Chapter 2

Mental Health Problems of American Indian and Alaska Native Adolescents

The following discussion of mental health problems among American Indian and Alaska Native youth has been organized in terms of a continuum of concerns. It begins first with problems that are considered diagnosable mental disorders. Diagnosable mental disorders represent serious difficulties that are usually associated with readily observable distress or functional impairment. Examples include developmental disabilities, depression, anxