% are drug users. Of the women 27% are HIV-positive, 30% have sexually transmitted diseases and 10% are pregnant*”[366].

Although prison provides these women with some limited opportunities, there are serious drawbacks to the existing penal system. Prison reinforces the victim role these women have been in since childhood. Prison life frequently discourages any emotional expression except for aggression and discourages responsibility because basic needs are all provided [370].

A study showed that women with histories of delinquent and/or criminal behavior before drug use are more likely to have used more types of drugs and have used multiple drugs together, tended to have a history of being abused, either emotionally, physically, or sexually, are less successful on all outcome measures during 6-month follow-up and have a high lifetime incidence of emotional, physical, and sexual abuse: 57.1% emotional abuse, 48.9% physical abuse, and 39.7% sexual abuse [371]. In another study, 158 women with a recent history of drug use who were incarcerated in a New York City jail facility were evaluated. Women who had lost custody of their youngest child were 3.3 times more likely to be regular crack users and women who demonstrated more negative coping behavior and perceived themselves as having less emotional support were also more likely to be regular crack users [372].

In a study of 1,272 female detainees in a jail in Chicago, 80% of the women met the diagnostic criteria for at least one lifetime psychiatric diagnosis, including 33% with PTSD, 17% with major depression, 14% with anti-social personality disorder, and 10% with dysthymia. Nearly two-thirds of the women fit the diagnostic criteria for drug abuse/dependence and a third of the women were alcoholics or alcohol abusers. These prevalence rates were substantially higher than among economically and demographically matched samples of women in the community [373].

To assess psychiatric impairment and childhood victimization experiences in female child molesters, investigators compared 11 incarcerated female child molesters to 11 women imprisoned for nonsexual offenses. The majority of the subjects in each group exhibited major depression, alcohol/substance abuse, and PTSD, but the sexual offenders demonstrated more psychiatric impairment. The sexual offenders demonstrated a higher incidence of childhood physical and sexual abuse within the family than the comparison group, and these victimization experiences were more severe and more frequently associated with PTSD. The sexual offenders and the comparison women described negative relationships with parents and caretakers, and with spouses or boyfriends. However, the sexual offenders perceived their parents as more abusive, while the comparison women regarded their parents as more neglecting [374].

The needs of incarcerated women are enormous. A study reported on the self-reported post-release needs of 165 women in jail, urban Ohio, 1999. Drug-abusing women were more likely to report needs for: housing, mental health

counseling, education, job training, medical care, family support, and parenting assistance [375].

Among this very damaged population, as many as 25% are pregnant or have delivered within the past year. In 1991, 6% of women in state prison and 4.8% in federal prison were pregnant when incarcerated and by applying those percentages, by the end of 1996, more than 4,000 state inmates and 370 federal inmates were pregnant when they entered prisons, many of whom are likely to be regular drug users [366]. Reproductive health and drug treatment services for women in prison are inadequate, if they are available at all and although illicit drugs are readily available. Studies of pregnancy outcome among women prisoners have demonstrated high rates of perinatal mortality and morbidity [144, 376].

A study looked at 63 pregnant prisoners in their third trimester. Over 60% of respondents reported experiencing family violence during childhood or adolescence. Almost one-half of the women reported using drugs and alcohol during the past year and in their current pregnancy. Substance-abusing respondents were twice as likely to have been victims of physical abuse. All of the women who had been sexually abused during childhood were substance abusers; women who did not use drugs had no such history. Many women in the study had parenting and child rearing attitudes indicative of risk for poor parenting and abuse. More than 70% of the women reported depressive symptoms above the level considered indicative of clinical depression. They also reported low levels of social support: 50% of the women had lost an important relationship within the last year and 80% were not in a relationship with a partner at the time of their interview [377].

Another study described factors that place crack-addicted female jail inmates at risk for HIV infection. One-and-a-half-hour interviews were conducted with 14 inmates recovering from crack addiction. The women were aged 19 to 39, and 13 were African American. The results of this study suggest that women's addictions are greatly shaped by their family and intimate relationships. Addictive behavior often precluded safer sex behaviors and increased a woman's likelihood of engagement in HIV-risky behaviors. Many women were victims of childhood and adulthood sexual and physical victimization. Women sought to protect themselves through sexual self-protection strategies, although these measures were often not effective HIV risk-reduction strategies [378].

Women in jail experience high rates of many health and social problems. A study examined the effects of preexisting social and health characteristics and the type of services received on retention in community aftercare for 193 drug-using women released from the New York City jail to two low-income communities. Re-arrest rates for program participants were compared to a group of women not eligible for services because of their residence outside the target

communities. Women who enrolled in residential programs with on-site drug treatment and other social services after release were compared to women who enrolled in less comprehensive services. The residential treatment group participated in the program significantly longer than women in other types of services. Women in residential programs were significantly more likely to have used crack or cocaine in the 30 days prior to arrest than women in other types of programs but few other prior differences among the different treatment groups were noted. Therefore, differences in outcome were unlikely to be attributed to preexisting differences in risk profile. Women who participated in post-release services were significantly less likely to be rearrested in the year after release than a comparable group of women who participated in jail services, but were not eligible for post-release services [379].

Another study presented the results of a needs assessment survey conducted with 66 incarcerated women in a large Philadelphia county jail during the winter of 1993. Results indicated that prior to incarceration, these women engaged in very high risk sexual and drug use behaviors, and had experienced a myriad of other problems that might have contributed to their risk for HIV infection. Of the 66 women who participated in the study, over three-fourths had used crack cocaine, nearly one-half had traded sex for drugs and money in the six months prior to incarceration, one-third reported a prior history of injection drug use, and one-half report sexual contact with a male partner who injected drugs. In addition, one-fourth of the study sample had been homeless during the year prior to incarceration, one-half reported a prior history of sexual abuse, three-fourths had been physically beaten by a boyfriend or spouse, and nearly one-half had a prior history of syphilis. The results provide strong evidence for the need for interventions that address not only the HIV-related risk behaviors of incarcerated women, but also the underlying social problems that contribute to their risk of HIV infection [380].

In recent years imprisonment has been used increasingly for a wide range of nonviolent and petty offenses committed by women. Among incarcerated women, particularly those who are pregnant or parenting, substance use and its deleterious consequences are often exacerbated by imprisonment. Women who have been identified as chemically dependent are also at high risk for losing custody of their children. In California, the Options for Recovery (OFR) treatment program provided an alternative to incarceration or relinquishment of custody of children for chemically dependent pregnant and parenting women. This three-year pilot project offered alcohol and other drug abuse treatment and case management to women, and included special training and recruitment of foster parents for their children. Findings from a three-year, multimethod evaluation study showed that women who were mandated to OFR treatment programs were more likely to successfully complete treatment than women who had enrolled in OFR voluntarily. An economic analysis of the costs associated with women in

OFR compared with the combined costs of incarceration and alcohol and other drug abuse treatment produced a ratio in favor of OFR. Additionally, some innovative service alternatives for women mandated to treatment were developed during the project [381].

It has been standard practice both within the usual treatment environments and within correctional institutions to administer male-oriented programs to women prisoners. Critics of this practice argue that female prisoners have special needs that are not met by programs originally designed for male prisoners. One group of researchers decided to examine gender differences among 1,326 male and 318 female federal prisoners who were enrolled in a substance abuse treatment program. They found that women used drugs more frequently, used harder drugs, and used them for different reasons than men. Women also confronted more difficulties than men in areas linked to substance abuse such as educational background, childhood family environment, adult social environment, mental health, and physical health [382].

A program called Health Link has been instituted in the New York prison system to address the complex needs of incarcerated women. The majority of women in the program are African American (69%) or Latina (26%). Of the women 85% had children. More than a third had been homeless in the year prior to arrest. In their lifetime, 57% had been beaten so badly that they required medical treatment and 54% had been forced to have sex against their will. They reported high levels of drug and alcohol use. Almost half had been arrested for selling or possessing drugs. The objectives of Health Link are to: deliver coordinated and integrated services to reduce drug use and rearrest rates; increase the capacity of community-based organization and service providers to serve the women effectively; work to strengthen a network of local service providers that coordinate service for women coming out of jail; work to change correctional policy and to secure ongoing resources to improve the quality of life for women and their families in the communities to which they return. In an evaluation of data collected from 1994 to 1996, at six months 46% of the enrolled women had been retained in the program at various levels of engagement. The retention rate at 12 months was 35%. Women receiving full Health Link services had a rearrest rate that was 21% lower than for the fail services only group (38% vs. 59%) [144].

VI. The Health Consequences of Trauma and Substance Abuse

The serious health impact of alcoholism and of illicit drugs has been studied extensively [3]. One in five men and one in ten women who visit their primary care providers meet the criteria for at-risk drinking, problem drinking, or alcohol dependence, according to a recent study and 20% of the sample reported using illicit drugs five or more times in their lifetime and 5% reported current illicit drug use [383, 384]. Over 100,000 Americans die each year from alcohol-related causes, which, if it were ranked independently, would make alcohol-related problems the third leading cause of death in the United States [385].

There is a growing body of information about the relationship between stress, traumatic stress, and the immune system. So far, we know that even mild stress impacts on the immune system [386, 387]. The interaction between stress and immunity is complex, mediated by the mind of the stressed, or distressed, individual, a mind that brings with it the abilities to filter and interpret information. Thus, concepts such as coping, control, helplessness, and hopelessness are required to understand the complex nature of the immune responses [388].

Child Abuse and Health

The ACE's Study discussed in detail above demonstrated that the number of categories of adverse childhood exposures showed a graded relationship to the presence of adult diseases including ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease. The seven categories of adverse childhood experiences were strongly interrelated and persons with multiple categories of childhood exposure were likely to have multiple health risk factors later in life [228]

Interest has grown in looking at the connection between women's experience of violence and subsequent health problems. In a study of primary care women, a history of sexual abuse was associated with: substantial impairment in health-related quality of life, greater number of somatic symptoms, medical problems, psychiatric symptoms and diagnoses, poorer mental health, social functioning and quality of life even after adjusting for the presence of several common psychiatric diagnoses [389].

In a recent study, one group of researchers documented the negative health effects of sexual violence on women with abusive partners [390]. In a

journal for nurse midwives, authors urged that readers recognize the health effects of childhood sexual abuse, domestic violence and rape particularly since abuse survivors are disproportionately frequent users of health care services as a result of the acute and chronic physical, somatic, emotional, and behavioral sequelae of abuse [391]. Researchers looked at 275 British undergraduates and surveyed their history of sexual and physical abuse in childhood and their health care utilization, somatization, and hypochondriasis as an adult. Physical and sexual abuses were recalled by separate groups. Physical abuse predominated in males and sexual abuse in females. Both types of abuse were followed by a greater number of hospital admissions and surgical procedures, somatization, and hypochondriasis in adulthood [392].

Internists specializing in gastrointestinal disorders have been noticing the connection between chronic disorders and a past history of childhood abuse. One study looked at 239 female patients presenting to a gastroenterology clinic. They found that 66.5% of the women had experienced sexual and/or sexual abuse and that the women with a sexual abuse history had more pain, other somatic symptoms, bed disability days, lifetime surgeries, and functional disabilities than those without sexual abuse. Women with physical abuse also had worse health outcome on most indicators, while rape and life-threatening physical abuse seem to have worse health effects than less serious physical violence and milder forms of sexual abuse [103]. Others studied irritable bowel syndrome and saw that the IBS patients have an exaggerated responsivity of the gastrointestinal tract to mental stress [393].

In studies designed to look at the comorbidity between chronic pelvic pain, irritable bowel syndrome, and a past history of abuse, researchers found that compared to women with irritable bowel syndrome alone, those with both irritable bowel syndrome and chronic pelvic pain were significantly more likely to have a lifetime history of dysthymia disorder, current and lifetime panic disorder, somatization disorder, childhood sexual abuse and hysterectomy [105]. In a randomized survey of 1599 women, 31.5% of participants reported a diagnosis of gynecologic problems in the past 5 years. Those with problems were more likely to report childhood abuse, violent crime victimization, and spouse [394]. Another study looked at the connection between chronic intractable pain and histories of childhood sexual abuse in 112 women sampled from a large university campus health centre. Fifty-nine (59) women with chronic back pain were sampled and compared with 53 control subjects obtained simultaneously from the same clinical population. The women with chronic intractable back pain had a significantly higher percentage of childhood sexual abuse experiences than controls [395]. In another study of chronic back pain, three or more childhood psychological risk factors were prevalent in patients with refractory low back pain with or without prior lumbar spine surgery, especially in patients with minimal

structural pathology. The authors concluded that multiple childhood psychological traumas may predispose a person to chronic low back pain [396] .

Chronic Violence and Health

Violence is the second leading cause of injuries to women between the ages of 15 and 44 [397]. Not only the battered women but also their children use health services six to eight times more often than controls [398]. Among a hospitalized population in an urban teaching hospital, 26% of women admitted for a variety of problems, reported being in an abusive relationship at some time in their life [399].

In a study of 108 women screened at a women's health clinic, 69% reported a history of trauma. Almost half (49%) reported having been sexually harassed. Women with gynecological problems were more likely to be victims of sexual assault and more likely to report a history of childhood sexual abuse [400] . In a study designed to evaluate substance abusing women seeking public addiction treatment, researchers looked at the presence or absence of a lifetime history of physical/sexual abuse in over 2000 women. The prevalence of victimization was 42%. Those with the most significant association with victimization histories had: episodic medical disease, recent emergency department visits, chronic medical disease, primary care physician's awareness of substance abuse history, and lower income. Alcohol and crack cocaine users had higher prevalence of victimization compared with heroin or non-crack cocaine users [401].

In a study of 1,931 women, 47 met criteria for current low-severity violence without prior abuse, and 79 met criteria for current high-severity violence without prior abuse, and 1,257 had never experienced violence. The remaining patients reported either childhood violence or past adult abuse. When adjusted for socioeconomic characteristics, the number of physical symptoms increased with increasing severity of violence. Psychological distress also increased with increasing severity of violence. Women with any current violence were more likely to have a history of substance abuse. In this study, even low-severity violence was associated with physical and psychological health problems in women. The data suggested a dose-response relation between the severity of violence and the degree of physical and psychological distress [402].

A study looked at the connection between sexually transmitted disease and trauma. Of 375 in an inner city health clinic, 37.6% women reported ever having experienced physical assault by an intimate, 32.8% reported verbal threats of violence, and 15.5% reported at least one episode of physical abuse in the year preceding participation. A report of physical violence was associated

with: drug use, a positive history of sexually transmitted disease, and a history of a serious medical condition [303].

Over 25% of chronic pain patients have PTSD. Among these patients there is a higher rate of re-experiencing symptoms in contrast to patients with alcoholism and PTSD who demonstrate a higher rate of avoidance and arousal symptoms. Patients with PTSD and chronic pain reported greater symptoms severity scores while those with PTSD and substance abuse reported greater symptom frequency [341].

Criminal Victimization and Health

Koss and her associates looked at the long-term physical health consequences of criminal victimization. Among a population of almost 400 adult women, they found that compared with non-victims, victimized women reported more distress, less well-being, visited the doctor twice as frequently and had outpatient costs that were 2.5 times greater [403]. They also studied almost 2300 women in a health maintenance organization. They had a 45% response rate to their survey and 57% of them had been victims of crime. Rape incidence was approximately 15 times higher than the National Crime Victimization Survey estimates for women. Medical care had been sought by 92% of crime victims during the first year following the crime and by 100% during the second year [404].

HIV, Violence and Substance Abuse

AIDS is now the fourth leading cause of death among women of childbearing age in the United States. As of January 1997, the Centers for Disease Control and Prevention had documented almost 85,500 cases of AIDS among adolescent and adult women in the United States. In these cases, about 62% were related either to the woman's own injecting drug use or to her having sex with an injecting drug user. About 37% were related to heterosexual contact and almost half of these women acquired HIV/AIDS by having sex with an injecting drug user [225]. Through June 1999, there were 9,445 adults or adolescents and 166 children under the age of 13 in Pennsylvania living with HIV/AIDS [8]. Statistics for 1994-1996 in Philadelphia County indicate that the annual number of aids cases is 3,473, while the annual rate per 100,000 population is 77.2 [405].

There is an established relationship between HIV infection and exposure to violence via multiple pathways. One author has pointed out that the characteristic symptoms of childhood abuse may lead to HIV high-risk behavior including chronic depression, sexual compulsivity, revictimization, and substance

abuse. All are identified as barriers to HIV education and intervention for survivors [406].

In an inner city population of women attending a sexual health clinic in the U.K., women reporting a history of child abuse were more likely to have had previous sexually transmitted diseases and to have had more than one infection compared with women who had not experienced child abuse. Women reporting a history of child abuse had higher anxiety compared with women with no history of child abuse. Women with a history of child abuse reported significantly higher frequency of thoughts reflecting anticipated negative reactions from partners to suggesting condom use and judging a partner's risk by their appearance compared with women with no history of child abuse [407].

A group of investigators conducted face-to-face interviews with 373 women living with HIV/AIDS in New York City. Most were indigent African-Americans and Latinas. Participants reported considerable stressors. For example, 59% had been sexually abused and 69% physically abused at some point in their lives. In the past 30 days, 9% reported having injected drugs. However, participants also reported considerable strengths, including high levels of spirituality, mastery and HIV-related social support [408].

In another study 1490 community-recruited women who were sexual partners of injection drug-using men were interviewed in three U.S. cities during 1990-'92. Data was collected on respondents' childhood and adolescent sexual abuse history, identity of abuse perpetrators and duration of abuse. Over 56% reported a history of sexual victimization by age 18, including 39% who were abused before age 12 and over 53% who were victimized by abuse involving bodily contact by age 18. One in three women was victimized by unwanted penetration by age 18. White women more likely than African-American and Hispanic women to have been the victims of virtually every type of abusive act investigated here. Overall, nearly two out of three White women had experienced some form of sexual abuse by age 18, including almost 42% who were the victims of unwanted penetration by this age. Acts of forced sexual touching and penetration occurring in childhood were most likely to have been carried out by an uncle or other relative of the victim; family members were much less likely to be the perpetrators of adolescent contact abuse. Based on these findings, it appears that many in this special population of women are likely to be at substantial risk for some of the long-term effects of early life sexual abuse, including those that may reduce victims' ability to take preventive action against HIV risk. [409].

In one study of 230 HIV+ women in New York, there was a high prevalence of abuse in childhood (50%) and adulthood (68%). Seven percent of the study population reported physical assault or rape in the last 90 days. Childhood abuse significantly correlated with both adult and recent trauma [410].

A population-based study reviewing the records of almost 400,000 people was used to determine the relative risk associated with having a dual diagnosis of mental illness and HIV/AIDS. Persons with a mental illness were 1.44 times more likely to have HIV/AIDS and women were at increased risk of being dually diagnosed. There were no risk differences by race. Those with a specific diagnosis of substance abuse or a depressive disorder were more likely to have a diagnosis of HIV/AIDS [411].

Another study looked at the relationship between psychosocial factors and health related quality of life among 287 HIV-positive women using items from the Medical Outcomes Study HIV Health Survey to measure physical functioning, mental health and overall quality of life. A history of child sexual abuse and adult abuse, social support and health promoting self-care behaviors were the psychosocial factors studied. Women in the sample were on average 33 years old and had known they were HIV-positive for 41 months; 39% had been hospitalized at least once due to their HIV; 83% had children; 19% had a main sex partner who was also HIV-positive. More than one-half of the women (55%) had a history of injection drug use and 63% reported having been physically or sexually assaulted at least once as an adult. A history of childhood sexual abuse, reported by 41% of the sample, was significantly related to mental health after controlling for sociodemographic and HIV-related characteristics. Women with larger social support networks reported better mental health and overall quality of life. Women who practiced more self-care behaviors (healthy diet and vitamins, adequate sleep and exercise, and stress management) reported better physical and mental health and overall quality of life. The high prevalence of physical abuse and child sexual abuse reported by this sample underscores the importance of screening for domestic violence when providing services to HIV-positive women. That such potentially modifiable factors as social support and self care behaviors are strongly associated with health-related quality of life suggests a new opportunity to improve the lives of women living with HIV[412].

In a related study researchers looked at the frequency of women's disclosure of their HIV status, and examined the extent to which they experience adverse social and physical consequences when others learn they are infected, and analyzes correlates of these negative outcomes. There were 257 HIV-positive women between the ages of 18 and 44, recruited from HIV/AIDS primary care clinics and from community sites, who completed a face-to-face interview. Women in the sample were 33 years old on average; 92% were African-American; 54% had less than 12 years of education; 56% had used intravenous drugs; and 30% knew they were HIV positive for 5 or more years. There were 97% who disclosed their HIV status; 64% told more than 5 people. Negative consequences associated with others knowing they were HIV-positive were reported by 44%, most commonly the loss of friends (24%), being insulted or sworn at (23%), and being rejected by family (21%). There were 10 women

(4%) who reported being physically or sexually assaulted as a result of their being HIV positive, and 16% reported having no one they could count on for money or a place to stay. Violence was widespread in this sample, with 62% having experienced physical or sexual violence, including sexual abuse or rape (27%), being beaten up (34%), and weapon-related violence (26%). Women with a history of physical and sexual violence were significantly more likely to experience negative social and physical consequences when their infection became known to others, adjusting for age and the number of people women had disclosed to, both of which were only marginally significant. The high rates of historical violence in the lives of women living with HIV underscore the need for routine screening and intervention for domestic violence in all settings that provide health care to HIV-positive women [413].

Another group of researchers looked at a group of incarcerated women and asked them about their HIV risk behaviors in the five years before incarceration. In a study of incarcerated women, investigators looked at the high-risk HIV behavior that the women had engaged in before being imprisoned. A majority of the women (56%) never or rarely used condoms, 42% admitted to injection drug use, 42% had sexual intercourse with a partner who used injection drugs, 30% admitted to prostitution, 30% to needle sharing, 19% to receptive anal sex, and 7% had more than 100 sexual partners. The rates of PTSD, depression and dysthymic disorder were high among this population and the lifetime occurrence of PTSD was associated with the practice of anal sex and prostitution and the disorder may contribute to high rates of risky sexual behavior [414].

Injury Risk, Substance Abuse, and Violence

Although injuries are the number one cause of death for women under age 45 years in the United States, very little is known about nonfatal injuries to women, particularly those from urban, black communities. The Philadelphia Injury Prevention Program is a surveillance system of fatal and nonfatal injuries in a poor, urban, black community in Philadelphia, Pennsylvania. Nearly 10% of the estimated population of 31,032 women aged 15 years and older suffered an injury resulting in an emergency room visit or death during the 1-year study period from March 1, 1987 through February 29, 1988. Violence was the leading cause of injury for women aged 15-44 years and the most common cause of injuries among women with two or more injuries during the 1-year period (16.8 per 1,000 population). Injury rates were highest for women aged 25-34 years: nearly 16% of the population in this age group suffered an injury resulting in an emergency room visit or death during the 1-year study period [415].

Substance abusers are at high risk for many different forms of injury. Alcohol and drug abusers were almost four times as likely to be hospitalized for

an injury in a 3-year period when compared with controls. Injury risks are elevated substantially more for female than male substance abusers [416]. One study looked at injury risk related to substance abuse in three emergency departments in one inner-city community (in west Philadelphia). Of the women, 405 adolescent girls and women had been intentionally injured and 520 adolescent girls and women (control subjects) had health problems not related to violent injury. Male partners of the injured women were much more likely than the male partners of control subjects to use cocaine and to have been arrested in the past [417].

It is recognized that women at greatest risk for injury from domestic violence include those with male partners who: abuse alcohol or use drugs, are unemployed or intermittently employed, have less than a high-school-graduate's education, are former husbands, estranged husbands, or former boyfriends of the women [418]. These injuries can present in a number of different ways and women victimized by domestic partners will be seen by a variety of different medical specialists. A retrospective review of women presenting in the emergency department of a Philadelphia ophthalmology department demonstrated that 23% of the women were victims of domestic violence and another 77% were suspected of being domestic violence cases. Only 6% of the cases involved substance abuse on the part of the woman [419].

A study of 169 trauma cases and demonstrated that 65-70% of fatal car crashes due to ETOH, 47.9% of the cases were related to violent crime, and 74.5% tested positive for illicit or prescription drugs in their blood. Of those: cocaine (54.4%), cannabinoids (37.2%), barbiturates (7.1%), amphetamines (4.7%), benzodiazepines (10.1%), opiates (9%), and codeine (1%) and 35.5% tested positive for alcohol. Alcohol was found in 6.2% of violent crime-related cases while illicit drugs were found in 80.3% of violent crime-related cases [420]. In a study of firearm deaths, the trends in firearm violence and victims during a 5-year period, between 1985 and 1990, in the city of Philadelphia were examined. There were 145 firearm homicide victims in 1985 versus 324 in 1990, a 123% increase. This was primarily because of deaths among young (age 15-24 years), black male victims. Ante mortem drug use and criminal history was common. A total of 54% of victims were intoxicated in 1985 and 61% were in 1990. Cocaine became the most common intoxicant in 1990, with 39% of victims using it before death. The percentage of victims with a criminal record increased from 44% to 67%. Although the duration of criminal history decreased from 14 to 6 years, the number of patients with previous drug offenses increased from 33% to 84% [421].

In another study, 100 patients who had undergone trauma surgery for intentional and unintentional injury, were interviewed while hospitalized and again one year later. The investigation achieved a 73% 1-year follow-up rate. One year after injury, 30% of patients met symptomatic criteria for PTSD and

25% had Alcohol Use Disorder Identification Test scores indicative of problem drinking. Patients with PTSD demonstrated significant adverse outcomes in 7 of the 8 domains of the Medical Outcomes Study 36-Item Short-Form Health Survey compared with patients without PTSD. After adjusting for injury severity, chronic medical conditions, age, sex, pre-injury physical function, and alcohol use, PTSD remained the strongest predictor of an adverse outcome. Patients with problem drinking did not demonstrate clinically or statistically significant functional impairment compared with patients without problem drinking [422].

Some trauma surgeons are beginning to grapple with this association between compromised recovery and PTSD. One recent paper directed at plastic surgeons recommends a post-injury evaluation (within 10 days of the trauma) consisting of 11 questions to determine the presence of the following risk factors for post-trauma maladjustment: panic during or immediately after the trauma, reexperiencing symptoms, avoidance, sleep disturbance, injury from an assault, previous trauma and psychiatric history, and blaming someone else for the injury. Then, seven follow-up interview questions assess reexperiencing symptoms, avoidance, trauma-related phobias, depression, irritability, and increased substance use, all of which, if present, suggest psychological impairment. Questions recommended for the evaluation of younger children assess changes in play and recreational activity, sleep disturbance, night terror, aggression, irritability, avoidance, emergence of new fears, and loss of recently acquired developmental skills. The author assures the reader that the assessments require less than 2 minutes and are easily integrated into the hospital or clinic examinations of these patients [423].

Disclosure, Alexithymia and Health

Some studies have suggested that a repressive coping style, a coping style by which the person attempts to avoid feeling negative emotions, is bad for the health. Alexithymia is the word used to describe people who cannot identify or communicate emotions and is strongly correlated with the experience of overwhelming trauma and an association between childhood abuse and the development of alexithymia has become increasingly clear [424]. In a study of family factors related to alexithymia, the families of adults who scored high in alexithymia had difficulty identifying feelings and problems in dealing with strong feelings within the family, as well as difficulties with behavior control, and impaired problem-solving capacities [425].

Alexithymia is a syndrome manifesting affective, cognitive, and perceptual social defects, which include diminished affective-interpretive abilities. These abilities have been observed to be decreased in opiate abuse, major depression, and premenstrual depressive disorder, but increased in cocaine abuse and manic states. Conditions associated with decreased affective-interpretive abilities are

also associated with decreased central catecholamine levels. Conversely, conditions associated with increased interpretive abilities have increased central catecholamine levels. Central catecholamine may be hypothesized as an etiological factor in the development of alexithymia [426]. The emotional disturbance of substance abusers is often described as an inability to identify and express feelings coupled with an excess vulnerability to experience negative affect. Researchers designed a study to validate that description. They first defined components of alexithymia, hostility, and post-traumatic stress disorder (PTSD) derived from established measures of each. They found a strong association between a factor labeled Bottled-Up Emotions and another labeled Neurotic Hostility as well as an association between PTSD and Bottled-Up Emotions. The structure, magnitude, and intercorrelation of the latent variables did not depend on the type of psychoactive substance abused. These results support the view that features of alexithymia and hostility coexist in substance abusers and that this joint deficit is part of a broad disturbance across multiple psychological domains including pathological response to traumatic stress [427].

One study assessed self and interpersonal dysfunction as well as post-traumatic stress disorder (PTSD) among three groups of women: women sexually assaulted in both childhood and adulthood, women sexually assaulted only in adulthood and women who were never assaulted. Rates of PTSD were high and equivalent in the two assault groups. However, retraumatized women were more likely to be alexithymic, show dissociation scores indicating risk for dissociative disorders, and to have attempted suicide compared to the other two groups, who did not differ from each other. Additionally, only the retraumatized women experienced clinically significant levels of interpersonal problems. The findings suggest that formulations more inclusive than PTSD are required to capture the psychological difficulties experienced by this population. Treatment implications are discussed [428].

In another study, self-report alexithymia, depression, and anxiety inventories were completed by 204 (84 women and 120 men) psychoactive substance-dependent patients during their first week of hospitalization. Eighty-five of the 204 patients (41.7%) scored in the alexithymic range on the revised Toronto Alexithymia Scale (TAS-20). Women's average alexithymia, depression, and anxiety scores were higher than men's average scores. Ethnic (Hispanic whites vs. non-Hispanic whites) and diagnostic (alcohol vs. drug vs. mixed-substance dependence) group differences were not significant [429].

Alexithymia has been associated with a number of psychiatric problems, but it has been recognized for a long time that people who have psychosomatic illness often appear to have difficulty talking about their feelings and instead, seem to express their emotions through physical symptoms. The concept of alexithymia has provided one way of looking at this hypothetical connection. Alexithymia has been connected to impairments in the immune system leading to

cancer [430, 431]. In a study of gastrointestinal ulcers, alexithymia was associated with more severe symptoms [432] and several studies have noted the connection between alexithymia and inflammatory bowel disease [433, 434]. A connection between alexithymia and hypertension has also been established. In a study of over a hundred hypertensive people, 55% of them were alexithymic compared to 33% in a psychiatric group and 16% in a normal group [435]. As might be expected, people with alexithymia appear to have an increased utilization of the health care system [436, 437].

Pennebaker and his colleagues have provided some fairly convincing evidence that there is a relationship between the disclosure of traumatic events and subsequent health [438]. In one study, medical students who were asked to write about personal traumatic experiences and later were given hepatitis B injections showed a significant rise in antibody titres for up to six months after the writing experience compared to the control group [439, 440]. They also have conducted several experiments all of which indicate that verbally expressing traumatic experiences by writing or talking improves physical health, enhances immune function, and is associated with fewer medical visits [438, 441-453].

Health Effects Summarized

In summary, there is growing understanding of how violence and its effects can have long-term, detrimental effects on physical health that go far beyond the actual direct effects of violent injury. The immune system is vulnerable to even stress that is considered normal, much less to stress that is overwhelming, repeated, and unpredictable. Emotions affect health in a number of ways. We know that normal emotions bring about changes in immunity, and we are beginning to see the effects of unmodulated and extreme emotions on physical health. Negative emotions and depression have been shown to have a negative affect on immunity and exposure to violence certainly causes negative emotions and frequently, serious depressive states. Social support has been shown to be important for health and well being and even for staying alive, but traumatic experience ruptures social connection and damages relationships. Repressing, denying, being unable to talk about the traumatic experience appears to be damaging to one's health and the inability to talk about traumatic experiences, and sometimes to even remember the experiences, can be fatal.

VII. Parenting Consequences of Violence and Substance Abuse

Pregnancy, Substance Abuse and Violence

According to a recent report from the General Accounting Office of the U.S. Government, data on the number of pregnant women who are victims of violence, including violence that ends in homicide, are incomplete. There is no current national estimate of the prevalence of violence against pregnant women. At present, all that is available are some state and community-specific estimates [454].

For example, studies linking domestic violence and pregnancy indicate that of pregnant women seeking prenatal care, 23% are battered [455]. In a survey of pregnant low-income women, 65% of the women experienced either verbal abuse or physical violence during their pregnancies. Twenty percent of the women in the sample experienced moderate or severe violence [456].

In a study designed to look at the prevalence of preterm labor (PTL) under conditions of violence, researchers looked at a cohort of 636 pregnant women. The usual prevalence for (PTL) in prenatal populations has been estimated to be from 6.9 to 10.0%. In this cohort of women, serious acts of verbal abuse and physical violence occurred with significant frequency. PTL was strongly correlated with increasing acts of violence with 4.1 times greater risk of PTL in women who experienced severe violence as compared to those who experienced no maternal abuse [457].

Another study from Sweden looked at the prevalence of physical injuries, alcohol and tobacco use, abortions and miscarriages due to domestic violence during pregnancy and the compared socio-economic background factors between abused and non abused women. The most frequent targets for physical abuse were: the upper arm, the forearm, and the face and neck region. Ninety-five percent of women abused during pregnancy had been abused prior to the pregnancy. Notable was the finding that 4.3% of the pregnant women had been exposed to serious violence. Abused women were significantly younger and single, had lower income and education compared to the non- abused women. In the group of abused women a higher proportion of women had undergone one or more abortions than in the non-abused group. Smoking and alcohol use among partners were strongly correlated with physical and sexual abuse [458].

Another group of investigators used data from the North Carolina Center for Health Statistics/Centers of Disease Control and Prevention North Carolina Pregnancy Risk Assessment Monitoring System to look at the prevalence and patterns of physical abuse before, during, and after pregnancy. The prevalence

of abuse before pregnancy was 6.9%, compared with 6.1% during pregnancy, and 3.2% during a mean postpartum period of 3.6 months. Abuse during a previous period was strongly predictive of later abuse. Most women who were abused after pregnancy (77%) were injured, but only 23% received medical treatment for their injuries. Virtually all abused and non-abused women used well-baby care and in this sample private physicians were the most common source of care. The authors conclude from this that pediatric practices may be an important setting for screening women who are exposed to violence [459]

Another group of researchers wanted to look at the relationship between sexual abuse history, major depression in women in the postpartum period and child outcome. This particular study was the second and final phase of a 3-year follow-up study of women who had been admitted with a major depressive episode in the postpartum period, along with their children and partners where present. The effect of a maternal sexual abuse history on the women's well-being and child outcome compared to those women without such a history was assessed. Of forty-five mothers, 22 women had no history of sexual abuse, and 23 gave a history of childhood sexual abuse. Women with a history of sexual abuse rated higher depression and anxiety scores, and had greater life stresses. Their partners rated themselves as more comforting and their children as more disturbed. Over time, this group had failed to improve as much as the non-abuse group on these measures. There was no difference in child cognitive scores between groups. The investigators concluded that a history of sexual abuse in women who become depressed postpartum may have long term implications for the woman's mental health, her relationship with her child, as well as the emotional development of her child [460].

In a study of pregnant teens, 11.9% of the adolescents reported being physically assaulted by the fathers of their babies. Assaulted adolescents were significantly more likely than non-assaulted adolescents to have been exposed to other forms of violence over the same 12-month period, including verbal abuse, assault by family members, being in a fight where someone was badly hurt, reporting fear of being hurt by other teens, witnessing violence perpetrated on others, and carrying a weapon for protection. A history of nonconforming behavior and frequent or recent substance use was more common among both battered adolescents and their perpetrator partners. The age and race/ethnicity of the pregnant adolescent and the length of her relationship with the father of her baby were not associated with assault status. [461]

Substance abuse, both of alcohol and illicit drugs, has been found as a substantiated correlate of abuse during pregnancy in several studies. Substance abuse is a frequent manifestation of PTSD in pregnant and non-pregnant battered women [32]. Pregnant substance-abusing women with PTSD had higher likelihood of: ectopic pregnancy, spontaneous abortion, hyperemesis, preterm contractions, excessive fetal growth [462]. Investigators reviewed 6828 live

births over an 18-month period and found there was an 11% incidence of positive drug screens in consenting pregnant trauma victims and a 21% incidence of preterm birth [463].

Some research has found that a high frequency of maternal cocaine use during pregnancy is associated with poorer infant neurobehavioral outcome beyond the early postpartum period, when other substance use is controlled [464]. However, a study that did an extensive review of the literature on this topic found that after controlling for confounders, there was no consistent negative association between prenatal exposure to cocaine and physical growth, developmental test score, or language performance [465].

A predominantly white, suburban, indigent population of pregnant women were followed up to determine the incidence of domestic violence and its effect on preterm delivery, low birth weight, and outcome of pregnancy (infant admission to the neonatal intensive care unit). A total of 489 pregnant women were screened for domestic violence and drug and alcohol abuse. Patients were assigned to the control group if they had no substance abuse and no domestic violence and to the study group if they had no substance abuse but were victims of domestic violence. Of the total study population, 20% were victims of domestic violence. Among patients suffering domestic violence, 22% had preterm deliveries as compared with 9% of patients without domestic violence. Sixteen percent of patients in the study group had low-birth-weight babies compared with 6% of women in the control group. No significant relationship was found between domestic violence and admission to the neonatal intensive care unit. The authors conclude that domestic violence is a risk factor for preterm delivery and low-birth-weight infants [466].

In another study, 96 low-income pregnant women in a residential substance abuse treatment program were evaluated in order to (a) to document the prevalence of exposure to violent trauma, (b) to examine the prevalence of post-traumatic stress symptomatology, and (c) to assess if trauma exposure and post-traumatic stress were related to program completion. This population had high rates of exposure to violent trauma: 72% had experienced sexual assault, 67% had experienced physical assault, and 68% had experienced indirect violent trauma. High rates of traumatic stress were found in the study population: 62% displayed symptoms consistent with post-traumatic stress disorder. Traumatic stress, but not trauma exposure, was related to program completion [467].

Another study compared psychiatric and psychosocial functioning in 123 pregnant opiate- and/or cocaine-dependent women with and without a comorbid diagnosis of post-traumatic stress disorder (PTSD). The lifetime diagnostic prevalence of PTSD was 19%. Participants with PTSD reported: greater need for psychiatric treatment, were more likely to report a previous suicide attempt, and had more previous drug treatments than participants without PTSD. Women with

PTSD were twice as likely to have lifetime Axis I and Axis II disorders and had higher rates of abuse than women without PTSD. Lifetime sexual abuse and ASI family/social composite scores were significant predictors of PTSD. These findings suggested that pregnant drug-dependent women with comorbid PTSD may benefit from specialized treatment services for trauma and/or abuse issues [468].

A study reviewed the cases of 445 Medicaid-eligible pregnant women who received treatment in Massachusetts between 1992 and 1997. Five treatment modalities--residential, outpatient, residential/outpatient, methadone and detoxification-only were identified. Results showed a near linear relationship between birth weight and amount of treatment received. The residential/outpatient group delivered infants who were 190 grams heavier than those who received the least treatment (the detoxification-only group) for an additional cost of \$17,211. Outpatient programs were the most cost-effective option, increasing birth weight by 139 grams over detoxification-only for an investment of only \$1,788 in additional health care and treatment costs. Increases in birth weight were due primarily to improved nutrition and reduced drug use, behaviors which are perhaps more easily influenced in residential settings [469].

This study compared the characteristics of 4,117 women treated in publicly funded residential drug treatment programs in Los Angeles County between 1987 and 1994 by pregnancy status and program gender composition, that is, women-only and mixed-gender programs. Women in women-only programs were more likely than women in mixed-gender programs to be pregnant, homeless, or on probation; to use methamphetamines; to use alcohol; and have prior drug treatment. Pregnant women were younger, more likely to be homeless, had fewer years of drug use, were more often referred by other service providers, and were less likely to have injected drugs or have prior drug treatment than non-pregnant women. Although women in women-only programs had more problems, they spent more time in treatment and were more than twice as likely to complete treatment as compared with women in mixed-gender programs.[470]

The Family Rehabilitation Program (FRP) is a unique network of community-based programs in New York City that provides comprehensive services to families with drug-dependent parents, most caring for prenatally cocaine-exposed newborns. In an outcome study, an admission sample of 173 mothers in 17 FRP sites was studied for one year; substance use was assessed by hair analysis and self-report. The mean length of retention of patients was 10 months; half the clients were still active in the program at follow-up. Mothers completing or who were still active in FRP had higher rates of abstinence and substantially lower average levels of cocaine in their hair at follow-up than those exiting prematurely. The percent of families with children out of their homes did

not increase significantly between admission and follow-up, and completing or remaining active in the program were associated with less out-of-home placement at follow-up [471]

Using data from a consecutive sample of approximately 700 prenatal patients aged 12 to 19, the extent of violence and substance use in the lives of these women was examined, as were associations between violence and substance use. The findings show that 29% of the study participants had been victims of violence, with 15% experiencing physical violence only, 5% sexual violence only, and 9% both physical and sexual violence. Victims were more likely than non-victims to use cigarettes, alcohol, and illicit drugs, with victims of both physical and sexual violence being the most likely to use each type of substance. Compared to non-victims, violence victims were more likely to have more severe patterns of substance use (use multiple types of substances), with victims of both physical and sexual violence being the most likely to be multiple substance users [472].

Service delivery to this high risk population is a problem. A project conducted a national survey using a provider group with experience in caring for the pregnant, substance abusing population, the member universe of the National Association of Public Hospitals and Health Systems. The survey requested detailed information on hospital system information, current managed-care arrangements, outcome measurements, financing, service priorities, and service availability. The 81% response rate identified 35 hospital systems providing services to an average of 998 women in 1997. The majority of these systems (69%) reported coordinating care for these patients, but only 26% reported they computerize patient charts. Most use at least one indicator to measure effectiveness, and 50% use at least four. Counseling/education and transportation were seen as key support services, but many acknowledge they are not reimbursed for critical services such as nutrition education [473].

An excellent article sums up the relationship between substance abuse, pregnancy, and exposure to violence. What emerges from a review of the studies done thus far is that common perceptions of substance abuse as a problem of poor, ethnic minority, and young individuals is inaccurate and that this perception may all too often be acted on by medical providers in a prejudicial manner. These studies show similar rates of substance use during pregnancy by women of different racial, social class, and age categories. Demographic features are only related to type of substance used, with black women and poorer women more likely to use illicit substances, particularly cocaine, and white women and better educated women more likely to use alcohol, the substance whose teratogenic effects have been most clearly documented. The authors assert that despite the even distribution of substance use across demographic categories, poor women and women of color are far more likely to be reported to health and child welfare authorities for use of substances during pregnancy than are other

women, even when their base rates for use of illicit drugs are considered. They make it clear that data from both epidemiologic studies and samples of women seeking treatment for substance abuse problems indicate that the lives of substance-abusing women are fraught with difficulties past and present. Substance-abusing women are likely to have been raised by parents who were substance abusers, particularly alcoholics. Although the intergenerational patterns of substance abuse may have some genetic basis, there is also ample evidence suggesting problematic relationships in families with a substance-abusing parent that raises concerns about intergenerational transmission of problematic parenting behavior. The authors point out that perhaps the most startling research finding reported in studies reviewed in their article is the high proportion of substance-abusing women who have experienced early sexual abuse. Although most studies have not had adequate comparison groups of non-substance-abusing women, the fact remains that most studies suggest a third to a half of substance abusing women experienced some kind of sexual abuse during childhood. Substance-abusing women's lives remain complicated as adults. They are commonly involved with men who are also users of drugs, they are often the victims of domestic violence, and they suffer from a variety of psychiatric disorders. Studies of epidemiologic and treatment populations indicate that the majority of substance-abusing women have one or more types of comorbid mental disorders, with depression being the most common and the most elevated compared with substance-abusing men, but antisocial personality being extremely high compared with samples of non-substance-abusing women [300].

A study examined the treatment, including maternal and infant outcomes of pregnant adolescents (16-19 years) enrolled in an adult perinatal chemical dependency treatment program. Twenty-one adolescent subjects were compared to 323 adult women (mean age, 27.4 years) after enrollment into a randomized treatment trial consisting of intensive outpatient or short-term residential conditions. The results show a similar treatment retention rate. Adolescents differed from adult women on marital status, drugs of choice (alcohol, marijuana vs. opiates and cocaine) and method of administration, with no injection drug users in the adolescent cohort. Obstetric, maternal, and infant outcomes up to 1 year were comparable. The authors concluded from their findings that older adolescents who are chemically dependent and pregnant have treatment needs similar to adult women and can benefit from programs designed to treat older women. Recruitment difficulties for adolescents in need of treatment is discussed [474].

Providers in prenatal care settings are well positioned to help pregnant women with substance abuse problems take the first steps toward recovery. This study reports the results of the ANGELS Program, a program of enhanced prenatal care designed to reduce substance use among pregnant women. In a

suburban office serving a broad range of pregnant women, certified nurse-midwives (CNMs) and on-site addictions counselors addressed substance abuse during prenatal care. This paper describes a cohort of 77 pregnant women who were identified as abusers of alcohol and/or other drugs at the start of pregnancy. According to a level of change rating assigned by the CNM at delivery, 51% of women were able to be largely abstinent during their pregnancy, 35% had reduced their use somewhat, and 14% had shown no change in use. Baseline variables that differentiated the groups included severity of cocaine and cannabis use, psychosocial stressors, and initiation of prenatal care. Significant process variables included number of prenatal visits and contact with the addictions counselors [475].

Substance Abuse, Mental Disorders and Parenting

About 8.3 million U.S. children presently live with one or more substance-abusing parents, almost a million of them are under two years of age [476]. Of all births in the United States each year, it has been estimated that about 221,000 of the infants (5.5%) are born prenatally exposed to illicit drugs and that 140,000 pregnant women (3.5% of all pregnant women) drink heavily, exposing their children to risk of fetal alcohol effects in utero [477, 478].

It has been stated that substance abuse and addiction are the primary causes for the dramatic rise in child abuse and neglect and have also caused an immeasurable increase in the complexity of cases since the mid-1980s. Substance abuse causes or exacerbates 7 out of 10 cases of child abuse and neglect. Children whose parents abuse drugs and alcohol are almost three times likelier to be abused and more than four times likelier to be neglected than children of parents who are not substance abusers. In 1985, there were 798 reported child deaths from abuse and neglect; in 1996, 1,185 were reported but the U.S. Advisory Board on Child Abuse and Neglect sets the actual number in 1995 at 2,000 – more than five deaths a day. Four out of five (78%) of the children killed were under age five and 38% under age one.

Studies of child welfare caseloads have variously found the proportion of physical child abuse and neglect cases involving substance abuse ranging from 13% to over 70% [479]. Child protective service systems across the U.S. have increasingly identified substance abuse as one of the top two problems exhibited by families reported for maltreatment, from 76% in 1994 to 85% in 1998 [480]. More than 40% of all child abuse reports involved substance-exposed infants [481].

There are known to be 28 million children of alcoholics in United States. A study was designed to compare problem-drinking parents on child health, child-parent relationships, treatment and drinking and parental adaptation.

Researchers report that the risk for serious learning and behavior problems is greater among offspring of alcoholic mothers than among offspring of alcoholic fathers and that the children of women who were problem drinkers, but not children of problem-drinking men, had elevated risk of serious injury. Women are more likely to be primary caretakers of children, their drinking may be more socially stigmatizing, and in women drinking is more likely associated with depression, another serious risk factor for problems in children. When children had health problems, mothers had more severe drinking problems, especially alcohol dependence. More satisfying child-parent relationships were consistently related to better drinking and psychological outcomes for mothers. Positive mother-child relationships contributed substantially to mothers' personal adjustment and generally there were fewer associations between child functioning and fathers' adaptation than between child functioning and mothers' adaptation. The authors noted a vicious cycle in which maternal drinking and children's dysfunction coexist in every-worsening reciprocal relationship and that dealing with a child's ill health and a stressful mothering relationship may increase drinking in mother and then the mother's drinking may be associated with more child injuries and psychosocial problems. When children and child-mother dyads continue to function well or improve, despite mother's drinking, this change for the better may be an important contributor to maternal recovery [482].

In one study, investigators looked at the relationships among traumatic childhood experiences, adult functioning, and parenting outcomes. Children under three years of age were recruited into the study if their mothers met one or more of the following risk criteria: current or past substance abuse, history of incarceration, children in out-of-home placement, HIV-positive, domestic violence, late or no prenatal care. The sample consisted of 127 African-American mothers, all of whom were receiving some type of public assistance, usually TANF. Most of the mothers were single (86.6%) with an average age of 27. Approximately one-third of the women had completed 12 or more years of education. Nearly half had 2-3 children, whereas 16% had one child and 36% had four or more children. Just over half of the mothers lived with their own parent, other family members, or a partner; 28% lived in their own house or apartment. Over half of the women (53.5%) reported incidents of physical or sexual abuse in childhood. Physical abuse alone was reported by 15.7% and sexual abuse, with or without physical abuse, was reported by 37.8% of the women. The perpetrator in cases of sexual abuse was most often a male family member. Well over half (59.1%) of the mothers reported current or past use of alcohol or other drugs to intoxication at least three times a week for a period of one month or more, which classified them as heavy users. There was a significant relationship between maternal age and heavy substance use, with older mothers reporting higher levels of use. There was no relationship between number of children and heavy substance use. Three quarters of the women who

reported experiences of sexual abuse in childhood also reported heavy substance use in their history. Approximately half of those who had experienced physical abuse alone or no abuse also reported heavy drug use. The difference in the incidence of heavy drug use between sexually abused women and the other two groups was statistically significant. Severity of substance use was not correlated with current parenting attitudes, maternal psychological functioning, or social support. Half of the mothers in the sample had at least one child in out-of-home placement, including placement with other family members. Over half (60%) of the women reporting a history of childhood sexual abuse had at least one child in out-of-home placement. This also was true for 55% of those who reported physical abuse alone, while 39% of the mothers who did not experience either form of childhood abuse had a child in out-of-home placement. The authors conclude that childhood sexual trauma and age were correlated with severity of adult drug use, that women with a history of physical or sexual abuse were significantly more likely to report symptoms of psychological distress than were women with no childhood experiences of abuse, and that severity of addiction was highly correlated with child placement. At the same time, an unexpected finding was that women who had experienced sexual abuse scored significantly better on the parenting scale, largely through more favorable scores on the empathy and role reversal subscales. These findings may indicate that the trauma of sexual abuse creates greater empathy with children and a clearer demarcation between the role of child and parent [483].

The lead author of this study had also done previous work evaluating women who had children placed out-of-home and then experienced reunification with their children. These mothers recognized that the harmful effects of substance abuse on their children but felt powerless to do any better in the face of their addiction. They mourned the loss of their children to placement, but felt it was necessary to adequately protect and provide for their children. This separation was also a primary motivation for them to get treatment. The authors encourage child welfare agencies and substance abuse treatment programs to develop a flexible array of services as they move through recovery [483]

In another study, 54 mothers who had maltreated their children were compared with 37 mothers who had not maltreated their children. The maltreatment group showed a significantly greater incidence of both current and past diagnoses of mood disorders, alcohol abuse, and personality disorder than did controls. Past abuse of cocaine, alcohol, other substances and past mood disorders were significantly more prevalent among the maltreatment sample than among controls. Consistent with the known connections between substance abuse and exposure to violence, mothers who had maltreated their children were also significantly more likely to have histories of post-traumatic stress disorder than were controls [484].

In a study of 152 mother/infant dyads assessed for disruption of primary care giving or neglect during the first 18 months of life, defined by mother's inability to provide care, 43.4% infants had disruption in their primary care during the first 18 months of their life. However, 56.6% remained in the care of their mothers. Women who were younger, were heroin users, had two or more children, had other children in foster care, and reported depressive symptoms were least likely to provide ongoing primary care for their infant [176].

A study looking at the risks for poor parenting measured nine factors when infants were 18 months old including: violence, depression, homelessness, incarceration, number of children, life stress, psychiatric problems, and absence of a significant other. Mothers in the high-risk group had significantly worse scores on parenting attitude scales [485].

In a study looking at the connection between child maltreatment and major mental illness, forty-four mothers who had a major psychiatric disorder were independently rated for: their insight into their illness, the quality of mother-child interaction, and overall clinical risk of maltreatment. Better insight into mental illness was associated with: more sensitive mothering behavior and lower assessed clinical risk of maltreatment [486].

The National Center of Addiction and Substance Abuse at Columbia University did a comprehensive analysis of the impact of substance abuse on child abuse and neglect. They did a national survey of professionals who work in child welfare agencies or family courts and uncovered some key findings: almost 75% cite substance abuse as one of the top three causes for the dramatic rise in child maltreatment since 1986, followed by better reporting of child maltreatment (35%) and poverty (32%). Most of the respondents (80%) reported that substance abuse causes or contributes to at least half of all cases of child maltreatment and 40% say it is a factor in 75% of the cases. Almost all respondents said that parents who abuse or neglect their children most commonly abuse a combination of alcohol and drugs, and overall 89% recognized alcohol as a leading substance of abuse among parents. Almost half of all case workers said that they are not required to record the presence of substance abuse when investigating child maltreatment or do not know whether they are required to do so [487]. The authors of the study drew several important conclusions: a) substance abuse and addiction severely compromise or destroy the ability of parents to provide a safe and nurturing home for a child; b) substance abuse and addiction confound the child welfare system's ability to protect children; c) timely and comprehensive treatment can work for substance-abusing parents, and such treatment is cost effective; d) only a major overhaul of the child welfare practice can make real progress against the formidable problem.

When researchers looked at the rate of PTSD among maltreated children and their mothers, post-traumatic stress disorder was significantly over represented in the children of mothers diagnosed with PTSD. The onset of maltreatment was significantly earlier among children whose mothers meet PTSD criteria than among other maltreated children [214]. These findings among mothers have been supported by findings of impaired parenting skills in fathers as well. In a sample of 1,200 male Vietnam veterans and 376 of their partners, male veterans with current PTSD showed markedly elevated levels of severe and diffuse problems in marital and family adjustment, in parenting skills, and in violent behavior [488]. It is hypothesized that part of the problem for these parents is the prolonged hyperarousal that accompanies stress in those previously exposed to trauma. In laboratory experiments comparing the effects of stressors on mothers with a history of maltreatment and those without such a history, the mothers who had been physically abused in childhood tended to get more aroused and stay aroused longer than mothers in the control group after even a relatively mild stressor [488, 489].

The purpose of another study was to determine the lifetime incidence of mental disorders in caregivers involved in maltreatment and in their maltreated child. Lifetime DSM-III-R and IV psychiatric diagnoses were obtained for 53 maltreating families, including at least one primary caregiver and one maltreated child or adolescent subject (28 males, 25 females), and for a comparison group of 46 sociodemographically, similar non-maltreating families, including one healthy child and adolescent subject (22 males, 22 females). Mothers of maltreated children exhibited a significantly greater lifetime incidence of anxiety disorders (especially post-traumatic stress disorder), mood disorders, alcohol and/or substance abuse or dependence disorder, suicide attempts, and comorbidity of two or more psychiatric disorders, compared to control mothers. Natural fathers or mothers' live-in mates involved in maltreatment exhibited a significantly greater lifetime incidence of an alcohol and/or substance abuse or dependence disorder compared to controls. The majority of maltreated children and adolescents reported anxiety disorders, especially post-traumatic stress disorder (from witnessing domestic violence and/or sexual abuse), mood disorders, suicidal ideation and attempts, and disruptive disorders. Most maltreated children (72%) suffered from comorbidity involving both emotional and behavioral regulation disorders [490].

Mothers with a history of child sexual abuse were significantly more anxious about intimate aspects of parenting than the comparison group. They also reported significantly more overall stress as parents. The index group recalled that their own parents were significantly less caring and that their fathers were more controlling than the comparison group. Mothers with a history of child sexual abuse who attend mental health services are often worried that their normal parenting behaviors may be inappropriate or seen as such by other

people. These anxieties seem associated with their history of childhood sexual abuse [491].

Girls whose mothers were sexually abused were 3.6 times more likely to be sexually victimized. Maternal sexual abuse history combined with maternal drug use placed daughters at the most elevated risk. Maternal sexual abuse history indicates a strong potential for the intergenerational transmission of child sexual abuse [492]. Another study examined characteristics of mothers of boys who sexually abuse. Depression, child abuse histories, and current attributions were investigated for 80 mothers of boys in three abuse referral groups-victimized perpetrators, non-victimized perpetrators, and victim only-in comparison with a group of boys showing externalizing behaviors. Sexual victimization in their own childhood was reported by 55% of mothers of perpetrators and 30% of mothers of victims. High rates of spouse abuse were reported by both mothers of perpetrators (72%) and mothers of victims (50%) [493].

Lest we focus too much on the mother as the abusive parent, other studies have supported the close connection between child abuse and domestic violence. In one study of abused children, 59.4% of the mothers were considered to be highly suggestive of current or previous victimization. The rate of violence against single mothers of child abuse victims was four times the rate of those who were married [494]. In fact, in homes where domestic violence occurs, children are at 1500% greater risk of child abuse than the national average [64].

As noted earlier in the studies of comorbidity, there is a clear connection between the development of borderline personality disorder and exposure to child maltreatment. Then, when mothers with borderline personality disorder become parents, as compared with controls, they have more psychiatric diagnoses, more impulse control disorders, a higher frequency of evolving borderline personality disorder in their children and lower Child Global Assessment Schedule scores [495].

Overt abuse is not necessary to produce detrimental effects on children. Lack of maternal care has been associated with a four-fold increase in risk for developing major depression as an adult [496, 497]. When comparing depressed mothers to abusive mothers, depressed and abusive mothers both expressed inconsistency, hostility, and protectiveness and both groups used anxiety and guilt inducing methods but only abusive mothers used them in conjunction with harsh authoritarian practices [498].

Intergenerational Transmission of Abuse

Unfortunately the public health legacy of child abuse does not stop in childhood. The intergenerational transmission of abusive child-rearing behavior has also been well documented among populations who have been abused and neglected in childhood [499-502]. According to a review of over sixty studies from the United Kingdom and the United States, roughly one-third of child victims grow up to continue a pattern of seriously inept, neglectful, or abusive rearing as parents. One-third of parents do not. The other one-third remain vulnerable to the effects of social stress on the likelihood of their becoming abusive parents [502]. There is controversy, however about these findings. A study reviewed all the previous studies and found methodological problems in many of them. The one study that met all eight of their methodological standards provided evidence for the intergenerational continuity of child physical abuse, but that which met six standards did not support the hypothesis [503].

Abused mothers who were able to break the abusive cycle were significantly more likely to have received emotional support from a non-abusive adult during childhood, were more likely to have participated in therapy during some period of their lives, and more likely to have had a non-abusive and more stable, emotionally supportive, and satisfying relationship with a mate. Abused mothers who re-enacted their maltreatment with their own children experienced significantly more life stress and were more anxious, dependent, immature, and depressed [504]. Research has found that women who continued the cycle of child abuse reenacted their own abuse, identified with their abuser or with a non-protective parent, had poor attachment with their own parents, used dissociation or other defensive behaviors to protect themselves from memories of their abuse, and had not been able to discuss their abuse to a supportive person [505].

It is important to figure out which mothers break the cycle of abuse and distinguish them from mothers who were abused as children and who also abused their own children. Based on maternal interviews and questionnaires completed over a 64-month period, measures of mothers' past and current relationship experiences, stressful life events, and personality characteristics were obtained. Abused mothers who were able to break the abusive cycle were significantly more likely to have received emotional support from a non-abusive adult during childhood, to have participated in therapy during any period of their lives, and to have had a non-abusive and more stable, emotionally supportive, and satisfying relationship with a mate. Abused mothers who reenacted their maltreatment with their own children experienced significantly more life stress and were more anxious, dependent, immature, and depressed [504]

Substance-abusing women are likely to have been raised by parents who were substance abusers, particularly alcoholics. Although the intergenerational

patterns of substance abuse may have some genetic basis, there is also ample evidence suggesting problematic relationships in families with a substance-abusing parent that raises concerns about intergenerational transmission of problematic parenting behavior. Substance abusers who are mothers have a number of risk factors for further problems: a high proportion of substance-abusing women have experienced early sexual abuse; they are commonly involved with men who are also users of drugs; they are often the victims of domestic violence, and they suffer from a variety of psychiatric disorders. All of these pathways can increase the risk for dysfunctional family patterns in the next generation [506]

Investigators wanted to examine the relation between exposure to childhood punitive discipline, how adults perceive their punitive childhood history, and adult attitudes regarding appropriate discipline. They asked a total of 1,359 university undergraduates to complete a screening questionnaire to assess their childhood disciplinary histories and their perceptions of that history. A sample of 207 of the screened participants who reported a diverse range of childhood disciplinary histories participated in a second test session to assess attitudes regarding appropriate discipline. Among persons with severely punitive histories, those who did not label themselves as abused were less likely to classify events as physically abusive than those who labeled themselves abused. Persons with less severe punishment histories were comparable to those with severely punitive histories who also labeled themselves abused. Additionally, persons who had experienced a specific form of physical discipline as a child were less likely to label that form of discipline abusive. However, this effect of experience did not hold among subjects who described a history of discipline-produced injury [507]. In another study, mothers who were physically abused as children attributed more negative characteristics to their memories of the past, others, and themselves and their attachments to their infants was less secure [508]. In another study, physically abusive and non-abusive mothers were studied for differences in perceptions of the parenting role and of child behavior problems. Findings suggested systematic differences in attributional style of the abusive mothers, supporting the hypothesis that such mothers are hyper-reactive to their children's misbehavior. These mothers also tended to minimize both their own contribution to negative parent-child interactions and their children's role in positive ones [509].

The role of attachment in understanding abusive and non-abusive behavior has become increasingly important. Studies consistently have shown that substance-abusing mothers have disturbed attachment patterns with their children. When under the influence of substances, or when coming down from substance intoxication, the mothers are unresponsive to their infant's attachment behaviors. In studying mothers and their children attachment researchers have noted that a mother's apparent experience of her own mother as rejecting is

systematically related to her rejection of her own infant as observed in the laboratory and at the same time to systematic distortions in her own cognitive processes. These distortions, such as idealization of the rejecting parent, difficulty in remembering childhood and an incoherence in discussing attachment, are each significantly related to the mother's rejection of her own infant. The authors conclude that distortions in representation of an abusing parent may play a positive role in the perpetuation of child abuse [510].

Marked differences have been noted in the ability of physically abusive and non-abusive mothers to be sensitive to the moods and signals of their children [511]. Abusive mothers spent less time looking at their children, were less focused in their attention on them, barraged them with words and actions that were unaffected by the child's response, were physically coercive, and spent more time issuing directives and orders than mothers from similar backgrounds who do not abuse their children. In another study looking at the ability of abusive mothers to read their infants emotional states, abusive mothers were more likely than the comparison group to incorrectly identify specific emotion signals and to label negative emotion as positive [512]. In a study in which abusive and non-abusive mothers were evaluated on their ability to respond empathically to a crying child, the high-risk mothers were less empathic and more hostile in response to a crying child. The authors concluded that their findings support aggression models of child abuse which suggest that the lack of empathy and the presence of negative emotion precede abusive behavior and that high-risk parents are more susceptible to the emotional contagion effects of a distressed child, since they are more likely than the low-risk parents to actually experience the same distressed emotion as the child while being unable to respond empathically to the child [513].

Although this physiological arousal is probably part of the explanation for these detrimental parenting effects, cognition is also involved. Mothers who were physically abused as children attributed more negative characteristics to their memories of the past, others, and themselves and their attachments to their infants was less secure [508]. Physically abusive and non-abusive mothers were also studied for differences in perceptions of the parenting role and of child behavior problems. Findings suggested systematic differences in attributional style of the abusive mothers, supporting the hypothesis that such mothers are hyperreactive to their children's misbehavior. These mothers also tended to minimize both their own contribution to negative parent-child interactions and their children's role in positive ones [509].

Dissociation is a frequent response to trauma, particularly childhood trauma, causing a potentially serious cognitive and emotional split, while buffering the central nervous system. Some have hypothesized that dissociation is the psychological mechanism that accounts for the transmission of maltreatment across generations. To investigate this, a group of mothers who

were abused and maltreated their children were compared to a group of mothers who broke the cycle of abuse. Mothers who were abused and are abusing their children were rated higher on idealization, inconsistency, and escapism in their description of their childhood and they scored higher on the Dissociative Experience Scale compared to mothers who broke the cycle. Mothers who were abused and abused their children recalled the care they received as children in a fragmented and disconnected fashion whereas those who broke the cycle integrated their abusive experience into a more coherent view of self. Even after partialing out the effects of IQ, large differences were found indicating that dissociative process plays a part in the transmission of maltreatment across generations [499].

In another study, a group of 54 dissociative inpatient or day-patient mothers, 20 non-dissociative inpatient mothers, and 20 hospital staff mothers were screened for Dissociative Disorders using the Structured Clinical Interview for Dissociative Disorders. They were then asked to fill out a self-report questionnaire on various aspects of mothering. This questionnaire, the Subjective Experiences of Parenting Scale (SEPS), examined 14 parenting characteristics: parenting partner support; relative support; abusiveness towards the child; extent to which symptoms interfered with parenting; constructive parenting traits; supportive versus hurtful discipline; extent of showing affection; ability to express affection; attachment behaviors; cognitive distortions; regulation of anger; self versus mother in parenting; subjective experience of mothering; and actions to promote the developmental growth of the child. Mothers with dissociative disorders presented significantly more negative parenting behavior and related attributes than staff controls on 13 of the 14 parenting characteristics. Compared to non-dissociative patients, the dissociative patients presented poorer parenting behavior and related attributes on 9 of the 14 characteristics. Overall, the dissociative patients experienced more problems with parenting attitudes and behaviors than either comparison group [514].

Having a parent who has PTSD may be an enormous problem for children even as adults. Multigenerational transmission is being studied in the offspring of Holocaust survivors. Investigators examined the prevalence of stress and exposure to trauma, current and lifetime post-traumatic stress disorder (PTSD), and other psychiatric diagnoses in a group of adult offspring of Holocaust survivors and a demographically similar comparison group. Although adult offspring of Holocaust survivors did not experience more traumatic events, they had a greater prevalence of current and lifetime PTSD and other psychiatric diagnoses than the demographically similar comparison subjects. This was true in both community and clinical subjects. The authors concluded that there is an increased vulnerability to PTSD and other psychiatric disorders among offspring of Holocaust survivors, thus identifying adult offspring as a possible high-risk group within which to explore the individual differences that constitute risk

factors for PTSD [515]. To establish a biological link, investigators looked at variables in relation to 24-hr urinary cortisol levels in 51 adult children of Holocaust survivors and 41 comparison subjects. Adult offspring of Holocaust survivors showed significantly higher levels of self-reported childhood trauma, particularly emotional abuse and neglect relative to the comparison subjects. The difference was largely attributable to parental PTSD. Self-reported childhood trauma was also related to severity of PTSD in subjects, and emotional abuse was significantly associated with 24-hr mean urinary cortisol secretion. The authors conclude that the experience of childhood trauma may be an important factor in the transmission of PTSD from parent to child [516].

A study was designed in which the association between a parent's history of abuse and the parent's own abusive behavior toward his or her children was hypothesized to be mediated by parental psychopathology, early childbearing, and consistency of discipline. Participants in the study were 109 parents (G1) and their male children (G2) who were involved in a longitudinal study. The G1 parents reported on their own experiences of abuse when they were children. Ten years later, the G2 youths reported on the G1 parents' abusive behavior toward them. A number of other factors, including parental socioeconomic status (SES), antisocial behavior, depression and Post-traumatic Stress Disorder (PTSD), consistency of discipline, and the perceived early difficulty of the G2 children were measured. As reported by their own children, parents who reported having been abused in childhood were significantly more likely to engage in abusive behaviors toward the next generation. Findings indicated that abuse experienced by the parents, as well as consistency of discipline and depression plus PTSD, were predictive of parental abuse of the child. There were significant interactions between parental history of abuse and consistency of discipline, as well as abuse history and depression and PTSD. Parents who had experienced multiple acts of abuse and at least one physical impact were more likely to become abusive than were the other parents [517].

Another study of abusing parents investigated the impact of the non-offending mother's childhood history and current functioning upon the psychological status and placement decisions for 68 sexually abused girls. Maternal history of abuse and/or poor childhood attachment relationships were significantly related to current maternal substance abuse. Maternal substance abuse and dissatisfaction with social support were significantly associated with lack of maternal support to the child and more abuse incidents, which in turn were related to more sexual abuse-related symptomatology and placement in foster care. The findings are congruent with studies indicating that intergenerational transmission of abuse is not inevitable, and suggest that maternal substance abuse and social isolation are important mediating variables between a maternal history of sexual abuse and response to the abused child. The authors note that the findings suggest that interventions targeted to the

non-offending mothers may be important in reducing child dysfunction and placement in foster care in the aftermath of sexual abuse [518]

What about the intergenerational transmission of battering? A longitudinal study of an at-risk sample of young males was tested in Grade 4 and again with a female partner in young adulthood when they were between 17 and 20. It was hypothesized that parental antisocial behavior, unskilled parenting, and parental partner aggression played a key role in the son's later aggression toward an intimate partner, mediated by the development of antisocial behavior in the child during adolescence. Findings of the study indicate that the major hypothesized pathways through unskilled parenting practices and the boys' antisocial behavior were implicated in the intergenerational transmission of aggression [519]. In another study, subjects were 1,836 men who participated in the Second National Family Violence Survey. Researchers wanted to investigate the mediating effects of men's ineffective conflict resolution strategies and marital distress on the intergenerational transmission of wife battering. Results indicated that men who witnessed interparental violence were more likely to use ineffective conflict resolution strategies. The use of ineffective conflict resolution strategies increased men's likelihood of encountering marital distress and engaging in wife battering. The results also revealed a direct link between witnessing interparental violence and wife battering [520].

Other investigators wanted to find out whether boys who were exposed to abuse in childhood were more likely to become involved in teenage pregnancy. They found that boyhood exposure to physical or sexual abuse or to a battered mother is associated with an increased risk of involvement in a teen pregnancy—during both adolescence and adulthood. Because these exposures are common and interrelated, boys and adult men who have had these experiences should be identified via routine screening by pediatricians and other health care providers and counseled about sexual practices and contraception. Such efforts may prevent teen pregnancy and the intergenerational transmission of child abuse and domestic violence [521]

One group of researchers summarized the evidence for what they call the “three-factor theory of child abuse”. The three main hypotheses that have been supported are: (1) that psychologically abusive mothers have a high level of hostile feelings; (2) that the high level of hostile feelings in abusive mothers is associated with low marital coping skills (resulting in affectionless, violent marriages), a negative childhood upbringing (punitive, uncaring, over controlling), a high level of stress (objective stress), and a high level of strain (low self-esteem, depression, neurotic symptoms, social anxiety, feelings of being wronged); and (3) that maternal psychological child abuse is associated with low marital coping skills, a negative childhood upbringing, a high level of stress and a high level of strain. Through these complex mechanisms of

intergenerational transmission, the public health consequences of traumatic experience are spread throughout every subsequent generation [522].

As mentioned earlier, a review of child abuse studies supports that one third of abused children will grow up to become abusive parents, one third will not, and another third are at risk. It is important to look at how some parents were able to break the cycle of abuse. Abused mothers who were able to break the abusive cycle were significantly more likely to have received emotional support from a non-abusive adult during childhood, were more likely to have participated in therapy during some period of their lives, and more likely to have had a non-abusive and more stable, emotionally supportive, and satisfying relationship with a mate. Abused mothers who re-enacted their maltreatment with their own children experienced significantly more life stress and were more anxious, dependent, immature, and depressed [504].

VIII. Poverty, Substance Abuse, and Violence

In the United States, more people in the 1980's sunk into poverty than at any time since the 1960's. In 1979, the equity of income distribution began to deteriorate until by the mid-80's income disparities were the worst ever. Between 1977 and 1989, the top 1% of American families more than doubled their after-tax incomes, adjusting for inflation, while the bottom 60% of families lost incomes. At this point, about 1% of the population holds 48% of U.S. wealth and another 19% of the population holds another 46% of the nation's wealth, leaving a mere 6% of wealth to be divided up by 80% of the population [523].

The poverty rate for metropolitan areas in the U.S. was 12.3 percent in 1998, but those living inside central cities had a poverty rate (18.5 percent) more than twice that of those living in the suburbs (8.7 percent) [524]. Of the 14 million families maintained by women, 4.2 million were below the poverty level in 1994. This represents 34.6 percent of all families with female householders [525]. The number of poor families increased by 1.5 million between 1980 and 1991, from 6.2 million to 7.7 million. Poor families maintained by women accounted for 80 percent of this increase. Families maintained by women represented 48 percent of all poor families in 1980 and 54 percent of poor families in 1991 [525]. Adult women's chances of living in poverty are still higher than men's at every age. The biggest gap is for elderly women; their likelihood of being poor is twice that of men of the same age [526].

According to the Center on Budget and Policy Priorities, between 1995 and 1997, the income of the poorest 20% of female-headed families with children, a group that includes two million families and six million people, fell an average of \$580 per family. The study counts food stamps, housing subsidies, the Earned Income Tax Credit and other such benefits as income. Even when these benefits are included, these families have incomes below three-quarters of the poverty line. Among the poorest 10% of female-headed families with children, income fell an average of \$810 between 1995 and 1997, an average loss of one-seventh these families' incomes. The average incomes for these extremely poor families dropped from 35% of the poverty line in 1995 to 30% in 1997. The income decline these families experienced wiped out all of the income gains they secured between 1993 and 1995. The study found that these income declines had a significant effect on children. The number of poor children fell by 2.4 million between 1993 and 1995, but by only 360,000 between 1995 and 1997 and on the average those children who remained poor became poorer. The safety net programs became more eroded during this period as well. Between 1995 and 1997, the number of people living in poverty fell 3% while the number

receiving food stamps dropped 17%. A similar pattern marked the cash assistance programs for poor families with children. In 1995, some 88% of poor children received food stamp assistance, while in 1998, an estimated 70% did. Similarly cash assistance for children dropped from 57% to 40% during those years. The reductions in benefits exceeded increases in family earnings causing very poor female-headed families with children to lose ground. But also, among the next-to-the-poorest 20% of female-headed families with children – those with incomes modestly below or just slightly above the poverty line – average earnings increased substantially between 1995 and 1997 but losses of cash, food, and other benefits cancelled out all of the earnings gains, leaving the families' incomes just as low as before [527].

To compound the problem, the poverty rates were set during the 1960's and according to some authors have never been properly adjusted to account for the current cost of food, which is now much lower in relation to housing, health care, and other necessities like childcare. It has been stated that a family of four need an income of about 155% of the official poverty line to buy minimally sufficient food, housing, health care, transportation, clothing and other personal and household items, and pay taxes, and does not cover child care, which for low-income families consumes about one-fourth of the income [523, 528]

Journalist and social critic, Barbara Ehrenreich decided to hit the road in 1998 and work at low-paying jobs to see what it is really like. According to her research, 30% of the workforce toils for \$8 an hour or less and although the poorest 10% of American workers saw their wages rise from \$5.49 an hour in 1996 to \$6.05 in 1999 and the next 10% saw a rise from \$6.80 to \$7.35, these increases have not been sufficient to bring low-wage workers up to the amounts they were earning 27 years ago, in 1973, and the poorest have made the least progress. As she observes upon her return to her previous life, "to go from the bottom 20% to the top 20% is to enter a magical world where needs are met, problems are solved, almost without any intermediate effort" [529].

Material well-being of single mothers does not increase when they are in the workforce, even when their income is higher [530]. Work has costs, and these have been getting increasing attention. To begin with, there are direct financial costs of working paying for child care, transportation and related expenses that have not been adequately accounted for in current measures of poverty [531-533]. For single parents, the time constraints involved in entering the labor force are especially severe. The presence of younger children, for example, significantly decreases work and increases welfare use among single women [534]. Households with more than one adult present may be able to reap the benefits of employment while suffering fewer costs. According to the author of one report, the most striking finding that emerged from the research was that working mothers needed to bring in substantially more income to avoid experiencing hardship than did non-working mothers. In a government study

reported by the Census Bureau, single parent households that worked experienced much higher levels of material hardship than did working non-parent households, and both of these experienced greater hardship than married households that worked. The strong interaction of work and parental status shows that many of the "hidden costs" of work are associated with differences in household structure. Single parents who work must deal with hardship levels that are much higher than would be expected from the example of other working households [535].

In Pennsylvania, 272,948 children are not covered by health insurance throughout the year and 646,968 Pennsylvania children are enrolled in Medicaid, SCHIP and other state sponsored programs. As of June 1999, the TANF program provided income support for food shelter, clothing and other essential living expenses for 304,451 recipients in Pennsylvania. From January 1998 to June 1999, the number of Pennsylvania families receiving TANF income support assistance fell from 129,383 to 107,691. In 1999, the average rent a family paid in Pennsylvania was \$579. According to the Child Welfare League, a worker in Pennsylvania earning the minimum federal wage would have to work 86 hours a week to afford this rent. This rent is 137% of the maximum TANF cash assistance grant of \$421 per month [8]. In 1997, 17% of Pennsylvania children were living in poverty and 6% in extreme poverty. There were 597,000 children under age 18 in working poor families in 1998. [536].

Poverty, Welfare, Substance Abuse, and Violence

Addiction, poverty, violence, and mental illness are interconnected social problems. Even with welfare rolls down to 2.2 million families, at least 460,000 families are affected by addiction – about 1.2 million parents and children. Most of them have less than a high school education and have difficulty finding lasting employment. Up to 40% of them have learning disabilities. Between 20-30% of them are currently involved in a physically or psychologically abusive relationship and between 50-70% of the mothers on welfare have been in an abusive relationship at some point in their lives. Substance abuse causes or exacerbates 7 out of 10 cases of child abuse and neglect. Between 22% and 35% of women seeking care for injuries in emergency rooms are there because of domestic violence [537].

According to the National Crime Victimization Survey, the lower the annual household income, the higher the rate of intimate partner violence. Among females age 16-19, rates of intimate partner violence for the households receiving \$7500 or less were at least twice those of females in the same age category but at other income levels. For women age 2-24 in the lowest income category, intimate victimization rates were at least 20% higher than those in households with a larger income [235].

In one study of 98 low-income, urban African American and Latina women who were the "normal" group of a larger study, meaning they had no Axis I pathology – 25% of the women met the criteria for lifetime PTSD. Among them, 10-20% had exposure to other trauma besides being assaulted themselves including witnessing domestic violence, witnessing murder, homelessness, [538]. In a survey of 125 women living in low-income housing developments 53 (42%) of the women had engaged in unwanted sex because a male partner threatened to use force or used force to obtain sexual access. Women who had been sexually coerced were more likely to have used marijuana and crack cocaine and to have abused alcohol. Coerced women were more likely to have been physically abused by a domestic partner. These women were also more likely to perceive that requesting male partners to use condoms would create a potentially violent situation [539]. Of a representative sample of the Washington state caseload, 60% of the women on welfare reported some type of physical or sexual abuse as adults; 55% stated they had been physically abused by an intimate partner. In 50% of Oregon AFDC cases reviewed because of apparent lack of progress toward work, women reported they had been physically or sexually abused at some point during their lives. Finally, 58% of women who entered a Chicago welfare-to-work program over a one-year period reported current domestic violence [540].

"In Harm's Way: Domestic Violence, AFDC Receipt and Welfare Reform in Massachusetts", a probability sample of 734 women receiving AFDC in 40 of 42 welfare offices in the state, found that 64.9% had experienced physical abuse (using the state's legal definition of "hit, slapped, kicked, thrown, shoved, hurt badly enough to go to a doctor, used weapon in a frightening way, forced sexual activity, or 'made you think you might be hurt'") by an adult male partner during their lives, and 19.5% reported such abuse during the past year [541].

The Passaic County Study of AFDC Recipients in a Welfare-to-Work Program: A Preliminary Analysis, a sample of 846 women in an AFDC Job Readiness program in Passaic County, New Jersey, found that 57.3% reported they had experienced physical abuse by an intimate male partner as adults, and 19.7% of those currently in a relationship stated they were being abused physically (just over 65% reported they were currently involved in a relationship with a man). In this study, the term "physical abuse" had been discussed during the program, but was not defined on the survey [542].

The Worcester Family Research Project, a study of 436 homeless and housed women, of whom 409 received AFDC, found that over 60% of the entire sample reported severe physical violence (slapped at least 6 times, kicked, bit, hit with a fist, hit with an object, beaten up, or more injurious acts) by an intimate male partner in adulthood. Nearly a third (32.4%) reported such violence by their "current or most recent partner" within the past two years. They found that the physical and emotional well-being of many women in the

sample had been profoundly compromised and that they demonstrated significantly elevated prevalence of major depressive disorders and PTSD, which present significant barriers to employment. Rates of violent victimization, both in childhood and in adulthood, were uniformly higher in the part of the sample that used welfare for long periods of time compared to short term users. The authors hypothesize that violence and its secondary effects, like PTSD, may play a significant role in women's ability to stay off of AFDC [543].

In the Commonwealth Fund Survey on Women's Health, a telephone survey of AFDC recipients, the study found that 24% of the welfare recipients reported domestic violence in the past five years with their current partner as compared to only 6.8% of other respondents [544].

The Effects of Male Violence on Female Employment, a survey of 824 women (one-third currently receiving AFDC, two-thirds not) in one of Chicago's low-income neighborhoods, found that women who were receiving AFDC were more likely than the others to experience domestic violence: 31% of the AFDC recipients and 12% of the non-recipients had experienced "physical aggression" within the last 12 months (throwing objects, pushing, grabbing, slapping); 20% reported severe aggression within the last 12 months compared to 8% of women not receiving AFDC (kicking, hitting, biting, beating, injuring, raping, and threatening with or using a weapon) by a partner in adulthood. Further, of those currently in a relationship, 58% of the AFDC recipients had experienced verbal and symbolic aggression within the last 12 months compared to 42% of women not receiving AFDC (attempting to control, harassing, threatening children and friends [545].

In a report from a single parent employment demonstration program, the project found that 27% of the cases involved in the welfare-to-work transition were currently involved in domestic violence. Additionally, 69% of the cases were identified as having mental health problems, with 36% having substance abuse issues and 22% having medical problems. The bulk of the participants – 77% - exhibited four or more of these risk factors [546]. In a similar project from the state of Oregon, 50% of the cases admitted to sexual or physical abuse during their lifetime, 50% to having substance abuse issues, and 75% mental health issues ranging from depression and anxiety to more severe conditions [547].

For low-income women in general and for those receiving welfare in particular, substance abuse rates range from 16 to 37%. Domestic violence in the previous year has been reported in 20% of the welfare population, compared to 2% in a broader sample. In studies of homeless women, the percentages are much higher (see below). In a large sample of women seeking publicly funded addiction treatment, the rate of victimization was 42% [548]. A recent study of 13 states found that 28% of children in low-income families lived with a parent with symptoms suggestive of poor mental health compared with 17% of all

children. Maternal depression, a particularly harmful problem for young children, is disproportionately prevalent among low-income mothers – in one study affected 42% of a sample of welfare recipients, rates two to four times as high as that in the general population [549].

According to a U.S. government analysis, approximately 4.9 percent of female AFDC recipients are estimated to have significant functional impairment related to substance abuse. An additional 10.6 percent of female AFDC recipients are estimated to be somewhat impaired by substance abuse problems, indicating a likely need for substance abuse treatment concurrent with participation in employment and training activities. AFDC recipients have somewhat higher rates of substance abuse related impairments than persons not receiving AFDC. Because the AFDC population is poorer than the general population, this is not surprising. Persons living in poverty are known to have higher rates of drug and heavy alcohol use than do those with higher incomes, regardless of program participation. However, the vast majority of persons impaired by substance abuse are not AFDC recipients. Just seven percent of all adults (age 18-44) estimated to be significantly impaired by substance abuse report receiving AFDC. Most women in the group we have defined as significantly impaired by alcohol and other drug use are not AFDC recipients. Of these women, only 20 percent receive AFDC. Impaired AFDC recipients are more likely than other impaired persons to report receiving treatment for their substance abuse in the past year. Half of AFDC recipients estimated to be significantly impaired by substance abuse reported receiving some form of substance abuse treatment in the past year. Only 23 percent of the non-AFDC household adults (age 18 - 44) in this impairment category reported receiving any treatment for their substance abuse problem in the past year. [550].

A summary of the major studies of the connection between poverty and violence indicate that: a) a majority of AFDC, although single mothers, are involved with an intimate partner; b) large proportions of these relationships are violent; c) the prevalence of current physical violence is reported in the range of 14% to 32%, while the occurrence of physical violence ever in life is consistently reported in the 33.8% to 61% range; d) high prevalence of a history of childhood abuse in the welfare population with the highest levels found among domestic violence victims; e) high levels of physical and mental health problems are present among those women who have experienced domestic violence; f) interference from intimate partners with education, training, work and childcare arrangements; g) history of seeking employment but an inability to maintain it [540].

Poverty and Children's Exposure to Violence

American children are almost twice as likely to live in poverty as Americans in any other age group: 37% of American children (27 million) live in low-income families, while 16% of children (11 million) live in poverty, in families with incomes below the federal poverty line of \$13,861 for a family of three in 2000 [551]. Parents make up about 30% of all welfare recipients with children accounting for the rest [549]. About the same number of children lived in poverty in 1980. The U.S. child poverty rate is substantially higher than that of most other major Western industrialized nations and highest for African-American (30%) and Latino (28%) children. The child poverty rate for White children is 9%. Five million American children (6%) live in extreme poverty in families with incomes below *half* the poverty line or \$6,930 for a family of three) [551]. Young children living with their mothers only are about five times as likely to be poor as those living with married parents, and over half of all young Black children and nearly half of all Hispanic young children living in single-mother families are poor. The majority of poor young children live in working families, but having parents who are employed does not prevent them from living in poverty. In fact, only 11% of poor children under age three live in families relying exclusively on public assistance [552]

There is an unequivocal connection between poverty and violence. Plenty of children get out of poverty without becoming violent. And plenty of violence occurs in working class, middle class, and upper class families. But if you are a child born into poverty, your risk of exposure to violence is so high, at least in the U.S. that the exposure to trauma is guaranteed. So are an increased risk for dying in infancy, involvement in criminal behavior, diminished education attainment, poorer health, fatal and nonfatal injury, abuse and neglect, lower developmental scores, and many mental health problems [553-555].

The timing of poverty appears to be important when looking at child outcomes. Consistent with the developmental material mentioned earlier, children who experience poverty during their pre-school and early school years have lower rates of school completion than older children and adolescents who become impoverished only in later years [556]. Poverty is known to have selective effects on child development [557]. Family income and poverty status are powerful correlates of the cognitive development and behavior of children, even after accounting for other differences--in particular family structure and maternal schooling--between low- and high-income families [558]. As infants and toddlers, babies may show signs of attachment disorders. Babies with mothers who have depressive disorders show poorer performance on school readiness and behavioral indicators at age three than children whose mothers are not depressed. Many of the young children show developmental delays. Often the children and the parents are in poor health. Early Head Start visitors and Head

Start settings often describe the children as sad, anxious, aggressive, and impulsive. The children are more likely to develop behavior patterns similar to their patterns and as adolescents are especially vulnerable to alcohol, tobacco, drugs and other substance abuse and high-risk behaviors [549]. If you are a poor child, you are less likely to get medical care and if you do get it, you are more likely to wait an hour or more for care, at least in the United States [559].

Poverty and Child Well-Being

Over time a number of economic, demographic, social and physical risks can harm children's development. The National Survey of America's Families includes questions that are used to assess sociodemographic risk: single parenthood, four or more children living in the child's household, the lack of high school diploma or GED by the child's parent, and poverty. Some researchers believe that poverty itself may not directly cause negative outcomes in children; rather poverty is associated with so many stressors, beginning with poor prenatal care and including family disorganization and breakup. Risk factors tend to co-occur – that is a child who experiences one stressful factor is likely to experience other stressors as well. Twenty-two percent of poor children experienced poverty but had no other risk factors. About half experienced poverty plus one other risk factor. Almost a quarter experienced poverty plus two other risk factors. Five percent experienced all the risk factors. Among children ages 6-11, three times as many high-risk children exhibited a high level of behavioral problems, compared with other children. Similarly, among youth ages 12-17, 25% of high-risk youth exhibited a high level of behavioral problems, while just 7% of other youth did. Among high risk children ages 6-11, 32% exhibited low school engagement, compared with 14% of other children. Among high-risk youth ages 12-17, 43% were described as having a low level of school engagement, compared with 24% of other youth. Among high-risk children, 24% had skipped school two or more times, compared with 9% of other children. Similarly 31% of high-risk children had been suspended or expelled from school, compared with 12% of other children. Nationwide, 8% of children under age 18 live in families with high levels of social and demographic risk [560].

Homelessness, Violence and Substance Abuse

Homelessness, violence, and substance abuse are interrelated social problems. The exposure of homeless people to traumatic experiences is very likely for three main reasons: (a) the sudden or gradual loss of one's home can be a stressor of sufficient severity to produce symptoms of psychological trauma; (b) the conditions of shelter life may produce trauma symptoms; (c) many homeless people--particularly women--become homeless after experiencing physical and sexual abuse and consequent psychological trauma [561]. From a public health point of view it is established that past mental hospitalization,

treatment in a detoxification center, childhood sexual abuse, and adult physical abuse are all associated with an increased risk of homelessness [562]. In another study of 144 homeless people, the homeless were significantly less likely to be receiving public benefits, were more likely to have a DSM-III diagnosis of substance abuse, showed higher levels of self-rated psychological distress and were more likely to be victims of recent domestic violence and to have been physically abused as children [563].

Researchers wanted to explore the factors that influence the initiation of drug and alcohol use among homeless women and the health and social consequences of drug and alcohol use. Their sample consisted of 238 women; of whom 209 women reported drug and/or alcohol use in the past month and 29 women reported no history of drug or alcohol use. Findings of the study revealed homeless women who currently used drugs and alcohol, homeless women who currently used drugs only, and to a lesser extent current alcohol users only, had suffered traumatic childhood events and family dysfunction and had to cope with low self-esteem, emotional distress, and poor physical health. [564].

Many studies demonstrate the contribution of domestic violence to homelessness, particularly among families with children. A 1990 Ford Foundation study found that 50% of homeless women and children were fleeing abuse [565]. In a study of 777 homeless parents, the majority of whom were mothers, in ten U.S. cities, 22% said they had left their last place of residence because of domestic violence [566]. More recently, 44% of cities surveyed by the U.S. Conference of Mayors identified domestic violence as a primary cause of homelessness [567]. In Minnesota, domestic violence is the most common reason for women to enter a shelter – approximately one in five women surveyed indicated that one of the main reasons for leaving housing was to flee abuse, while 24% of women surveyed were homeless, at least in part, because of a previous abuse experience [568]. In Missouri, 18% of the sheltered homeless population are victims of domestic violence [569]. In Virginia, shelter providers report that 35% of their clients are homeless because of family violence [570].

Other researchers have been looking at homeless mothers and reporting a frighteningly high incidence of violence exposure as part of their past history. In one study comparing homeless mothers to poor housed mothers, the homeless experienced more severe physical and sexual assault over the lifespan, but both groups had an increase in major depressive disorder, PTSD, and substance use disorders as well as a higher prevalence of chronic health problems [571]. In a study of 436 homeless and poor housed mothers, nearly two-thirds reported severe physical violence by a childhood caretaker, 42% reported childhood sexual molestation, and 61% reported severe violence by a male partner [543]. Childhood predictors of family homelessness included foster care placement and respondent's mother's use of drugs. Independent risk factors in adulthood

included: minority status, a recent move to the town where the study was done, recent eviction, interpersonal conflict, frequent alcohol or heroin use, and recent hospitalization for a mental health problem. Protective factors included: being a primary tenant, receiving cash assistance or a housing subsidy, graduating from high school, and having a larger social network [572]. The strongest risk factor for PTSD was experiencing childhood sexual abuse. Low-income women with lifetime PTSD had more bodily pain, even when controlling for other health and demographic factors. Women with PTSD experienced more chronic health conditions and had more problematic relationships with their health care providers and perceived more barriers to care [573].

Another study looked at the foster care experience of homeless women. One-third of homeless women reported being raised apart from their parents. Among women with children under age 18, most (61.5%) had children who had lived in foster care or other out-of-home placements. The variables that were associated with homeless mothers' children living in foster care or other out-of-home placements were: child was school-age, mother was age 35 or older, mother had a current alcohol or drug use disorder, mother experienced childhood sexual abuse, and mother ran away from home (when under age 18) [574].

In another study of homeless women in a shelter, one third of them had PTSD [575]. In a study of poor women presenting in an outpatient clinic, 65% reported some kind of abuse or neglect during childhood, and the vast majority of those had experienced more than one kind of abuse or neglect [576]. The purpose of another study was to examine the psychosocial, behavioral, and environmental profiles of homeless women, both those with and without a history of victimization, and their intimate partners. Five hundred seven homeless women and their intimate partners participated in the study. Of the women, 39% reported being physically and/or sexually assaulted as adults. Victimized women were more likely than others to have a history of childhood sexual and physical abuse, lifetime substance use, greater mental health symptomatology, and current risky sexual activity [577].

In a study of homeless women with gynecological symptoms, of 974 reproductive-age (15-44) homeless women, two-thirds reported symptoms during the previous year; 71% of those received medical care for their gynecological symptoms. Women reporting recent drug use and rape received less care [578]. Homeless women are also more likely to test positive for hepatitis C (HCV). In a sample of 884 homeless and impoverished adults, 22% were found to be HCV infected. Lifetime injection drug users (IDUs) (cocaine, crack, and methamphetamine) and recent daily users of crack were more likely than nonusers or less-frequent users of these drugs to be HIV-infected. Similar results were found for those who had been hospitalized for a mental health problem. Among non-injection drug users and persons in the total sample, those

who reported lifetime alcohol abuse were more likely than those who did not to be HCV infected [579].

There is a high proportion of dual diagnosis among the homeless population. A large study engaged in face-to-face interviews with 1,563 homeless individuals. Two-thirds of these homeless adults met criteria for chronic substance dependence, whereas 22% met criteria for chronic mental illness, with substantial overlap between those two disorders: 77% of those with chronic mental illness were also chronic substance abusers. Only one-fifth of each of those two groups reported receiving treatment for those disorders within the last 60 days [580]. In a study of 300 homeless women selected randomly at St. Louis shelters, predominantly young adult, single, and black, most had young children and averaged nearly a high school education. Schizophrenia and bipolar affective disorder account for only a small portion of the mental illness in these women. Nearly one in three had a history of substance abuse, with drug abuse being more prevalent than alcoholism. One third of the sample met lifetime criteria for post-traumatic stress disorder. One fourth of the women had received inpatient psychiatric care. The majority of those with a non-substance Axis I diagnosis had received some mental health treatment [581].

In a homeless, mentally ill population, exposure to violence is so high that it can be considered a normative experience. Three aspects of physical and sexual assault in the histories of 99 episodically homeless, seriously mentally ill women were assessed: lifetime prevalence; severity, co-occurrence, and recency; and associations between levels of this victimization and specific characteristics of the women. Results indicate that the life-time risk for violent victimization was 97% in this population [582]. In another study looking at homelessness among the seriously mentally ill, researchers looked at rates of childhood physical and sexual abuse among 120 homeless women with severe mental illness. The prevalence of childhood abuse in this sample of women was substantially higher than among homeless women in general. The experience of childhood abuse was related to: increased suicidality, symptoms of post-traumatic stress disorder, an increased likelihood of first experiencing homelessness during childhood [583]. Mental illness, substance abuse and homelessness are known to significantly increase the likelihood of physical and sexual assault [584]. In a study of homelessness, substance abuse, and schizophrenia, the women had higher rates of sexual and physical victimization, comorbid anxiety and depression, and medical illness than the men [585].

Ninety-eight homeless women were compared to a matched sample of housed women. The homeless women were young (18-35 years), about 80% were single mothers and about 50% had children living with them. They reported a history of more symptoms of mental illness, more instability of employment and housing, more physical and sexual abuse, more drug and alcohol problems, and fewer skills for interacting with others [586].

Homeless women living on the streets were more likely than sheltered women to be white and longer-term homeless. Compared to sheltered women, unsheltered women have over 3 times greater odds of fair or poor physical health, and over 12 times greater odds of poor mental health than sheltered homeless women. They were also more likely than sheltered women to report using alcohol or non-injection drugs, to have multiple sexual partners, and to have a history of physical assault. [587].

Closer to home, a random-sample survey of homeless children and their mothers residing in Philadelphia shelters included 146 families in the final sample. The important reasons for homelessness cited in the survey included: physical abuse, substance abuse, disagreements with landlords, and poor living conditions. The children's health problems included: a high incidence of reported accidents and injuries, burns, and lead toxicity. Parents suffered from: depression, physical abuse and substance abuse. School-aged children tended to have low scores on tests of expressive vocabulary and word decoding. Preschoolers seemed to be below age expectations in receptive vocabulary and visual motor skills [588].

In one study of 150 homeless youth from New York City, most came from backgrounds characterized by severe emotional deprivation and physical or sexual abuse. Of the 140 who completed the full interview, 90 percent fulfilled DSM-III-R criteria for an emotional or behavioral disorder. Fifty-nine percent had conduct disorder, three-quarters were depressed, 41% had considered suicide, and more than one-quarter had attempted suicide [589]. In a study of almost 400 homeless adolescents, without exception, the group with histories of both physical and sexual abuse exhibited the most severe symptomatology and was at greatest risk for revictimization [590]. In another study of 93 homeless adolescents in Los Angeles, 79% had experienced more than one homeless episode in their lifetime, and almost a fourth reported more than ten episodes. There was a high prevalence of several mental disorders, including conduct disorder with aggression, major depression, and alcohol and drug abuse. Almost half had attempted suicide. Nearly all the adolescents were sexually active; about a third had more than ten partners in the previous year. About a third reported trading sex for money, food, or drugs. Although most had basic knowledge of HIV transmission and used some form of birth control, little more than half had used a condom in the most recent sexual encounter, and 18% reported sex with intravenous drug users [591]. There is also reason to believe that the reports of home life that these children offer are reasonably accurate. Researchers studied runaway children and their families and found a high degree of agreement between the two [592].

This study assessed HIV risk behaviors in a sample of 196 homeless youth in 10 urban shelters and in 5 street locations in Chicago and examined factors associated with these behaviors. Overall, 83.7% reported at least one of these

risk factors: multiple sex partners; high-risk partners; inconsistent condom use; history of sexually transmitted disease; anal sex; prostitution; and/or intravenous drug use. An index of these behaviors was associated with being male, having unmet personal needs, being interviewed in street locations, and having a history of sexual abuse. Findings suggest that strategies that may decrease risk behaviors among homeless youth include the elimination of their need to rely on illicit activities for income, provision of basic needs, education regarding existing services, increased outreach efforts, and early identification of and protection from childhood sexual abuse [593]. The cost of homelessness goes way beyond the obvious human toll. Of hospital admissions, among the homeless, 51.5% are hospitalized for the treatment of substance abuse or mental illness, as compared with 22.8% for the other low-income patient. Preventable medical conditions account for another 19%. Of the admissions, 81% of the admissions were for a principal or a secondary diagnosis of substance abuse or mental illness. Homeless patients stayed 4.1 days, or 36%, longer per admission. The costs of the additional days per discharge averaged \$4,094 for psychiatric patients, \$3,370 for patients with AIDS, and \$2,414 for all types of patients [594].

The feasibility of providing post-detoxification residential substance abuse programming (stabilization) in large emergency shelters was examined as part of a demonstration project funded by the National Institute on Alcohol Abuse and Alcoholism under Section 613 of the Stewart B. McKinney Act (Public Law 100-71). The program completion rates of 773 homeless/near-homeless substance-abusing individuals assigned to two large shelters (71% and 62%) and two traditional substance abuse treatment agencies (68% and 54%) were comparable. These data support the expansion of shelter services to include substance abuse programming and intervention. Shelters represent windows of opportunity into the lives of homeless substance-abusing men and women, and full advantage of this opportunity should be taken to impact this subgroup of the homeless [595].

Prostitution, Substance Abuse and Violence

As researchers in the field have pointed out, any traumas or conflicts that detach children and youth from their families make youngsters highly vulnerable to delinquency. In the case of adolescent females, a breach of family attachments appears to heighten the risk of early sexual involvements that, in the context of gender differences in sexual development, expose them to partners significantly older than themselves, and in significantly larger numbers than would otherwise be the case [596].

Investigators looked at the long-term criminal consequences of childhood sexual abuse through an examination of official criminal histories for a large sample of validated cases of childhood sexual abuse, compared to cases of

physical abuse and neglect and a control group matched for age, race, sex, and approximate family socioeconomic status. Childhood sexual abuse victims were at increased risk of arrest as a juvenile for being a runaway. As adults, child sexual abuse victims were at higher risk of arrest for sex crimes than controls, as were victims of physical abuse and neglect. Childhood sexual abuse victims were more likely to be arrested for prostitution as adults than other abuse and neglect victims and controls, regardless of gender [597].

A related study examined the extent to which being abused and/or neglected in childhood increases a person's risk for promiscuity, prostitution, and teenage pregnancy. From 1989 to 1995 1,196 subjects (676 abused and/or neglected and 520 control subjects) were located and interviewed. Early childhood abuse and/or neglect were a significant predictor of prostitution for females. For females, sexual abuse and neglect were associated with prostitution, whereas physical abuse was only marginally associated. Childhood abuse and neglect were not associated with increased risk for promiscuity or teenage pregnancy. These findings strongly support a relationship between childhood victimization and subsequent prostitution [58].

There are numerous pathways to prostitution including running away, childhood sexual abuse, and drugs. Another group of researchers looked at 1,142 female jail detainees and found that running away had a dramatic effect on entry into prostitution in early adolescence, but little effect later in the life course. Childhood sexual victimization nearly doubled the odds of entry into prostitution throughout lives of women. Although the prevalence of drug use was significantly higher among prostitutes than among non-prostitutes, drug abuse did not explain entry into prostitution [598].

The purpose of another study was to determine whether sexual abuse involving penetration that occurred in childhood only, adolescence only, or both childhood and adolescence differently impacted whether community-recruited women had ever traded sex for money or drugs, their number of recent sex partners, and the number of times they had engaged in recent unprotected sex. The second purpose was to assess the mediating effects of adulthood rape, recent drug use, and recent sex with an injection drug user on these three HIV-risky sexual behaviors. Fifteen hundred women were recruited from three U.S. sites and questioned about their childhood and/or adolescent sexual abuse histories, adulthood rape experiences, recent drug use, and adult HIV-risky sexual behaviors via structured interviews. One-third of the women reported having experienced sexual abuse involving penetration in childhood and/or adolescence. There was a significant relationship between early sexual abuse and adult risky behaviors and rape in adulthood mediated this relationship for all three HIV-risky behaviors. Abuse that occurred in childhood only and abuse that occurred in both childhood and adolescence had a stronger impact on later risky

behaviors than did abuse that occurred in adolescence only. Rape in adulthood appeared to intensify the effects of early sexual abuse [599].

In another study of adult prostitution, two of three street prostitutes had experienced lifetime physical or sexual abuse by either an intimate or commercial partner. One of eight prostitutes reported physical and sexual abuse by both intimate and commercial partners during her lifetime. Women who were homeless in the last year, those who reported exchanging for drugs and money as their main source of income, used injection drugs in the past year and had sex in crack houses, and who were human immunodeficiency virus (HIV)-positive were more likely to be report combined physical and sexual abuse [600] .

One hundred and thirty people working as prostitutes in San Francisco were interviewed regarding the extent of violence in their lives and symptoms of post-traumatic stress disorder (PTSD). Fifty-seven percent reported that they had been sexually assaulted as children and 49% reported that they had been physically assaulted as children. As adults in prostitution, 82% had been physically assaulted; 83% had been threatened with a weapon; 68% had been raped while working as prostitutes; and 84% reported current or past homelessness. PTSD severity was significantly associated with the total number of types of lifetime violence; with childhood physical abuse; rape in adult prostitution; and the total number of times raped in prostitution. Of the 130 people interviewed, 68% met DSM III-R criteria for a diagnosis of PTSD. Eighty-eight percent of these respondents stated that they wanted to leave prostitution, and described what they needed in order to escape [601].

Investigators studied 140 prostitutes in Washington D.C. and found three subgroups: female, male, and transgender male. Over 42% met established criteria for PTSD. They had major health needs that included: protection from physical and sexual assault, social support, counseling, addictions treatment, job training and medical care [602].

Another study examined the prevalence of physical and sexual abuse by intimate and commercial sexual partners among street-based sex workers and explores correlates of partner abuse by commercial partners using the following factors: sociodemographics, substance abuse, sexual behavior, and physical and sexual childhood abuse. One hundred thirteen street sex workers were recruited from December 1996 through May 1997. Two thirds of the street prostitutes had experienced lifetime physical or sexual abuse by either an intimate or commercial partner. In addition, one of eight reported physical and sexual abuse by both intimate and commercial partners during her lifetime [600].

IX. The Economic Consequences of Violence and Substance Abuse

One of the most problematic aspects of public health delivery is convincing the public that the investment is worth it. We cannot address a public health approach to violence without estimating the cost of violence to the society. Increasingly, particularly in the U.S., there have been many attempts to do just this kind of an assessment at both the local and the national level. Spending for mental health and substance abuse (MH/SA) treatment was \$85.3 billion in 1997: \$73.4 billion for mental illness and \$11.9 billion for substance abuse. MH/SA spending growth averaged 6.8% a year between 1987 and 1997, while national health expenditures grew by 8.2% [603].

Cost of Substance Abuse

In a government report released in September 2001, overall costs for drug abuse (excluding alcohol, tobacco, and prescription drugs) increased at a rate of 5.9% annually between 1992 and 1998. By 1998, the societal cost of drug abuse was \$143.4 billion. The rate of increase in costs was in excess of the combined increase of 3.5% for the adult population and consumer price index for all services for this period. Over that time period, the share of costs represented by health care declined slightly from 10.6% to 9.0% while the share represented by productivity losses and other effects increased from 68.0 to 68.7% and from 21.5% to 22.4% respectively. It was estimated in the report that by the year 2000, the overall cost would have increased to \$160.7 billion, at a rate of 5.8% annually. Health care costs throughout this period grew at a substantially lower rate than the population rate growth or the consumer price index: 2.9% vs. 1% + 4.1%. This was related to declines in spending for HIV/AIDS care. Spending for community-based specialty treatment is estimated to have risen from \$3.4 to \$4.9 billion between 1992 and 1998, a 6.3% annual growth rate and by 1998 had replaced HIV/AIDS treatment as the largest component of the health care cost of drug abuse [604].

The estimated loss in productivity rose from \$69.4 billion in 1992 to \$98.5 billion in 1998 and was estimated to increase to \$110.5 in 2000. The fastest increases were for productivity losses related to drug abuse related illness (8.5%) and from incarceration (9.1%). In 1998, premature death was estimated to cost the U.S. over \$16.5 billion; drug abuse related illness cost over \$23 billion; institutionalization or hospitalization \$1.7 billion; productivity loss of victims of crime, over \$2 billion; incarceration over \$30 billion; and crime careers more than \$24.5 billion [604].

Other cost categories in 1998 include criminal justice system including police protection (\$9 billion – 9.3% annual increase); legal adjudication (\$4.5 billion – 8.7% annual increase); state and federal corrections (\$11 billion – 6.6% increase); local corrections (\$1.6 billion – 3.7% increase) and federal spending to reduce supply (\$4.8 billion – 2.6% increase. Private costs include \$548 million – a 7% increase annually. The only costs that went down include a 0.5% annual decrease to \$186 million for property damage for victims of crime and social welfare programs that declined by 4.9% a year from \$337 million in 1992 to \$249 million in 1998. These last two declines however, even in 1992, represented only 2.4% of other effects [604].

Many of the health care, productivity loss and other costs are crime-related costs, in rising from a 1992 cost of \$60.8 billion to a 1998 cost of \$88.9 billion and estimated to be \$100.1 billion in 2000 with the largest increases due to lost productivity due to incarceration and costs of the criminal justice system [604].

During the past two decades, five major studies have estimated the economic costs of alcohol abuse in the United States using a “cost of illness” approach that expresses the multidimensional impact of alcohol abuse. The most recent estimate for the overall economic cost of alcohol abuse was \$185 billion for 1998 [605]. This was a projection based on the National Institute on Alcohol Abuse and Alcoholism 1992 estimate for the cost for alcohol abuse and dependence of \$148 billion in 1992, which was about 60% of the estimated \$246 billion, spent on substance abuse annually. Over two-thirds (70%) of the costs of alcohol abuse were related to lost productivity (\$134.2 billion), either due to alcohol-related illness (\$87.6 billion) or premature death (\$36.5 billion) and crime (\$10.1 billion). Most of the remaining costs of alcohol abuse were in the form of health care expenditures (\$26.3 billion, or 14.3% of the total) such as the costs of treating alcohol use disorders (\$7.5 billion) and the medical consequences of alcohol consumption (\$18.9 billion 12.7%), property and administrative costs of alcohol-related motor vehicle crashes (\$15.7 billion), and various additional criminal justice system costs of alcohol-related crime (\$6.3 billion) [605]. In a report released to the U.S. Congress in 2000, estimated cost for alcohol abuse and dependence was \$184.6 billion for 1998 and less than half of the costs were carried by the alcohol abusers and their family but were instead borne by other sectors of society: about 20% borne by the Federal Government in the form of reduced tax revenues resulting from diminished productivity; 18% by State and local governments in the form of reduced tax revenue and the costs resulting from alcohol-related crime and motor vehicle crashes. Private insurance accounted for 10% of the total cost, primarily in the area of health care expenditures and motor vehicle crashes [3, 605].

Underage drinking is a major public health problem. In 1998, about 10.4 million drinkers were between the ages of 12 and 20 and more than five million

of these were binge drinkers. One study estimates that the total economic cost of alcohol use by underage drinkers amounts to nearly \$53 billion a year, including more than \$29 billion in alcohol-related violent crime costs, over \$19 billion in traffic crashes and over \$1.5 billion in suicide attempts [606, 607].

Substance abuse and addiction causes or contributes to at least 50% of all child welfare cases and in some areas it plays a role in 90% of all cases. The result is that substance abuse and addiction account for some \$10 billion in federal, state and local government spending – 70% of the total child welfare spending. Approximately 44% flows from the federal coffers, 44% from state, and the balance from local, usually county, governments. This does not include costs of healthcare, operating judicial systems, law enforcement, special education and lost productivity; nor does it include privately incurred costs. There are 28 million children of alcoholics, 21 million of them adults. The lost productivity of those who were neglected or abused as children is significant. The lost productivity for Fetal Alcohol Syndrome adults alone is about \$1 billion. Healthcare costs and related services just for children and surviving adults who suffer Fetal Alcohol Syndrome amounted to \$2 billion; hospital costs for newborns whose mothers abused illegal drugs amount to \$360 million [487]

In a study looking at the relationship between ICU admissions and substance abuse, 28 percent of ICU admissions generating 39 percent of costs were substance abuse related. Substance abuse-related admissions were significantly longer and more costly than admissions not related to substance abuse: 4.2 days vs. 2.8 days. Substance abuse-related admissions were significantly more costly than admissions not related to substance abuse: \$9,610 vs. \$5,890. The frequency of substance abuse-related admission was linked with the patient's insurance status (Medicare, private insurance, uninsured). In the uninsured group, 44% of admissions were substance abuse related, significantly higher than in the private insurance and Medicare groups, and generating 61% of all ICU costs in the uninsured group [608].

In a study looking at medical utilization in family members of substance abusers, investigators looked at 278 family members – 73 male, 205 females (91% of SA were men). Among the family members there was an increased frequency of: mental disorders, digestive system problems, obstetrical problems, injuries, and poorly defined conditions. The family members were twice as likely to have: non-referred visits, specialist visits and to use laboratory services [609]

Children of alcoholics also have higher medical utilization with higher rates of inpatient hospital admissions, more days in the hospital, greater hospital charges, increased susceptibility to specific illnesses compared to other children, increased susceptibility to mental illness, substance abuse, and injuries and poisonings [610].

Among the homeless population who are substance abusers, hospital admissions are 51.5% for treatment of substance abuse or mental illness, as compared with 22.8% for the other low-income patient and another 20% are admitted for preventable medical conditions. For the homeless in this study, 81% of the admissions had a principal or a secondary diagnosis of substance abuse or mental illness. The homeless patients stayed 4.1 days, or 36%, longer per admission and the costs of the additional days per discharge averaged \$4,094 for psychiatric patients, \$3,370 for patients with AIDS, and \$2,414 for all types of patients [594].

The prevalence of medical disorders is high among substance abuse patients, yet medical services are seldom provided in coordination with substance abuse treatment. To examine differences in treatment outcomes and costs between integrated and independent models of medical and substance abuse care as well as the effect of integrated care in a subgroup of patients with substance abuse-related medical conditions (SAMCs) researchers looked at the care of 592 men and women admitted to a large health maintenance organization chemical dependency program in Sacramento, California between 1997 and 1998. Patients were randomly assigned to receive treatment through an integrated model, in which primary health care was included within the addiction treatment program or an independent treatment-as-usual model, in which primary care and substance abuse treatment were provided separately. Both programs were group based and lasted 8 weeks, with 10 months of aftercare available. Both groups showed improvement on all drug and alcohol measures. Overall, there were no differences in total abstinence rates between the integrated care and independent care groups (68% vs. 63%). However, patients with SAMCs were more likely to be abstinent in the integrated care group than the independent care group. This was true for both those with medical and psychiatric SAMCs. The authors concluded that individuals with SAMCs benefit from integrated medical and substance abuse treatment, and that such an approach can be cost-effective. Particularly given the high prevalence and cost of medical conditions among substance abuse patients [611].

Investigators wanted to study the cost-effectiveness study of an AIDS intervention that focuses on drug use as an outcome. All individuals in the study were given the revised NIDA standard intervention and randomly assigned to either a longer, more personalized enhanced intervention or no additional intervention. The estimated cost of implementing the standard intervention was \$187.52, and the additional cost of the enhanced intervention was \$124.17. They concluded that the additional cost of implementing the enhanced intervention is relatively small and compares favorably to a rough estimate of the benefits of reduced days of drug use [612].

Different countries deal with substance abuse differently. A study compared the mortality and morbidity in 624 injecting drug users in Amsterdam

and 2,185 in Baltimore to generate a hypothesis about the role of different health care systems and drug user policies. The incidence of hospitalizations and emergency room visits was substantially lower in Amsterdam, suggesting that higher accessibility to primary care in Amsterdam lowers (inpatient) hospital visits and presumably societal costs [613].

Substance abuse (SA) care has been excluded from recent federal and state legislation mandating equal benefits for mental health and medical care ("parity"), largely because of cost concerns. But according to one set of investigators, changing even stringent limits on annual SA benefits has a small absolute effect on overall insurance costs under managed care, even though a large percentage of SA patients are affected. Removing an annual limit of \$10,000 per year on SA care is estimated to increase insurance payments by about 6 cents per member per year, removing a limit of \$1,000 increases payments by about \$3.40. As long as care is comprehensively managed, "parity" for SA in employer-sponsored health plans is not very costly [614].

Cost of Substance Abuse for Pennsylvania

The National Center on Addiction and Substance Abuse released a three-year study that looked at the impact of substance abuse on state budgets in 1998. States spent conservatively 81.3 billion on substance abuse and addiction – 13.1% of the total state spending. Of each dollar, 96 cents went to shovel up the wreckage of substance abuse and addiction while only 4 cents to prevent and treat it. With a population of 12 million, the total state budget for Pennsylvania in 1998 was \$24,237 million and \$3,506 million went for substance abuse. Only 2 cents of the Pennsylvania substance abuse dollar was spent on treatment and less than 1 cent was spent on prevention. The largest part of the budget goes to the criminal justice sector – about 34%. In 1998, the citizens of Pennsylvania spent almost \$95.00 each towards enforcing laws regarding substance abuse and keeping substance abusers in prison. But it only cost us each \$8.50 to provide prevention, treatment and research. The report suggests that perhaps our state and federal priorities are confused [615].

Cost of Substance Abuse and Pregnancy

Neonatal intensive care unit (NICU) and drug treatment costs were compared in two groups of pregnant drug abusing women: 100 admissions to a multidisciplinary treatment program and active in care at the time of delivery and 46 controls not entering drug treatment. Treatment patients showed better clinical outcome at delivery, with less drug use and higher infant estimated gestational age, birth weight and Apgar scores. Infants of treatment patients were also less likely to require NICU services and, for those that did, had a

shorter stay. When total cost was examined (including drug treatment), mean net savings for treatment subjects was \$4644 per mother/infant pair [616].

A study investigated the clinical and financial impact of self-reported maternal drug history and documented intrauterine substance exposure on maternal-neonatal morbidity and hospital costs. Among women reporting a history of substance abuse during or prior to the index pregnancy, (a) maternal hospital costs were significantly higher and more variable; (b) birth weight, length, and gestational age were lower; (c) no significant differences were noted in the number of maternal risk factors or neonatal complications and hospital costs. In comparison of neonates with positive toxicology screens and a matched control group, there were no differences in neonatal outcomes or costs, but the number of complicating maternal risk factors and maternal hospital costs were significantly different [617].

Effective comprehensive care of drug addicted women has been shown to improve maternal and neonatal outcomes. The Center for Addiction and Pregnancy (CAP) combines the disciplines of pediatrics, substance abuse treatment, obstetrics/gynecology, and family planning in an effort to reduce the barriers to care often presenting in this subpopulation. For the first 100 CAP births, 82% were delivered vaginally, with a mean gestational age of 38 weeks. The Neonatal Intensive Care Unit admission rate was 10%, and the Bayley Scales of Infant Development performed at 6 and 12 months revealed mean developmental indices within the normal range. In a comparison study, a group of CAP participants had nearly \$5,000 savings in costs when compared to a matched cohort [618].

Cost of Mental Illness

It is estimated that in 1985, direct treatment and support accounted for \$42.5 billion or 11.5% of the total personal health care spending for all illnesses, while the total economic costs of mental illness were \$103.7 billion [619]. Estimates for the amount of money spent on mental illness more recently have also been made: \$73+ billion/year [603]. A sample of adults who responded to the 1994 National Health Interview Survey (N=77,183) were evaluated from this perspective. People who reported mental disorders experienced significant barriers to receipt of medical care. People w/ mental disorders showed no difference from those without mental disorders in likelihood of being uninsured or of having a primary care provider, but were 2x as likely to report having been denied insurance because of a preexisting condition or having stayed in their job for fear of losing their health benefits. Among respondents with insurance, those who reported mental illness were no less likely to have a primary care provider but were about 2x more likely to report having delayed seeking needed medical care because of cost or having been unable to obtain needed medical care [620].

A study compared the health and disability costs of depressive illness with those of four other chronic conditions among employees of a large U.S. corporation. Data from the health and employee files of 15,153 employees of a major U.S. corporation who filed health claims in 1995 were examined. Analyses compared the mental health costs, medical costs, sick days, and total health and disability costs associated with depression as well as heart disease, diabetes, hypertension, and back problems.: Employees treated for depression incurred annual per capita health and disability costs of \$5,415, significantly more than the cost for hypertension and comparable to the cost for the three other medical conditions. Employees with depressive illness plus any of the other conditions cost 1.7 times more than those with the comparison medical conditions alone. Depressive illness was associated with a mean of 9.86 annual sick days, significantly more than any of the other conditions. Depressed employees under the age of 40 years took 3.5 more annual sick days than those 40 years old or older [621].

Longitudinal prospective data from the multisite Epidemiologic Catchment Area (ECA) survey were examined to determine relationships between mental disorders, alcohol abuse or dependence, and transfer payments for disability. ECA respondents who were not receiving disability benefits at baseline but who were receiving them at the one-year follow-up were identified. The effects of six psychiatric disorders on the risk of starting disability payments were examined. Respondents with panic disorder were 5.2 times more likely to begin receiving benefits than those without this disorder; respondents with schizophrenia were 4.5 times more likely and those with two or more disorders were 2.8 times more likely to start benefits than those without these disorders [622].

Cost of Mental Illness and Substance Abuse

The burden of mental illness and substance abuse on American society has been known for some time, although indirect costs are always difficult to measure. Adding alcohol and drug abuse to mental illness for an estimate of total losses to the economy, the 1988 estimate was \$273.3 billion, including \$85.8 billion for alcohol abuse and \$58.3 billion for drug abuse. This figure included \$47.5 billion in other related costs, including the costs of crime, motor vehicle crashes, fire destruction, and the value of productivity losses for victims of crime, incarceration, crime careers, and caregiver services. The cost of acquired immunodeficiency syndrome associated with drug abuse was estimated at \$1 billion, and the cost of fetal alcohol syndrome was estimated at \$1.6 billion [623].

Among 642 patients with comorbid substance-related disorder and dysthymia 39 had substance-related disorder and dysthymia and 308 had substance-related disorder only (the remaining patients had other comorbid

conditions). Patients with substance-related disorder and dysthymia had received more substance-related disorder treatment in 18 of 20 measures. Patients with substance-related disorder and dysthymia used 4.7 times more substance-related disorder treatment dollars than patients with substance-related disorder only, although their demographic characteristics were similar. [624].

Of 203 persons in treatment for dual disorders, over a three year period 169 participants (83%) had contact with the legal system, and 90 (44%) were arrested at least once. The three-year costs averaged \$2,680 per person. Continued substance use and unstable housing were associated with a greater likelihood of arrest [625]

In a study of dually diagnosed veterans, dually diagnosed outpatients incurred consistently higher health care costs than other psychiatric outpatients, attributable to higher rates of inpatient psychiatric and substance abuse care; however, this difference decreased with time. Costs were substantially higher in the inpatient cohort overall, but there were no differences in cost between dually diagnosed and other patients [626]. In a related study, data from a national sample of patients with a primary diagnosis of a substance use disorder were analyzed to examine whether having a comorbid psychiatric diagnosis was associated with increased costs of health services over a six-year period and whether dually diagnosed patients used particular types of services more frequently. A national sample of substance abuse patients being treated in Veterans Affairs facilities was classified into two groups – those with a dual diagnosis and those with a single diagnosis and together this sample comprised over 12,500 people. Dual diagnosis was associated with a significantly increased total cost of care over the six years, which was primarily explained by increased utilization of outpatient psychiatric and substance abuse services. Costs for both groups decreased over time, but they decreased faster among dually diagnosed patients [627].

In a large study, the National Health Interview Survey (N=77,183), 1994, researchers looked at the combination of depression and substance abuse. Major depression is associated with a total cost to society of \$44 billion, while substance abuse has been estimated to cost the U.S. economy more than \$144 billion per year. Self-reported depressive syndromes or substance abuse had mean health care costs that were \$1,766 higher than costs for individuals without these conditions, varying from a low of \$1,246 for individuals with substance abuse to a high of \$5,318 for comorbid substance abuse and depressive syndromes. Depressive syndromes were associated with increases in both inpatient and outpatient costs. Substance abuse was almost exclusively associated with increased inpatient expenditures rather than outpatient costs. Only 14.3% of visits made by individuals reporting depressive symptoms or substance abuse were made to specialty health providers – psychiatrists, psychologists, and social workers. Having depressive syndromes or substance

abuse was associated with significantly increased use of services regardless of insurance type, but the largest cost increase associated with these conditions was seen for individuals covered by Medicare and Medicaid where mean incremental costs associated with the conditions were \$2,124. The increased outpatient costs associated with the depressive syndromes and substance abuse were primarily driven by general medical visits rather than by visits to specialty mental health care providers [628].

As one set of investigators point out, current drug policy, particularly as it applies to those with a dual diagnosis, has an emphasis on criminal justice system solutions. It is extremely expensive (incarceration alone is variously estimated as costing \$25,000 to \$45,000 per year per person), and does little to treat, prevent, or consequently, reduce the problem. The authors proposed that a comprehensive, long-term program with a case-management focus will produce better outcomes and be more cost-effective than the current approach to managing the illnesses of women on Temporary Assistance for Needy Families (TANF) who are afflicted with both drug dependency and mental illness, i.e. a dual diagnosis. Additionally, a comprehensive approach would diminish the generational cycle of substance abuse, dysfunction (including violence), and dependence on public support, which is too often the pattern in single-parent homes where the mother has been dually diagnosed [629].

Cost of Violence and Abuse

Violence is the second leading cause of injuries to women between the ages of 15 and 44 [397]. Based on an estimate from the National Crime Victim Survey, domestic violence results in 100,000 days of hospitalization, almost 30,000 emergency room visits, and nearly 40,000 visits to physicians every year [630]. As compared with women who are not the victims of domestic violence, female victims receive more inpatient and outpatient health care for trauma and non-trauma related surgical conditions, medical and nonspecific conditions, suicide attempts, psychiatric treatment, non-trauma related medical emergencies, elective abortions, and miscarriages, resulting in increased use of resources that continues for years after the violence ends [631]. In recent research, Mary Koss found that victimized females were 2.5 times more costly to the health care system than women who have never been the victims of abuse [403, 404].

Another way of looking at costs is to attempt valuations based on specific kinds of traumatic events. For example, every incident of child sexual abuse has been estimated to cost the victim and society at least \$99,000[632].

Irazuta and colleagues looked at the child abuse admissions to a pediatric intensive care unit and found that these cases had the highest severity of illness,

the highest hospital charges, and the highest mortality rates. The medical bills for the acute care of the child abuse patient averaged \$35,641 per case and even with these expenditures, 70% died and 60% of the survivors had severe residual morbidity (1997). In the United States every year, domestic violence results in almost 100,000 days of hospitalizations, almost 30,000 emergency department visits, and almost 40,000 visits to physicians [64]. Domestic violence already costs companies nation-wide \$3-5 billion annually in absenteeism, reduced productivity, and increased health care costs [633]. According to a 1996 National Institute of Justice study, domestic crime against adults accounts for almost 15% of the total crime costs – over \$67 billion a year [634].

Researchers wanted to find out how much medical utilization was incurred by adult women who were victims of childhood sexual abuse (CSA). Of the 395 participants in the study, 23% reported past CSA on the survey. Women who experienced CSA reported 44 out of 51 physical and psychosocial symptoms more frequently than their counterparts who reported no past CSA. Further, they experienced these symptoms more intensely and in greater number. In their charts, however, far fewer differences in symptoms between groups were found. Nonetheless, women who experienced CSA visited the primary care clinic an average of 1.33 more times than women with no CSA, and they incurred an average of \$150 more in primary care charges over a 2-year period [635].

In 1987 physical injury to people age twelve and older resulting from rape, robbery, assault, murder, and arson caused about \$10 billion in potential health-related costs, including some unmet mental health care needs. It led to \$23 billion in lost productivity and almost \$145 billion in reduced quality of life (in 1989 dollars). If associated deaths and cases resulting in psychological injury only are included, costs average \$47,000 for rape, \$19,000 for robbery, \$15,000 for assault, and \$25,000 for arson. Considering only survivors with physical injury, rape costs \$60,000, robberies \$25,000, assaults \$22,000, and arson \$50,000. Costs are almost \$2.4 million per murder. Lifetime costs for all intentional injuries totaled \$178 billion during 1987-1990 [636].

Records of 318 adult and 608 child victims of crime, eligible for Crime Victims Compensation (CVC) in Washington State, were examined in one study. Demographic, crime, and mental health information was collected. A majority of child victims had experienced sexual assault (88%); adults were victims of both sexual (38%) and physical assault (40%). The median number of mental health sessions used by children was 23 sessions, at an average cost of \$975 per case to the CVC program. Adults used a median of 15 mental health sessions at a cost of \$905. Patterns of treatment utilization were associated with some demographic, crime, and psychological variables. Sexual assault and PTSD diagnosis were associated with greater use for both children and adults. Therapist variables were unrelated to use [637].

As the epidemic of violence has grown, other investigators have looked at the specific costs of violence to the society, both at micro and the macro levels. One researcher in the ophthalmology department of an inner-city hospital on the East Coast, determined the number of ocular injuries secondary to trauma and then calculated that just for the 48% of patients who had to be hospitalized, the direct costs for hospitalization were \$975,089 [638]. Another group looked at how much it cost to provide acute care for violence related injuries in one hospital for a year – they estimated \$8,000,000, and 80% of that was paid for with public funds [639]. Another group looked at the financial impact of intentional violence on a community hospital and calculated that in a four year period there were 108 firearm injuries and 103 injuries related to cutting or piercing injuries, with hospital charges of over \$2,000,000 while the hospital was only reimbursed for 30% of these charges [640]. Reviewing the utilization of hospital resources by children admitted for injuries that had been intentionally inflicted, investigators noted that these children use more hospital resources and consequently incur higher hospital charges than those with unintentional injuries [641]. Another group looked at gunshot wounds to children in an urban pediatric hospital from 1986-1992 and calculated that there were 4,587 admissions costing an estimated \$1.63 million to the hospital since so many of the patients had public or no insurance. [169].

The Cost of Sexual Assault

In 1996, the National Institute of Justice calculated the costs and consequences of personal violent crime in America using figures from 1987 and dollars valued at 1989 prices. Every incident of child sexual assault has been estimated to cost the victim and society at least \$99,000 [632]. The total estimated cost for child rape and other sexual abuse was \$23 billion. Despite this, at the most, only half of the child abuse victims receive mental health care. And as newspaper accounts frequently tell us, child protective services are woefully inadequate and focused on investigation rather than on providing services – even though the total U.S. spending on child welfare services is about \$22 billion [642, 643].

And what are we doing about this enormous problem? Not nearly enough. Let's take one graphic example. The annual incidences of cancer and child abuse are approximately equal. The annual budget for the National Cancer Research Institute is \$2300 million. In contrast, the annual budgets for all national programs related to child abuse by the National Institutes of Mental Health, the National Institute for Child Health and Human Development, the National Institute for Drug Abuse, and the Center for Disease Control in 1992 amounted to only \$14.2 million [644].

According to National Institute of Justice findings, in 1987 physical injury to people age twelve and older as a result of rape, robbery, assault, murder, and arson caused about \$10 billion in potential health-related costs, including some unmet mental health care needs. This led to \$23 billion in lost productivity and almost \$145 billion in reduced quality of life. If associated deaths and cases resulting in psychological injury only are included, costs average \$47,000 for rape, \$19,000 for robbery, \$15,000 for assault, and \$25,000 for arson. Considering only survivors with physical injury, each rape cost society \$60,000. Lifetime costs for all intentional injuries totaled \$178 billion during 1987-1990 [636].

Workplace Violence, Substance Abuse and the Bottom Line

The costs of violence in the American workplace are enormous. A U.S. Department of Justice study found that, as a result of workplace violence, more than 500,000 employees miss 1,800,000 days of work annually, resulting in more than \$55,000,000 in lost wages, not including days covered by sick and annual leave [645]. According to a Northwestern National Life Insurance Company study, incidents of violence, threat, and harassment cost companies more than \$4 billion in lost work and legal expenses in 1992 [633]. The National Safe Workplace Institute reports that the average cost to employers of a single episode of workplace violence can amount to \$250,000 in lost work time and legal expenses [633], while 111,000 incidents of workplace violence cost employers an estimated \$4.2 billion in 1993 [646]. Of those attacked, threatened, or harassed, about half experience a disruption in work and about one-fourth became physically injured or sick [646]. Additionally, the current outlay for security at the workplace is more than 22 billion annually, well in excess of the amount spent on the nation's police departments [647].

Disability Costs

The 1994-1995 National Health Interview Survey of Disability was the largest disability survey ever conducted in the United States. A national sample was screened for disability, defined as limitation or inability to participate in a major life activity. Of 106,573 adults, 1.1% reported functional disability from mental conditions, 4.8% from general medical conditions, and 1.2% from combined mental and general medical conditions. Disabilities attributed to a mental condition were predominantly associated with social and cognitive difficulties; those attributed to general medical conditions with physical limitations, and combined disabilities with deficits spanning multiple domains. Comorbid medical and mental conditions were associated with a twofold increase in odds of unemployment and a two-thirds increase in odds of support on disability payments compared to respondents with a single form of disability. More than half the nonworking disabled reported that economic, social, and job-

based barriers contributed to their inability to work. One-fourth of working disabled people reported discrimination on the basis of their disability during the past 5 years. The authors conclude that an estimated three million Americans (one-third of disabled people) reported that a mental condition contributes to their disability [648].

In a survey of 6,239 employees of three corporations, the odds of missed work due to health problems in 1995 were twice as high for employees with depressive symptoms in both 1993 and 1995 as for those without depressive symptoms in either year. The odds of decreased effectiveness at work in 1995 was seven times as high. Among individuals with depressive symptoms in 1993, a report of one or more problems with clinical care in 1993 predicted a 34% increase in the odds of persistent depressive symptoms and a 66% increased odds of decreased effectiveness at work in 1995 [649].

In a study of 15,153 employees of a major U.S. corporation, investigators looked at total health and disability costs associated with depression and four other conditions: heart disease, diabetes, hypertension, and back problems. Treatment for depression incurred annual per capita health and disability costs of \$5,415, significantly more than the cost for hypertension and comparable to the cost for the three other medical conditions. Employees with depressive illness plus any of the other conditions cost 1.7 times more than those with the comparison medical conditions alone. Depressive illness was associated with a mean of 9.86 annual sick days, significantly more than any of the other conditions. Depressed employees under the age of 40 years took 3.5 more annual sick days than those 40 years old or older [621, 650]

The Cost of the Bullets

The cost of the U. S. entrancement with the gun is, perhaps, inestimable. Nonetheless, we do have some data available. In 1992, gunshots killed 37,776 Americans; cut/stab wounds killed 4095. Another 134,000 gunshot survivors and 3,100,000 cut/stab wound survivors received medical treatment. Annually, gunshot wounds cost an estimated U.S. \$126 billion. Cut/stab wounds cost another U.S. \$51 billion. The gunshot and cut/stab totals include U.S. \$40 billion and U.S. \$13 billion respectively in medical, public services, and work-loss costs. Across medically treated cases, costs average U.S. \$154,000 per gunshot survivor and U.S. \$12,000 per cut/stab survivor. Gunshot wounds are more than three times as common in the U.S. as in Canada, which has strict handgun control. With the same quality of life loss per victim, gunshot costs per capita are an estimated \$495 in the U.S. vs. \$180 in Canada [651].

In more recent cost analyses of Maryland for 1994-1995 and New York for 1994 and from emergency departments in South Carolina for 1997, estimated

national acute-care and follow-up treatment costs and payment sources for gunshot injuries were made. At a mean medical cost per injury of about \$17,000, the 13,4445 gunshot injuries in the United States in 1994 produced \$2.3 billion in lifetime medical costs (in 1994 dollars, using a 3% real discount rate), of which \$1.1 billion (49%) was paid by US taxpayers. Gunshot injuries due to assaults accounted for 74% of total costs [651, 652].

Adding It Up

In 1993, Miller, Cohen, and Rossman calculated the victim's costs of violent crime for the United States using figures from 1987 and dollars valued at 1989 prices. According to their findings, in 1987 physical injury to people age twelve and older as a result of rape, robbery, assault, murder, and arson caused about \$10 billion in potential health-related costs, including some unmet mental health care needs. This led to \$23 billion in lost productivity and almost \$145 billion in reduced quality of life. If associated deaths and cases resulting in psychological injury only are included, costs average \$47,000 for rape, \$19,000 for robbery, \$15,000 for assault, and \$25,000 for arson. Considering only survivors with physical injury, rape costs \$60,000, robberies \$25,000, assaults \$22,000, and arson \$50,000. Costs are almost \$2.4 million per murder. Lifetime costs for all intentional injuries totaled \$178 billion during 1987-1990 [636]. When the cost of pain, suffering, and the reduced quality of life is taken into consideration, the cost of crime to victims is an estimated \$450 billion a year [632].

Cost of Treatment

According to a report on effective treatment of drug abuse from the National Institute of Drug Abuse, using conservative estimates every \$1 invested in addiction treatment programs yields a return of between \$4 and \$7 in reduced drug-related crime, criminal justice costs, and theft alone. When savings related to health care are included, total savings can exceed costs by a ratio of 12:1. The report points out that major savings to the individual and to society also come from significant drops in interpersonal conflict including improvements in workplace productivity, and reductions in drug-related accidents [653].

A study examined the hypothesis that treatment reduces medical utilization and costs of patients with substance use problems. Over 10,000 adult patients, men and women, entering the outpatient chemical dependency recovery program at Sacramento Kaiser Permanente over a 2-year period were recruited into the study. Medical utilization and costs were examined for 18 months prior and 18 months after intake. The treatment cohort was less likely to be hospitalized and there was a trend for having spent fewer days in the hospital in the post-treatment period compared to pretreatment period. These patients

were also less likely to visit the emergency room and had fewer ER visits following treatment. Inpatient, ER and total medical costs declined by 35%, 39% and 26%, respectively. Reductions in cost were greater for the treatment cohort when compared with the matched sample. Among women, there were significant reductions in inpatient, ER and total costs for the study cohort when compared with the matched sample; among men, the reductions in inpatient and ER cost (but not total cost) were significantly larger for the study cohort when compared with the matched sample. For the treatment cohort, the change in medical cost was not significantly different by gender. Changes in cost were significantly different across the various age groups for the study cohort and the matched sample. Among those in the group aged 40-49 years, the decline in cost for study cohort was significantly larger than for the matched sample [654].

In one large public behavioral health system, data on demographic characteristics, financial resources, clinical disorders, service use patterns, and costs of care were analyzed for 10,905 African-American and 19,069 white women between the ages of 18 and 59 years who received behavioral health services in 1997. The African-American women were more likely to be older, never married, unemployed, and eligible for Medicaid and to have a diagnosis of a psychotic disorder or a substance use disorder. African-American women were more likely than white women to receive inpatient substance abuse services and to receive more community-based day treatment services, medication services, and case management services. However, the costs of that care differed by only 2-4% from those for white women. Presence of a psychotic disorder and co-occurring substance use-need-related factors-were significant predictors of higher inpatient care costs for all the women in the sample. Presence of a psychotic or major affective disorder and eligibility for Medicaid-an enabling factor-were the most significant predictors of higher outpatient costs for the sample. Receipt of more community-based services was significantly and inversely related to inpatient care costs, regardless of race [655].

In 1993 and 1995, the federal government awarded 27 five-year grants that supported 35 residential treatment projects for substance- abusing pregnant and postpartum women and their children. These projects provided comprehensive culturally and gender-specific treatment. Preliminary aggregated data collected in a national cross- site evaluation of 24 of these projects are encouraging with respect to infant mortality and morbidity, treatment retention and completion rates, and behavioral changes in the participating mothers at six months post-discharge [656].

Because of high drop out rates, it is important to determine if enhancing standard substance treatment services will impact treatment completion rates among those in need of specialized services who are involved in the criminal justice system. The purpose of this research was to understand the impact of providing mental health services and gender-specific services for women in a

modified therapeutic community setting. In the study, those who received mental health services and/or gender-specific treatment services, in addition to the substance abuse services, had similar rates of treatment completion as compared to those who received only substance abuse services. Age and length of time using one's primary drug were the only statistically significant predictors of treatment completion – the older the person and the longer they had been using a drug, the more likely they were to complete treatment. The results suggest that the treatment model described in this article is a potentially cost-effective method of maximizing existing resources for treating substance abusing criminal offenders in community-based treatment settings [657].

In a study examining the rate and duration of outpatient substance abuse treatment following inpatient detoxification under managed care, seven years of claims data from a large behavioral health care carve-out plan were used to identify patients. Rates and duration of formal substance abuse treatment following detoxification were calculated, and regression models were used to explore factors that may affect participation in treatment. Seventy-nine percent of the detoxification patients received formal substance abuse treatment, the majority within the week following discharge. Formal follow-up care lasted an average of ten weeks, with visits occurring on average about once a week. When other variables likely to influence participation in substance abuse treatment were controlled for, the level of outpatient co-payments significantly affected the rate of participation in treatment [658].

Some people have become concerned that in saving cost we may be compromising efficacy. In one study, researchers looked at inpatient costs and outpatient costs. They found that in terms of simple cost, in-patient detoxification is much more expensive than out-patient treatment (ratio, 24:1), but with adjustment for successful outcome, the costs are almost identical (ratio, 0.9:1). Comparison of specialist and general psychiatry in-patient settings showed that even when adjusted for clinical outcomes, the specialist setting is more costly (ratio, 1.9:1), although the outcomes are better [659].

In a study that looked at 12-Step-oriented inpatient treatment programs emphasizing 12-step treatment approaches and the importance of ongoing attendance at 12-step self-help groups were compared to cognitive-behavioral (CB) inpatient treatment programs, investigators found that compared with patients treated in CB programs, patients treated in 12-step programs had significantly greater involvement in self-help groups at follow-up. In contrast, patients treated in CB programs averaged almost twice as many outpatient continuing care visits after discharge (22.5 visits) as patients treated in 12-step treatment programs (13.1 visits), and also received significantly more days of inpatient care (17.0 days in CB versus 10.5 in 12-step), resulting in 64% higher annual costs in CB programs (\$4,729/patient). Psychiatric and substance abuse outcomes were comparable across treatments, except that 12-step patients had

higher rates of abstinence at follow-up (45.7% versus 36.2%) for patients from CB programs [660].

Looking now at the incarcerated population, the National Center on Addiction and Substance Abuse at Columbia University estimate that based on available data, the cost of providing residential treatment in prison for a year for an inmate who is a regular drug and/or alcohol abuser is \$3,500 per year, in addition to incarceration costs. To provide the majority who are not high school graduates (61% of state inmates with histories of regular drug use) with education to obtain a GED and to provide vocational training and aftercare for all treatment participants would add another \$3,000, for an estimated total of \$6,500 per inmate for a comprehensive treatment and training program.

However, for each inmate who successfully completes a treatment program and returns to the community as a sober parolee with a job, the following economic benefits will accrue just in the first year of release: \$5,000 in reduced crime savings, conservatively assuming that drug-using ex-inmates would have committed 100 crimes per year with \$50 in property and victimization costs per crime; \$7,300 in reduced arrest and prosecution costs (assuming that they would have been arrested twice per year); \$19,600 in reduced incarceration costs (assuming that one of those rearrests would have resulted in a one year prison sentence); \$4,800 in health care and substance abuse treatment cost savings, the difference in annual health care costs between substance users and nonusers; \$32,100 in economic benefits (\$21,400--the average income for an employed high school graduate--multiplied by the standard economic multiplier of 1.5 for estimating the local economic effects of a wage).

Under these conservative assumptions, the total benefits that would accrue during the first year after release would be \$68,800 for each successful inmate. The estimated benefits do not include reductions in welfare, other state or federal entitlement costs or foster care. Given these substantial economic benefits, the success rate needed to break even on the \$6,500 per inmate investment in prison treatment is modest: if only 10% of the inmates who are given one year of residential treatment stay sober and work during the first year after release, the treatment investment is more than returned in economic benefits. Even with this difficult inmate population, a 15% success rate should be achievable with a full-scale residential treatment program accompanied by appropriate health care and educational and job training services. There are 1.2 million inmates who are drug and alcohol abusers; the other 200,000 of the 1.4 substance-involved inmates are drug dealers who do not use drugs. If we successfully treat and train only 10% of those inmates--120,000--the economic benefit in the first year of work after release would be \$8.256 billion. That's \$456 million more than the \$7.8 billion cost of providing treatment and training (at a cost of \$6,500 each) for the entire 1.2 million inmates with drug and alcohol

problems. Thereafter, the nation would receive an economic benefit of more than \$8 billion for each year they remain sober and employed [366].

Welfare Reform

In September, 2002, the United States Congress will decide whether to reauthorize or change TANF – Temporary Aid to Need Families, a state- operated cash assistance program designed to move mothers off of welfare and into work that replaced AFDC (Aid to Families with Dependent Children) – the heart of “welfare reform”. TANF placed a five-year, once-in-a-lifetime limit on families’ public assistance eligibility; made work or work experience a condition for most aid; limited access to education, job training, and social services – regardless of the relevance of these supports to an individual’s ability to earn a living wage; and ended welfare eligibility for many non-citizens. In addition, welfare reform gave individual states and localities a range of financial incentives through which they could reduce their welfare rolls, including giving them little restrictions on the lump sum payments they would get from the Federal government. States can also make benefit application procedures more difficult; limit benefits to a maximum of five years in a lifetime; require recipients to find a job or take part in workfare programs through which they would “earn” their benefits through unsalaried labor; institute a range of sanctions and penalties through which benefits could be denied or reduced; and limit or eliminate guidance around non-cash benefits and supports [661]

Early claims of welfare reform success were based primarily on the rapid decline in the number of people receiving assistance. These caseload statistics, however, say nothing about the long-term employment prospects of people leaving welfare, the well-being of children in the families that welfare was used to assist, or in other changes that may not be reflective of improvement in the general welfare of society as a whole. Aggregate measure of work and earnings paint a positive picture of the former welfare population, but there are elements of the low-income population that are suffering as a result of welfare reform. Many face substantial barriers to employment. Many who do find jobs lose other supports designed to help them, such as food stamps and health insurance leaving them no better off, and sometimes worse off, than when there were not working. As for children, parental work appears to yield better outcomes for children only when it results in additional financial resources for the family – and then only in some subgroups. Early data show that children in welfare families and in families that have left welfare are at similar risk for poor development outcomes, and that there have been no major shifts in well-being for either group. Funding for child care is simply too low to meet the needs of low-income families in a work-oriented welfare system [662].

A recent research report was released sponsored by the United Way and the New York City Chapter of the National Association of Social Workers to look at the impact of welfare reform on the capacity of nonprofit human services to serve low-income communities using 107 agencies in New York City as the data base, and more broadly, to look at the impact welfare reform is having on the women and children that these agencies serve [661]. A summary of the study findings shows that regardless of how disparate the agencies surveyed were, their responses were extraordinary uniform in terms of the characteristics of their client populations and of the problems they faced as a result of welfare reform. Agencies are shifting significant proportions of their time and resources away from social services to welfare department mandates. They have had to reduce the amount and quality of information and guidance they usually provide to welfare recipients in order to help clients understand the parameters of the new process and 60% of the agencies have had to spend increasing amounts of time helping clients to manage or fight the new welfare department penalties. They report that dealing with these unfair measures compromises their ability to carry out case management or provide core services.

As thousands of recipients have slipped through the cracks, either because they irreparably lose their benefits to the new regulations or because they cannot handle the mandated work requirements – workers at a majority of agencies have been deluged with requests for emergency cash, housing, medical services and food. Emergency food providers alone turned away more than 48,000 during 2000. Meanwhile workers engage in a continual search for new resources to help an expanding number of clients deal with hunger, illness, and homelessness. Workers at 80% of the agencies are spending more time dealing with the workfare requirements due to enormous increases in requests for education or vocational support such as job training, GED, literacy and college-level programs, and childcare. Across the board agency workers are “running uphill” trying to fix the problems created by welfare reform including: doing more with less, racing from one case to another; helping clients to deal with welfare-related emotional stresses and family crises, particularly fears of having to leave children in unsafe or unknown childcare arrangements in order to meet welfare’s work mandates; managing with less cooperation from the local welfare office backed by legislation that promotes deterrence and penalties; facing morally or professionally troublesome ethical dilemmas that seriously complicate their work; managing feelings of reduced effectiveness and burnout while still trying to make a difference.

Nonprofit agencies are also modifying, or eliminating, operations, services, and priorities in the wake of welfare’s changing rules, requirements, and reimbursement policies: 85% said they need new services; 77% need staff with a different set of skills; and 74% need additional staff training on welfare. By placing an almost exclusive emphasis upon employment, the welfare law has led

many nonprofit agencies to replace or supplement existing rosters of services with strictly employment-focused activities and have thus lost the supportive services like social services, education and childcare that actually can help low-skilled people move from welfare to paid work. By forcing providers to focus almost exclusively on client's basic survival and work-related needs, the new laws have restricted workers ability to address long-term, complex psychological issues. By eliminating TANF and Medicaid eligibility for many welfare recipients and cutting back on funding, the new laws have curtailed the ability of human service providers to offer vital services previously covered through these reimbursement mechanisms. As the author of the report asserts:

In sum, In Jeopardy documents how welfare reform has forced agencies across the spectrum of the City's social service system into a range of debilitating changes and compromises. It illuminates workers' feelings of burnout and demoralization, their measurably higher rates of sick leave, and the faster pace of turnover in the wake of these changes. It reports workers perception that by concentrating so heavily on securing benefits or moving clients into employment, they are prevented from pursuing a host of equally important goals for their clients, such as finding steady work that pays well, reducing domestic violence, promoting substance abuse recovery, improving parenting skills, advancing educational credentials, or attaining mental health. By increasing the economic insecurity of clients, complicating the responsibilities of workers and altering the priorities of agencies, the study concludes that welfare reform has placed the entire social service system in jeopardy. Ultimately, this report demonstrates that by joining forces, workers and agencies can secure changes that will once again allow the system to do its best for low-income communities p. 13, Executive Summary [661].

As is evident from this review, the complex nature of the overlapping problems characterizing poverty, substance abuse, and exposure to violence must be taken into account if women and children are to improve their level of function. Depression interferes with workplace productivity and the degree of depression, PTSD, and substance abuse in the welfare population needs to be taken into account in welfare-to-work programs. In a large survey of over 6,000 employees of three major corporations, the odds of decreased effectiveness at work as a result of depression was seven times as high for depressed individuals. Likewise, the odds of missed work due to health problems was twice as high for employees with depressive symptoms [649].

Does going to work improve the life circumstances for women who have been on welfare? Using data from the Washington State Family Income Study (FIS), research examined women's psychosocial health when making the

transition from welfare receipt to employment. No differences in psychosocial health were found between women leaving welfare for employment and those remaining on welfare on depression, self-esteem, self-efficacy, and emotional support. This finding is consistent with earlier qualitative research, which indicates the life circumstances of women leaving welfare for paid employment rarely improve [663].

There is strong clinical evidence to support that women who are on welfare, and are substance abusers, need a significant degree of help to get back into the workplace and a lot of social support. In one study, researchers explored outcomes for fifty-nine women who attended long-term substance abuse treatment in a women's facility that emphasized employment and economic self-sufficiency. Reductions in substance use were associated with an increase in economic autonomy. Improvement in other life domains was positively associated with measures of economic self-sufficiency. Women living in drug-free social environments had higher rates of abstinence and better overall functioning. At least among women who participated in our study, economic outcomes, substance use, and general functioning went hand-in-hand. The authors suggest that eliminating services such as employment assistance may, while reducing cost, also negatively impact outcomes among the most vulnerable clientele [664].

Another group of researchers collected data on women in Florida's welfare program (WAGES). The women manifested serious problems in terms of physical and mental health, employment skills and childcare needs. The length of time on welfare was strongly associated with the severity of recipients' problems. Women with 2 + years on welfare were significantly more likely to have problems. However, substance use was lower than anticipated which may be because substance abusers are dropping out of welfare. This possibility raises concerns that, rather than going into the workforce, women may be returning to the streets. If so, instead of reducing the welfare costs, we are shifting those costs to local health, social service and criminal justice systems [665].

Recent welfare reform policies could fundamentally change the nature of public-sector substance abuse services available to women. A review summarized what is presently known about substance abuse services and women on welfare, and identifies limitations in current knowledge about the potential effects of welfare reform. Five crucial areas were examined in which research on services has fallen short: (1) assessing the need for substance abuse services across a broad spectrum of welfare populations, (2) exploring the role that alcohol and drug problems play in welfare dependency, (3) examining how welfare programs can serve as pathways to alcohol and drug treatment, (4) evaluating the effectiveness and costs of innovative welfare-treatment programs, and (5) understanding systems-level adaptations in substance abuse services for women that result from changing welfare policies. These investigators suggest that

researchers who study services should take a broad view of these issues—one that considers the unique situation of poor women and single mothers, that views substance abuse within a work impairment or disabilities framework, and one that is attuned to future changes in the effects of welfare reform as the economy and labor markets undergo change [666].

Each year states spend close to \$11 billion for their share of welfare and the largest share of welfare cases are caused or exacerbated by substance abuse and addiction. For each unemployed substance-abusing woman on welfare who becomes self-supporting and actively engaged in recovery, the annual economic benefit to society is about \$48,000 per year in avoided welfare, health care and criminal justice costs and potential contributions to the economy in employment [537]. A program called CASAWORKS for Families attempts to provide a comprehensive program for substance-abusing women and their children. The comprehensive package includes ten concurrent services for substance-affected women receiving public assistance. The combination is designed to provide the support necessary to reduce substance use, find and retain employment, inhibit and prevent family violence, and foster quality parenting. Their motto is: “treatment is training and training is treatment” and “treatment is work and work is treatment”. Preliminary data available on the 236 women in the program indicates that after twelve months, participants showed statistically significant increases in past month abstinent from alcohol, cocaine and marijuana. Eighty-one percent of those enrolled in the program remained active after three months; 59% after six months; 50% at nine months and 34% at 12 months. For participants who have been followed for 12 months, employment during this time frame more than doubled; 18% of the sample were employed at intake while 42% were employed at 12 months. Employed participants’ average income from work during the past 30 days rose from \$105 to \$546 [537].

X. Dual Diagnosis Treatment

In Fiscal Year 1995, there were nearly 1.9 million admissions to publicly funded substance abuse treatment. About 54% were alcohol treatment admissions and nearly 46% were for illicit drug abuse treatment. In 1995, nearly 30% of the people in treatment were women. Of racial groups, 56% were White, 26% were African Americans, 8% were Hispanics, 2% were Native Americans, and .6% were Asians and Pacific Islanders. Fifty-nine% of these admissions were treated in an ambulatory environment [667]. Every day, more than 700,000 people in the United States receive treatment for alcoholism [3]. According to state alcohol and drug abuse directors, 1,052,020 Pennsylvania residents need alcohol and/or drug treatment [8].

According to several studies, drug treatment reduces drug use by 40%-60% and significantly decreases criminal activity during and after treatment. Generally, for residential or outpatient treatment, participation for less than 90 days is of limited or no effectiveness, and treatments lasting significantly longer are often indicated. For methadone maintenance, 12 months of treatment is the minimum, and some opiate-addicted individuals will continue to benefit from methadone maintenance treatment over a period of years. Many addicted individuals have multiple episodes of treatment, often with a cumulative impact [653].

The National Institute for Drug Addiction has established principles of effective treatment for drug abuse, based on a large research base. They first emphasize that no single treatment is appropriate for all individuals and that matching treatment settings, interventions and services to each individual's particular problems and needs is critical to success. Treatment needs to be readily available and accessible so that interveners can follow the dictum of "strike while the iron is hot". Effective treatment attends to multiple needs, not just to drug abuse. An individual's treatment and services plan must be continually assessed and modified as necessary to ensure that the plan meets the person's changing needs. Remaining in treatment for an adequate period of time is critical for treatment effectiveness. The length of time depends on his or her problems and needs but research indicates that for most patients, the threshold of significant improvement is reached at about 3 months in treatment. After this critical threshold is reached, additional treatment can produce further progress toward recovery. Because people frequently terminate treatment prematurely, programs should include strategies to engage and keep patients in treatment. Counseling (individual and/or group) and other behavioral therapies are critical components of effective treatment for addiction. In therapy, patients

address issues of motivation, build skills to resist drug use, replace drug-using activities with constructive and rewarding, non-drug activities and improve problem-solving abilities. Behavioral therapy facilitates interpersonal relationships and the individual's ability to function in the family and community. Medications are an important element of treatment for many patients, especially when combined with counseling and other behavior therapies. Methadone, levo-alpha acetylmethadol, and naltrexone can all be effective aids for opiate addicts. Naltrexone can also help with co-occurring alcohol dependence. Nicotine replacement patches or gum, or an oral medication may be effective components of treating nicotine addiction. For patients with co-occurring mental disorders, medications can be critically important. Addicted or drug-abusing individuals with coexisting mental disorders should have both disorders treated in an integrated way. Medical detoxification is only the first stage of addiction treatment and by itself does little to change long-term drug use. Treatment does not need to be voluntary to be effective. Strong motivation can facilitate the treatment process. Sanctions or enticements in the family, employment settings, or criminal justice system involvement can significantly increase both treatment entry and retention rates as well as the success of drug treatment interventions. Possible drug use during treatment must be continually monitored because this can help the patient withstand the urges to use drugs and can provide early evidence of drug use so that the treatment plan can be readjusted. Feedback to the patient who is tested positive is an important part of monitoring. Treatment programs must provide assessment for HIV/AIDS, Hepatitis B and C, tuberculosis and other infectious diseases, and offer counseling to help patients modify or change health risk behaviors. Recovery from drug addiction is a long-term, process and frequently requires multiple episodes of treatment similar to other chronic illnesses. Relapses can occur during and after successful treatment episodes. Addicted individuals may require prolonged treatment and multiple episodes of treatment to achieve long-term abstinence and fully restored functioning. Participation in self-help support programs during and following treatment is often helpful in maintaining abstinence [653].

The problem of dual diagnosis became a focus of serious clinical concern in the 1980's. Researchers have established three basic and consistent findings: 1) about 50% of individuals with severe mental disorders are affected by substance abuse; 2) dual diagnosis is associated with a variety of negative outcomes including higher rates of relapse, hospitalization, violence, incarceration, homelessness, and serious infections like HIV and hepatitis; 3) the parallel but separate mental health and substance abuse treatment systems deliver fragmented and less-than-effective care. Integrated treatment is essential in order to get better treatment outcomes [668].

Gender Sensitive Programming

Research with chemically dependent women over the past two decades indicates that women substance abusers have special characteristics and needs that warrant gender-sensitive drug-treatment approaches. While the potential benefit of such treatment seems clear, little empirical data is available on how women perceive the effectiveness of gender-sensitive specialized drug treatment. One article presents findings from an exploratory study of the present and past treatment experiences of 24 women in recovery. Results indicated that while some specialized services such as childcare and women-only therapy groups are increasingly available, many drug-treatment programs fail to provide these services in a context that supports and promotes women. As a result, women in drug treatment continue to experience negative stereotyping and sexual harassment as their gender-specific needs remain ignored, silenced, or deemed pathological. Major gaps in drug treatment for women are discussed as are implications for the provision of effective gender-sensitive treatment [669]

As pointed out earlier, the gender-specific needs of women substance abusers is related to the high level of comorbidity with PTSD. In one study of many, the prevalence of post-traumatic stress disorder (PTSD) among a sample of treatment-seeking substance abusers examined the relationship between PTSD comorbidity and rates of inpatient substance abuse treatment. Eighty-four patients (48 male and 36 female) admitted for detoxification at a private hospital were administered self-report measures of lifetime stressor events, PTSD symptomatology, and prior treatment history. Approximately one quarter of the sample was found to present with significant PTSD symptomatology. Women were more likely than men to have been physically and sexually abused, and women reported experiencing a greater number of traumatic events. Consequently, more women than men were classified as having possible PTSD. With respect to inpatient substance abuse treatment admission rates, the PTSD group reported a greater number of hospitalizations than their non-PTSD counterparts [342].

Another study compared the characteristics of 4,117 women treated in publicly funded residential drug treatment programs in Los Angeles County between 1987 and 1994 by pregnancy status and program gender composition, that is, women-only and mixed-gender programs. A logistic regression analysis determined the predictors of program completion. Women in women-only programs were more likely than women in mixed-gender programs to be pregnant, homeless, or on probation; to use methamphetamines; to use alcohol; and have prior drug treatment. Pregnant women were younger, more likely to be homeless, had fewer years of drug use, were more often referred by other service providers, and were less likely to have injected drugs or have prior drug treatment than non-pregnant women. Although women in women-only programs

had more problems, they spent more time in treatment and were more than twice as likely to complete treatment as compared with women in mixed-gender programs [470].

As the National Institute on Drug Addiction notes, women receive the most benefit from drug treatment programs that provide comprehensive services for meeting their basic needs. This may include attending to: food, clothing, shelter; transportation; job counseling and training; legal assistance; literacy training and educational opportunities; parenting training; family therapy; couples counseling; medical care; childcare; social services; social support; psychological assessment and mental health care; assertiveness training; family planning services [225].

In a study of the connection between trauma and addiction for African American women, and women in general, the authors point out that a confrontational technique emphasizing the confrontation of denial and anger that is typical of mainstay treatment for men who are substance abusers, does not work for women but only serves to reinforce the shame and guilt that women are already feeling. Instead, treatment should emphasize values of sharing, trusting, freedom to talk [670].

Treatment Framework and Guidelines

Clinicians experienced with a population of substance abusers who are also trauma survivors are beginning to offer some treatment guidelines: Do not discourage trauma focus; make safety become the first concern; warn patients about the emergence of symptoms of PTSD with sobriety; explore fears about sobriety; get a commitment to small and most urgent gains that focus on harm reduction strategies; maintain clear goals; reduce the shame that is often associated with trauma and may inhibit group processing; consider that the gender of the therapist may be an issue; remember that denial and secrecy are key components of both disorders [312].

Other guidelines include recognizing the need for truly integrated treatment. It is important to conceptualize the two syndromes as independent, coexisting disorders and avoid primary/secondary thinking that treating one will cure the other. Clients must be assessed for the presence of both disorders and after taking into account psychiatric symptoms that are more likely due to a trauma-based syndrome and not just the drug use, diagnosing the two or more disorders, and then treating both disorders simultaneously. Abstinence from substance of abuse must be a goal while recognizing that non-addictive medication is often necessary. Relapse should be viewed as a lesson rather than a failure. For trauma processing to occur there must be careful preparation that

continues to focus on safety. Remember that recovery is a process having stages that clients revisit again and again with increased therapeutic attainment [671]

When designing systems for the treatment of the 50% of chronically mentally ill who are also substance abusers many concepts must be considered. This is a population that experiences many more negative outcomes than less complex cases including: more relapse, hospitalization, violence, incarceration, homelessness, and serious infections like HIV and hepatitis. Having parallel but separate systems for mental health and substance abuse provides fragmented and ineffective care. In a review of research from eight studies that looked at this population positive outcomes were demonstrated in various domains including: substance abuse; psychiatric symptoms; housing; hospitalization; arrests; functional status; quality of life. To accomplish this there are certain critical components that must exist including: nonlinear, staged interventions; assertive outreach; motivational interventions; counseling; social support interventions; a long-term perspective; comprehensiveness; cultural sensitivity and competence. There are also a clear set of implementation barriers that arise that can be categorized as policy barriers, organizational structure, financing, regulations, and licensing. Program barriers include a lack of: clear service models; administrative guidelines, contractual incentives, quality assurance procedures, and outcome measures. Clinical barriers include fixed beliefs; a lack of cross-fertilization, and inadequate education around an integrated approach to care. Consumer and family barriers also exist. Family members are often unaware of substance abuse, or blame everything on it, or attribute symptoms and substance abuse to misbehavior, while consumers often deny the magnitude of either problem. Therefore, to overcome these barriers certain steps must be taken. It is necessary to: build a consensus around a vision for integrated services; engage in conjoint planning; specify a model, implement structural, regulator and reimbursement changes; establish contracting mechanisms, define standards, fund demonstration programs, and fund training initiatives. Fear of losing money to cover nontraditional populations often leads to: prolonged disagreements; an inability to develop consensus and the abandonment of other plans. These authors suggest that a preliminary step may be having mental health take over dual diagnosis clients while substance abuse field pledges help with training and planning. Ultimately success will depend on structural, regulatory, and funding changes to reinforce training [668].

There are established characteristics of treatment milieus related to better patient functioning, more patient activity in the facility and community. These include: active support; policies that give patients more control; more health and treatment services; a practical orientation; a tolerance for personal expression; paraprofessional treatment staff; better team functioning. These aspects of milieu were especially beneficial for patients with greater psychiatric impairment [672].

There are distinct advantages to Twelve Step programs that apply to both substance abuse and PTSD that include: social support; an accepting and nonjudgmental atmosphere; reinforcement for the importance of abstinence; promotion of a philosophy of living that fosters self-protection and self-nurturance; willingness to address issues of fear, abandonment, shame; willingness to address existential issues. There are however, some obstacles to these programs in that survivors often equate powerlessness with helplessness and as a result, resist the issue of surrender [671, 673].

There are also common treatment frameworks for both disorders that can be simultaneously implemented: promoting awareness and acceptance of the disorders; educating clients about causes, symptoms and remedies for their disorders; emphasizing importance of social support; doing relapse prevention work; encouraging self-care; psychotherapeutic change through counseling and working the twelve steps; a healing relationship with a therapist and sponsor; allowing for exposure and deconditioning; possibly the use of medication; recovery from both is a process not an event; both disorders are likely to be chronic; relapse is always a possibility although less likely as recovery proceeds; recovery from both proceeds in stages; recovery involves revisiting old issues in increasingly healthful ways in an upward spiral of repair and growth. The concept of recovery is useful for both problems because it decreases the chances of a return to denial; establishes a realistic time frame for progress; prepares the individual to cope if an old issue triggers and resurfaces; enhances the commitment to integrating a new lifestyle on an ongoing basis [671, 673].

Mother and Child Programming

During the 1990s, substance abuse treatment programs were developed for pregnant women to help improve infant birth outcomes, reduce maternal drug dependency and promote positive lifestyle changes. One study compared the relative impact of five treatment modalities--residential, outpatient, residential/outpatient, methadone and detoxification-only--on infant birth weight and perinatal health care expenditures for a sample of 445 Medicaid-eligible pregnant women who received treatment in Massachusetts between 1992 and 1997. Costs and outcomes were measured using the Addiction Severity Index and data from birth certificates, substance abuse treatment records and Medicaid claims. Results showed a near linear relationship between birth weight and amount of treatment received. Women who received the most treatment (the residential/outpatient group) delivered infants who were 190 grams heavier than those who received the least treatment (the detoxification-only group) for an additional cost of \$17,211. Outpatient programs were the most cost-effective option, increasing birth weight by 139 grams over detoxification-only for an investment of only \$1,788 in additional health care and treatment costs. Five intermediate treatment outcomes--prenatal care, weight gain, relapse, tobacco

use and infection--suggested that increases in birth weight were due primarily to improved nutrition and reduced drug use, behaviors which are perhaps more easily influenced in residential settings [469].

Residential programs that provide safe environments and childcare can attract perinatal women into treatment. Other factors, however, may prevent some women from benefiting from these programs. Attachment theory suggests that one's early history determines the effectiveness with which one can utilize available social supports. Lower levels of program retention were predicted for women who had been sexually abused and for those who had poor early bonding. Eighty-four women in residential substance abuse treatment programs were studied. Clients who reported sexual abuse also reported lower parental care. Parental care and overprotection were inversely related, and related, in predicted directions, to perceptions of social supports. Sexual abuse alone was associated with time in treatment and the likelihood of graduation [674].

Another study presented findings on the impact of implementing a parenting component in two urban residential treatment programs in Massachusetts for pregnant and parenting chemically-dependent women. The parenting component consisted of multiple services for both women and their infants while they were in residential treatment as well as aftercare services after discharge from treatment. Findings presented focus on: (a) the characteristics of the 170 pregnant and parenting women who participated in the parenting component during its 48 months of implementation; (b) changes in the parenting skills and self-esteem of women who completed parenting training; (c) the quality of mother-child interaction; and (d) the participants' perceptions about the impact of the parenting training. Women in both programs made dramatic improvements in self-esteem and experienced significant gains in parenting knowledge and attitudes. The participants were also overwhelmingly positive about the impact of the parenting training on their lives [675].

In 1992, the Key West Housing Authority created SafePort, a residential substance abuse program for parenting women within public housing that provides substance abuse treatment to parenting women. The program began with a \$250,000 HUD Drug Elimination Program grant and then continued based on other funding. Seven adjacent public housing apartment buildings were fenced and landscaped to create a safe and drug-free campus-style setting. Some apartments were converted to an on-site child care center, multipurpose and recreation rooms, and counseling offices. A flexible combination of one, two, and three-bedroom family units and shared living quarters can house up to 45 addicted adults and 60 children while they participate in a comprehensive treatment program. This allows entire families to receive therapeutic services concurrent with a mother's treatment. In this program, all family members are assessed. SafePort uses a three-phase treatment model in which the focus shifts from early abstinence to relapse prevention, and finally to long-term recovery.

Preliminary program evaluation data indicates that women who participate with their children are more likely to remain drug-free than those who do not participate with their children [676].

Treatment Modalities

One group of clinician/researchers developed a model for using cognitive-behavioral therapy techniques for women who suffer from substance abuse and PTSD. The treatment model: Educates patients about both disorders; promotes self-control skills to manage overwhelming affects; teaches functional behaviors that may have deteriorated as a result of the disorders; provides relapse prevention training. The program draws on: educational principles to make it accessible for the population, visual aids; education for the patient role; teaching for generalization; emphasis on structured treatment; testing of acquired knowledge of CBT; affectively engaging themes and materials; and memory enhancement devices. It is a manual-based 24-session cognitive behavioral group therapy protocol treatment, based on assessments at pretreatment, during treatment, post-treatment, and at 3- month follow-up. In evaluating the treatment program, significant improvements in substance use, trauma-related symptoms, suicide risk, suicidal thoughts, social adjustment, family functioning, problem solving, depression, cognitions about substance use, and didactic knowledge related to the treatment. Patients' treatment attendance, alliance, and satisfaction were also very strong. Treatment completers were more impaired than dropouts, yet more engaged in the treatment [324, 677, 678].

In another treatment trial, investigators compared two group therapy models for effect on self-efficacy and personal control for women who were substance abusers. The cognitive and experiential group scored higher than control but the cognitive group scored highest for social self-efficacy [679]. In another group, women were offered a 5-month, twice-weekly, two-phase individual cognitive-behavioral treatment utilizing: Relapse prevention and coping skills training for substance abuse, psychoeducation, stress inoculation training and in vivo exposure for PTSD [680].

Social Support and SA Treatment

Social support is known to be one of the only attenuating factors during and after a traumatic experience. In one study links between social support and relapse were examined in a study of alcoholics, cigarette smokers, and opiate users completing treatment for drug use (N = 221). Subjects were followed weekly until relapse for a maximum of 12 weeks after the end of treatment. Greater structural support predicted a lower risk of relapse and greater experienced partner support for abstinence also predicted lower risk [681, 682].

Since returning to high-risk settings without a network of support for abstinence increases risk of relapse, another group at DePaul University studied the use of self-help communal living settings known as Oxford House programs. Recovering alcoholics were able to maintain employment and reduced need for government subsidies in those settings. Other investigations are looking at the impact of specialized Oxford House programs for women and children [683].

In a study looking at women recovering from substance abuse and sexual abuse, clinicians offered brief conjoint therapy with the woman's partner that helped to build skills in communication, mutual problem solving and affective relations. As a result, the women experienced increased support from male partners and the men reported decreases in negative emotional atmosphere in the relationship [684]. Other studies conclude that direct family support may help people with dual disorders to reduce or eliminate their substance use [685].

Dual Diagnosis Outcomes

Does treatment work? One group of investigators compared measures of process and six-month outcomes for 45 individuals who were treated in a long-term residential treatment program for patients with dual diagnoses with measures for 39 individuals who were treated in a short-term program. They also compared outcomes for individuals within each group. Those who received long-term treatment experienced improvements between entry into the program and six-month follow-up and they were more likely to have engaged in treatment than individuals in the short-term group. At follow-up, individuals in the long-term residential treatment group were more likely to have maintained abstinence and less likely to have experienced homelessness than those in the short-term group [686].

Residential treatment programs specifically designed for alcohol/drug-addicted women and their children are becoming a popular treatment modality across the United States. Outcome evaluations of these programs are beginning to show promising results. Outcome data from a study of a residential substance abuse treatment program for women and young children in rural South Carolina included data from 35 women and 23 children in the area of addiction severity, parenting and child emotional and behavioral development at 6 and 12 months following discharge from a substance abuse residential treatment program is examined. Results showed that women who completed treatment had better scores on addiction severity and parental stress, and their children had improved behavioral and emotional functioning at 6 and 12 months after discharge from the program suggesting that residential treatment has benefits for mothers and their children [687].

The female prison population has increased dramatically in recent years. Most women prisoners are involved with drugs, and as many as 25 percent are pregnant or have delivered within the past year. Reproductive health and drug treatment services for women in prison are inadequate, if they are available at all, and although illicit drugs are readily available in prison, drug-involved pregnant women often are incarcerated to protect fetal health. Studies of pregnancy outcome among women prisoners have demonstrated high rates of perinatal mortality and morbidity. One article examined issues related to pregnancy among women prisoners and describes an innovative residential program designed for pregnant, drug-dependent women in a state adult corrections system [376].

After treatment for substance abuse, whether it is in hospital-based treatment programs, therapeutic communities, or recovery homes, many patients return to former high-risk environments or stressful family situations. Returning to these settings without a network of people to support abstinence increases chances of a relapse. As a consequence, substance abuse recidivism following treatment is high for both men and women. Alternative approaches need to be explored, and there are some promising types of recovery homes. From a public health perspective, a series of studies conducted at DePaul University suggests that one type of recovery home (Oxford House) for alcohol abuse recovery has much potential. For example, within this self-help communal living setting, recovering alcoholics were able to maintain employment, thereby reducing their need for government subsidies. Maintaining employment for recovering alcoholics may promote increased personal responsibility, which may impact self-efficacy beliefs. These pilot studies, then, raised both theoretical and practical issues needing further evaluation [683].

A growing literature suggests that women experience chemical dependency in a very different manner than men. Their needs in treatment may also vary. In particular, women with low incomes face greater economic hardship, and may be more subject to the influence of social support in maintaining recovery. Despite evidence for the relationship of both employment and social support in substance abuse treatment outcomes, many programs are reducing services and lengths of stay. The authors of one study explored outcomes for fifty-nine women who attended long-term substance abuse treatment in a women's facility that emphasized employment and economic self-sufficiency. Reductions in substance use were associated with an increase in economic autonomy. Improvement in other life domains was positively associated with measures of economic self-sufficiency. Women living in drug-free social environments had higher rates of abstinence and better overall functioning. At least among women who participated in the study, economic outcomes, substance use, and general functioning went hand-in-hand. The authors conclude that eliminating services such as employment assistance may,

while reducing cost, also negatively impact outcomes among the most vulnerable clientele [664]

Another study examined the role of family status and demographic characteristics in explaining the nearly 60% dropout rate for women in substance abuse treatment. Data from the administrative record files of the Illinois Office of Alcoholism and Substance Abuse (OASA) for the fiscal year 1996-97 were analyzed for women age 12 or older who completed intake for publicly funded substance abuse treatment and whose outpatient treatment records were closed at year-end. The likelihood of not completing treatment was greatest for women who were African American, pregnant, had custody of minor children, or were younger than age 21. However, African American women who had children in foster care were more likely to complete treatment. Implications for treatment and research are discussed [688]. To look more closely at this issue, another group of investigators studied fifteen African American women to examine the association between trauma and addiction in this population. A major factor was the overwhelming history of abuse, neglect, or abandonment in the lives of these women. Certain themes arose including a family history of substance abuse, lack of a caring childhood environment, and pain resulting from trauma, coping and recovery [670].

In a study designed to examine the association between the duration and amount of outpatient mental health care, participation in self-help groups, and patients' one-year outcomes, a total of 2,376 patients with substance use disorders, 35% of whom also had psychiatric disorders, were assessed at entry to treatment and at a one- year follow-up. Information about the duration and amount of outpatient mental health care was obtained from a centralized health services utilization database. Patients who obtained regular outpatient mental health care over a longer interval and patients who attended more self-help group meetings had better one-year substance use and social functioning outcomes than did patients who were less involved in formal and informal care. The amount of outpatient mental health care did not independently predict one-year outcomes. The authors concluded that the duration of outpatient mental health care and the level of self-help involvement are independently associated with less substance use and more positive social functioning. They suggest that the provision of low intensity treatment for a longer time interval may be a cost-effective way to enhance substance abuse and psychiatric patients' long-term outcomes [689].

A study was designed to outline a minimal set of outcome indicators to assess the effects of specialized treatment for people with severe mental illness and substance use disorders and report on use of these indicators in a longitudinal study of such treatments. A total of 147 clients with dual disorders participated in a controlled clinical trial of three interventions--behavioral skills training, case management, and 12-step recovery--in a county mental health

program. The clients were assessed every six months over a two-year period using multidimensional self-report and observer-rated outcome measures encompassing psychosocial functioning, psychiatric and substance abuse symptoms, and service utilization. Client self-reports showed changes in psychosocial functioning, especially increased functioning in residential stability and work, and reductions in alcohol and drug symptoms and usage. Data on service utilization showed decreased use of acute and subacute mental health services and increased use of outpatient and case management services over time. Ratings by trained observers of psychiatric symptoms and psychosocial functioning improved dramatically. The authors concluded that a minimal set of outcome indicators for clinical trials and demonstrations of interventions for clients with dual disorders should include client self-reports of social adjustment, life satisfaction, psychiatric and substance abuse symptoms, and current substance use; interviewers' ratings of psychosocial functioning and psychiatric symptoms; data on utilization of mental health treatment and support services; and data on clients' personal income, use of medical services, and contact with the criminal justice system [690].

At the 1-year follow-up, dually diagnosed patients, and patients with only substance use disorders, had comparable substance use outcomes. Patients with major psychiatric disorders, specifically psychotic and anxiety/depressive disorders fared worse on psychological symptoms and employment outcomes than did patients with personality disorders and only substance use disorders. There was no diagnostic group by treatment orientation matching effects, which indicated that the dual diagnosis patient groups improved as much in 12-Step as in cognitive-behavioral substance abuse programs [691].

A prospective longitudinal study 182 women and 148 men in outpatient substance abuse treatment found that the women in the study were far more likely to have sexual and physical abuse and higher levels of PTSD and had more factors predicting relapse including: low self-esteem, depression, anxiety, and suicidal behavior. However, in this study PTSD was not associated with relapse to drug use and women were not more likely than men to relapse within 6-month post-treatment interval. In fact, while women had more psychological risk factors associated with relapse, they were more likely than men to engage in treatment. This willingness to engage treatment, especially participation in group counseling, appears to mitigate the risk of relapse for women [336].

Another study looked at a group of inner city women in an inpatient detoxification program to evaluate the relationship between outcome and obtaining a trauma history. Of the women, 59% had good short-term outcomes, but positive outcomes were associated with both the number of previous detoxification hospitalizations and attendance at outpatient programs. It was clear that identifying histories of trauma did not interfere with treatment completion or further treatment seeking. The authors hypothesized that it may

be the capacity to accept and utilize help, developed over repeated treatment exposures rather than related to intrinsic character, that produced the positive outcomes after several apparent failures [692].

Another group of investigators examined gender differences in problems at assessment, 30- day retention, and treatment completion. Data from Detroit's publicly funded substance abuse treatment system were used. Women had significantly more severe problems at assessment, lower 30-day retention, and lower treatment completion rates than men. Gender differences in retention remained significant even after controlling for problem severity, primary drug of abuse, and referred treatment setting. There was no evidence of improvements in women's problems at assessment or retention over time during this period. Women presented with more severe problems at assessment and were less likely to stay in treatment for 30 days or to complete treatment than men [693].

Recidivism

It may be necessary to rethink the entire concept of recidivism in addressing the treatment requirements of complex cases involving PTSD, any number of other psychiatric and social problems, as well as substance abuse. In one study, 101 randomly selected inner-city women completed a structured questionnaire covering demographic, treatment, and trauma history. Statistically significant relationships were found between positive outcome and both member of previous detoxification hospitalizations and attendance at outpatient programs. Unlike what many substance abuse providers fear, identifying histories of trauma did not interfere with treatment completion or further treatment seeking. These results suggest that for women with heavy drug and alcohol problems, the capacity to accept and utilize help may be developed over repeated treatment exposures [692].

Another study examined the relationship between substance abuse patients' length of stay in community residential facilities and their outpatient mental health aftercare and readmission for inpatient care. A national sample of 1,070 substance abuse patients referred to community residential facilities after an episode of inpatient care was assessed and followed over four years. Patients were divided into three groups: those with only alcohol-related diagnoses; those with drug-related diagnoses, most of whom also had alcohol diagnoses; and those with concomitant psychiatric diagnoses. Patients who had longer episodes of care in residential facilities were more likely to obtain outpatient mental health aftercare and were less likely to be readmitted for additional substance abuse or psychiatric care in six-month, one-year, and four-year follow-up intervals. Readmission rates among substance abuse patients with psychiatric diagnoses were much higher than rates among patients who had only substance abuse diagnoses. Length of stay in the community residential facility and post-discharge

outpatient mental health care remained significant independent predictors of lower readmission after other risk factors for readmission were considered. Transitional community residential care can contribute to substance abuse patients' treatment outcome; however, longer-term supportive care is needed for substance abuse patients with more severe and chronic disorders [694].

In another study, twenty subjects were randomly selected from 200 intake files in a substance abuse rehabilitation facility. Each subject provided information regarding whether or not any history of sexual abuse existed. Treatment records were compared on seven categories of treatment taken from Daughters and Sons United criteria for successful recovery from sexual abuse. A higher rate of relative success across categories of treatment was demonstrated for those who dealt with issues of sexual abuse. Conversely, greater rates of recidivism and lower progress in recovery from substance abuse was noted in those who failed to address issues of sexual abuse [695].

Barriers to Treatment

What are the existing barriers to treatment? In one study, investigators looked at a group of inner city, African American women in transitional residence for substance abusers. They suffered from unresolved feelings of guilt and shame associated with perceptions of failure in the maternal role during their active addiction and this was discovered to be critical issue and possible barrier to successful treatment for African American women in a residential program for treatment of substance abuse [696]. Another study looked at five domains in a residential treatment facility for pregnant/parenting women: sociodemographics; substance use; psychological functioning; legal involvement; social relations. Most women had been in the program for six months. Women who failed to complete treatment tended: to be unmarried, had two or more children with them in treatment, reported a child welfare case open, had cocaine as their primary problem, had psychological problems as well. There were three significant predictors of treatment completion: education level, recent arrests, and peer deviance. Women who completed program requirements were more likely to: has a high school degree or equivalent, have no arrests in the 6 months before admission, have friends who were less deviant. Women who had graduated from high school or received a GED were 3.2 times more likely to complete treatment. Those who had not been arrested in the 6 months prior to treatment were 4.5 times more likely to complete treatment. Women whose peers were less deviant were 3.0 times more likely to complete treatment. Race/ethnicity was not a significant predictor. Other predictors that approached significance and deserve further study include: marital status, number of children in treatment, child welfare involvement, cocaine use and psychological depression [697].

Barriers to treatment often occur in the assessment process. In one study 89 clients referred to an intensive case management program revealed substantial previously undetected physical and sexual abuse, yet none of the clients had ever been asked about their abuse experiences. Of the 89, 50% were adult children of alcoholics and 34 % were childhood sexual abuse victims. The adult children of alcoholics experienced significantly more of every kind of abuse, including incest and childhood physical and sexual abuse, than clients whose parents were not alcoholic. Substance abuse problems were reported by more than half of the clients and by 75 % of the adult children of alcoholics. Self-mutilation and heavy use of mental health services were also correlated with having an alcoholic parent [698].

Literature Review Highlights

- Stress is a major contributor to the initiation and continuation of addiction to alcohol or other drugs, as well as to relapse or a return to drug use after periods of abstinence.
- Children exposed to severe stress may be more vulnerable to drug use.
- PTSD is a significant risk factor for substance abuse and many other emotional, physical, and behavioral problems.
- American children are exposed to high rates of violence at home, at school, and on the streets and children living in impoverished, crime-ridden neighborhoods are particularly susceptible to exposure to violence – in some studies over 80%.
- Exposure to violence is linked to a multitude of childhood emotional, behavioral, social and academic problems.
- Almost 9 million American adolescents have witnessed serious violence, not including media presentations of violence.
- Witnessing violence has been linked to later aggressive behavior, poor conflict resolution skills, increased emotional problems, poorer academic functioning and diminished IQ's.
- The number of physically abused and seriously injured children has been rising throughout the last several decades.
- Almost 4 million adolescents have been victims of serious physical assault.
- At least 11% of the adult population have been physically abused as children.
- There are established and strong connections between physical abuse and many other problems including: increased likelihood of substance abuse of all kinds, increased emotional health problems, increased likelihood of arrest violent crimes, increased risk for promiscuity, prostitution, and teenage pregnancy.
- Of adolescents, an estimated 8% of have been victims of serious sexual assault .

- At least 20% of American women and 5-10% of American men have been sexually abused as children.
- Sexually abused children are at high-risk for the development of PTSD and other psychiatric problems. They are also at high risk for the development of sexual problems, school difficulties, depression, somatic complaints and health problems, impaired self esteem, anxiety, substance abuse disorders, conduct disorders, delinquency, aggression, and increased health risk behaviors, problems that will follow them through adolescence and into adulthood.
- Five out of six people will be victims of violent crime at least once in their lifetime
- According to a nationally representative sample of U.S. children in grades 6-10, 30% of children reported being both bullied and being bullies.
- Bullying is associated with poorer psychosocial adjustment and a significantly increased likelihood of later criminal conviction.
- Approximately 1 in 5 female students reported being physically and/or sexually abused by a dating partner.
- Dating violence is associated with increased risk for substance abuse; unhealthy weight control behaviors, like using laxatives or vomiting; sexual risk behaviors like first intercourse before age fifteen; pregnancy; and suicidality.
- About 2-5% of teenagers identify themselves as gay, lesbian, bisexual or transgendered.
- 2 out of 5 of these teens do not feel safe at school because of their sexual identity – many of them have experienced verbal, sexual, and or physical harassment or assault.
- Since 1985, the number of women in prison has almost tripled and approximately three-quarters of the women in prison are mothers.
- More than 1.3 million minor children are the offspring of women under correctional sanction; more than a quarter million of these children have mothers who are serving time in prison or jail[147].
- Small-scale studies suggest that children are profoundly affected by parental arrest and incarceration and often suffer from multiple psychological problems and negative behavioral manifestations including decline in school performance, truancy, substance abuse and aggression.

- There is considerable continuity from childhood aggression to juvenile violence.
- An early age of onset of violence predicts a large number of violent offenses. The major long-term risk factors for juvenile violence are individual (high impulsiveness and low intelligence, possibly linked to the executive functions of the brain), family (poor supervision, harsh discipline, child physical abuse, a violent parent, large family size, poverty, a broken family), peer delinquency, gang membership, urban residence, and living in a high-crime neighborhood (characterized by gangs, guns, and drugs in the United States).
- According to one recent study of a delinquent population, a history of maltreatment increased the risk of youth violence by 24%. Exposure to multiple forms of family violence doubles the risk of self-reported youth violence.
- Childhood abuse and neglect has a significant impact on the likelihood of arrest for delinquency, adult criminality, and violence. By the age of 32 years, almost half of the victims of abuse and neglect were arrested for a non-traffic offence.
- As of September 30, 1999, there were 568,000 children in foster care. Substance abusing mothers, particularly those from low income families, are at heightened risk for out-of-home placement of their children.
- In a random sample of 195 young foster children, almost half of the birth parents of the foster children had experienced homelessness.
- Alcohol is the top drug of abuse by America's teens. Children under the age of 21 drink 25% of the alcohol consumed in the United States. More than five million high school students (31.5%) admit to binge drinking at least once a month. The age which children begin drinking is dropping[190]
- According to the statistics gathered by the National Institute of Alcohol Abuse and Addiction, in the previous thirty days, 27% of Philadelphia teenagers had driven with someone who had been drinking alcohol; 6% had driven a vehicle while under the influence.
- Among adolescent substance abusers, the rate of PTSD is very high and establishes at least one continuity between adolescent and adult substance abuse.
- Adolescents who had been physically assaulted, who had been sexually assaulted, who had witnessed violence, or who had family members with

- alcohol or drug use problems had increased risk for current substance abuse/dependence.
- Many studies indicate that a significant pathway to early onset substance abuse occurs as a result of emotional and behavioral dysregulation secondary to child maltreatment including neglect that begins in infancy, progresses to conduct problems in childhood and then onward to substance abuse by early adolescence and severe substance abuse by early adulthood.
 - Post-traumatic stress disorder, PTSD is a serious, often chronically debilitating psychological injury that may affect a child's development in a variety of profound ways.
 - 60% of men and 51% of women in the general population reported at least one traumatic event at some time in their lives. Almost 17% of men and 13% of women who had some trauma exposure had actually experienced more than three such events groups .
 - The rate of comorbidity with PTSD is astonishingly high. Even in the most conservative study, those with PTSD were two to four times more likely than those without PTSD to have virtually any other psychiatric disorder, particularly somatization.
 - People with PTSD are almost eight times as likely to have three or more psychiatric disorders – 88% of men and 79% of women with PTSD had a history of at least one other disorder .
 - In 1999, 105 million Americans age 12 or older reported current use of alcohol, about 45 million for this group engaged in binge drinking, and 12.5 million were heavy drinkers .
 - Approximately 14 million Americans – about 7% of the adult population – meet the diagnostic criteria for alcohol abuse and/or alcoholism. About 40% of Americans report having a direct family experience with alcohol abuse or alcoholism. An estimated 14.8 Americans were current users of illicit drugs in 1999 and an estimated 3.6 million were dependent on illicit drugs and an estimated 8.2 million Americans were dependent on alcohol. Of these 1.5 million people were dependent on both illicit drugs and alcohol.
 - The misuse of alcohol is involved in approximately 30% of suicides, 50% of homicides, 52% of rapes and other sexual assaults, 48% of robberies, 62% of assaults, and 49% of all other violent crimes. Alcohol is also a

factor in 30% of all accidental deaths, including up to 50% of motor vehicle deaths.

- The ACE's study provides a documented link between childhood exposure to violence, psychiatric disorders, physical disorders, and substance abuse. Based on defining eight categories of adverse childhood experiences: psychological, physical, or sexual abuse; violence against mother; or living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned, more than half of respondents reported at least one, and one-fourth reported falling into two or more categories of adverse childhood exposures.
- Persons who had experienced four or more categories of adverse childhood experiences, compared to those who had experienced none, had 4- to 12-fold increased health risks for alcoholism, drug abuse, depression, and suicide attempt; a 2- to 4-fold increase in smoking, poor self-rated health, equal to or greater than 50 sexual intercourse partners, and sexually transmitted disease; and 1.4- to 1.6-fold increase in physical inactivity and severe obesity.
- The number of categories of adverse childhood exposures showed a graded relationship to the presence of adult diseases including ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease. The categories of adverse childhood experiences were strongly interrelated and persons with multiple categories of childhood exposure were likely to have multiple health risk factors later in life.
- Women who experienced 4 or more types of abuse during their childhood were 1.5 times more likely to have an unintended first pregnancy during adulthood than women who did not experience any abuse.
- It has been estimated, based on probability sampling, that from 2 to 3 million women are assaulted by male partners each year in the U.S. and that from 21-34% of all women will be assaulted by an intimate male during adulthood.
- More than 50% of all women will experience some form of violence from their spouses during marriage; more than one-third are battered repeatedly every year; 15-25% of pregnant women are battered.
- According to a nation-wide survey released by the Family Violence Prevention Fund, more than one in three Americans have witnessed an incident of domestic violence.

- In homes where spousal abuse occurs, children are abused at a rate 1,500% higher than the national average.
- One out of every eight adult women or at least 12.1 million American women will be the victim of forcible rape sometime in her lifetime.
- Among adult women an estimated 32,101 pregnancies result from rape each year.
- Up to 1 in 20 women will be stalked during her lifetime. The majority of victims are female, while the offenders are usually males who have been intimate partners.
- The prevalence of PTSD after rape is very high. In a review of nine studies that investigated the prevalence of PTSD among victims of rape or other sexual violence, four studies showed the rate as great than 70%.
- Rape victims were three times more likely than non-victims of crime to have ever had a major depressive episode and were 3.5 times more likely to be currently experiencing a major depressive episode.
- Rape victims were 4.1 times more likely than non-crime victims to have contemplated suicide and 13 times more likely than non-crime victims to have actually made a suicide attempt.
- From 1973 to 1994 the violent victimization rates of women and men in the U. S. converged. Twenty years ago women's likelihood of victimization was less than half that of men. By 1994 women were about two-thirds as likely as men to be victims of violence.
- Among the mentally ill, nonviolent criminal victimization is similar to the general population but the rate of criminal victimization is much higher than that of the general population.
- Across studies, between 51% and 97% of seriously mentally ill participants experienced lifetime physical or sexual assault and a significant proportion of these had experienced multiple acts of victimization.
- Mental disorders as a whole affect women and men almost equally, but certain disorders, such as major depression, dysthymia, and post-traumatic stress disorder affect women more than men.
- There is a high degree of comorbidity between substance abuse, exposure to trauma, depression, self-harming behavior, suicidality, personality disorders, and ADHD

- Most studies suggest a third to a half of substance abusing women experienced some kind of sexual abuse during childhood.
- People who abuse substances are known to have a high rate of exposure to violence both before they begin using substances and after.
- Sexual abuse and substance abuse also have common features and both predispose to disorders in the next generation.
- People with PTSD are two to three times more likely to have a substance abuse disorder.
- In a number of studies showing the relationship between PTSD and substance abuse, between 25% and 58% of those seeking substance abuse treatment also were comorbid for PTSD.
- Studies show that 27 percent –35 percent of adult sexual abuse victims have a history of alcohol abuse and 21 percent a history of drug abuse.
- Approximately 50%-60% of women and 20% of men in chemical dependency recovery programs report having been victims of childhood sexual abuse.
- Estimates of the rate of PTSD among substance abusers varies between 12% and 34%, while for female substance abusers, the co-occurrence rate is 2-3 times as high.
- Estimates are that as many as 75% of women in treatment for alcoholism have a history of sexual abuse [333].
- A history of childhood rape doubled the number of alcohol abuse symptoms that women experienced in adulthood and there was a significant relationship between pathways connecting childhood rape to PTSD symptoms and PTSD symptoms to alcohol use.
- In research with 942 non-clinical adult participants, gay men and lesbian women reported a significantly higher rate of childhood molestation than did heterosexual men and women.
- In a smaller study of 35 lesbians in alcohol recovery, 46% unexpectedly disclosed having survived childhood sexual abuse (CSA), linking it with addiction and recovery experiences.
- According to the National Gay and Lesbian Task Force of 1984, lesbians and gay men are 7 times more likely to be victims of crimes than the average citizen.

- In a study of pregnant prisoners, over 60% of respondents reported experiencing family violence during childhood or adolescence. Almost one-half of the women reported using drugs and alcohol during the past year and in their current pregnancy.
- Violence is the second leading cause of injuries to women between the ages of 15 and 44.
- In a study of 108 women screened at a women's health clinic, 69% reported a history of trauma.
- Innumerable health problems are associated, both directly and indirectly, with exposure to violence.
- There is an established relationship between HIV infection and exposure to violence via multiple pathways.
- Substance abusers are at high risk for many different forms of injury. Alcohol and drug abusers were almost four times as likely to be hospitalized for an injury in a 3-year period when compared with controls. Injury risks are elevated substantially more for female than male substance abusers.
- Substance abuse, both of alcohol and illicit drugs, has been found as a substantiated correlate of abuse during pregnancy in several studies. Substance abuse is a frequent manifestation of PTSD in pregnant and non-pregnant battered women.
- About 8.3 million U.S. children presently live with one or more substance-abusing parents, almost a million of them are under two years of age.
- It has been stated that substance abuse and addiction are the primary causes for the dramatic rise in child abuse and neglect and have also caused an immeasurable increase in the complexity of cases since the mid-1980s. Substance abuse causes or exacerbates 7 out of 10 cases of child abuse and neglect.
- Children whose parents abuse drugs and alcohol are almost three times likelier to be abused and more than four times likelier to be neglected than children of parents who are not substance abusers[487].
- When researchers looked at the rate of PTSD among maltreated children and their mothers, posttraumatic stress disorder was significantly over represented in the children of mothers diagnosed with PTSD. The onset of maltreatment was significantly earlier among children whose mothers meet PTSD criteria than among other maltreated children.

- Mothers of maltreated children exhibited a significantly greater lifetime incidence of anxiety disorders (especially post-traumatic stress disorder), mood disorders, alcohol and/or substance abuse or dependence disorder, suicide attempts, and comorbidity of two or more psychiatric disorders, compared to control mothers.
- The majority of maltreated children and adolescents reported anxiety disorders, especially post-traumatic stress disorder (from witnessing domestic violence and/or sexual abuse), mood disorders, suicidal ideation and attempts, and disruptive disorders. Most maltreated children (72%) suffered from comorbidity involving both emotional and behavioral regulation disorders[490].
- Girls whose mothers were sexually abused were 3.6 times more likely to be sexually victimized. Maternal sexual abuse history combined with maternal drug use placed daughters at the most elevated risk.
- The intergenerational transmission of abusive child-rearing behavior has also been well documented among populations who have been abused and neglected in childhood.
- Abused mothers who were able to break the abusive cycle were significantly more likely to have received emotional support from a non-abusive adult during childhood, were more likely to have participated in therapy during some period of their lives, and more likely to have had a non-abusive and more stable, emotionally supportive, and satisfying relationship with a mate.
- Abused mothers who re-enacted their maltreatment with their own children experienced significantly more life stress and were more anxious, dependent, immature, and depressed.
- At this point, about 1% of the population holds 48% of U.S. wealth and another 19% of the population holds another 46% of the nation's wealth, leaving a mere 6% of wealth to be divided up by 80% of the population.
- 30% of the workforce toils for \$8 an hour or less and although the poorest 10% of American workers saw their wages rise from \$5.49 an hour in 1996 to \$6.05 in 1999 and the next 10% saw a rise from \$6.80 to \$7.35, these increases have not been sufficient to bring low-wage workers up to the amounts they were earning 27 years ago, in 1973, and the poorest have made the least progress.

- The number of poor families increased by 1.5 million between 1980 and 1991, from 6.2 million to 7.7 million. Poor families maintained by women accounted for 80 percent of this increase.
- American children are almost twice as likely to live in poverty as Americans in any other age group: 37% of American children (27 million) live in low-income families, while 16% of children (11 million) live in poverty, in families with incomes below the federal poverty line of \$13,861 for a family of three in 2000.
- Five million American children (6%) live in extreme poverty in families with incomes below *half* the poverty line or \$6,930 for a family of three) Parents make up about 30% of all welfare recipients with children accounting for the rest
- About the same number of children lived in poverty in 1980. The U.S. child poverty rate is substantially higher than that of most other major Western industrialized nations Addiction, poverty, violence, and mental illness are interconnected social problems.
- Even with welfare rolls down to 2.2 million families, at least 460,000 families are affected by addiction – about 1.2 million parents and children. Most of them have less than a high school education and have difficulty finding lasting employment. Up to 40% of them have learning disabilities.
- Between 20-30% of them are currently involved in a physically or psychologically abusive relationship and between 50-70% of the mothers on welfare have been in an abusive relationship at some point in their lives.
- Substance abuse causes or exacerbates 7 out of 10 cases of child abuse and neglect. Between 22% and 35% of women seeking care for injuries in emergency rooms are there because of domestic violence.
- A summary of the major studies of the connection between poverty and violence indicate that: a) a majority of AFDC, although single mothers, are involved with an intimate partner; b) large proportions of these relationships are violent; c) the prevalence of current physical violence is reported in the range of 14% to 32%, while the occurrence of physical violence ever in life is consistently reported in the 33.8% to 61% range; d) high prevalence of a history of childhood abuse in the welfare population with the highest levels found among domestic violence victims; e) high levels of physical and mental health problems are present among those women who have experienced domestic violence; f) interference from intimate partners with education, training, work and childcare

- arrangements; g) history of seeking employment but an inability to maintain it.
- Homelessness, poverty, violence, and substance abuse are interrelated social problems.
 - Many studies demonstrate the contribution of domestic violence to homelessness, particularly among families with children.
 - In fact, there is a frighteningly high incidence of violence exposure as part of their past history.
 - In a homeless, mentally ill population, exposure to violence is so high that physical and sexual assault can be considered a normative experience. Results indicate that the life-time risk for violent victimization was 97% in this population.
 - There is an intimate relationships between prostitution, substance abuse, childhood maltreatment and exposure to violence throughout the lifespan.
 - In a government report released in September 2001, overall costs for drug abuse (excluding alcohol, tobacco, and prescription drugs) increased at a rate of 5.9% annually between 1992 and 1998 and are still rising. By 1998, the societal cost of drug abuse was \$143.4 billion.
 - During the past two decades, five major studies have estimated the economic costs of alcohol abuse in the United States using a "cost of illness" approach that expresses the multidimensional impact of alcohol abuse. The most recent estimate for the overall economic cost of alcohol abuse was \$185 billion for 1998
 - The direct costs for mental illness are estimated at to be over \$73 billion a year, not including lost productivity that more than doubles that figure.
 - In 1989 dollars, every incident of child sexual assault has been estimated to cost the victim and society at least \$99,000.
 - When the cost of pain, suffering, and the reduced quality of life is taken into consideration, the cost of crime to victims is an estimated \$450 billion a year.
 - Prevention and treatment are far more cost effective but for the most part, that is not where the money goes.
 - Welfare reform has pushed many people into the workplace. Getting trauma survivors back to work is health-promoting when they are able to

do so. However, as is evident from this review, the complex nature of the overlapping problems characterizing poverty, substance abuse, and exposure to violence must be taken into account if women and children are to improve their level of function. Depression interferes with workplace productivity and the degree of depression, PTSD, and substance abuse in the welfare population needs to be taken into account in welfare-to-work programs.

- Treatment can work although many more outcome studies need to demonstrate what kind of treatment is most effective for whom. Adequate treatment – and that may mean many attempts over an extended period of time – works and saves money.

Concluding Comments

Although this review paints a horrific picture of life in America for many women and children, it would be a grave error to view the situation as hopeless. Hope begins with the possibility of change. There is very little in this parade of dire statistics that is beyond the reach of human action. A commitment to social change can arise from the recognition that the seven plagues of modern urban life: Substance abuse, Homelessness, Prostitution, HIV, Violence, Poor parenting, and Poverty – are entirely preventable through informed, compassionate and focused human action. Over the centuries, war, invasion, famine, persecution and disease have created disasters that have served as “black holes”, sucking life into the darkness, sometimes for generations. Today we can start anywhere, with virtually any major social problem we face and we are inexorably drawn back to the center of the web – exposure to abuse, neglect, and an array of violent acts, paired with an implausible and yet real acceptance about the inevitable nature of this violence. As this review demonstrates, science is providing us with the knowledge that is required to understand the causal factors that give rise to these great afflictions. We know how to mobilize our resources to respond to disaster, September 11th being but the latest of a multitude of human-imposed cataclysms. As a society, we would be well-served now to move from the current climate of judgmentalism and a denial of mutual responsibility, to one of compassion and in doing so, focus on creating nonviolent environments within which people can heal and grow. In its simplest form, violence causes violence; hurt people hurt people. We hope that this review and the report to which it is an addendum will expand the reader’s understanding of the multidimensional and interconnected nature of the problems that challenge us. Most importantly we hope that our work will contribute to efforts directed at helping us all to make better, more enlightened and creative choices about and for the future.

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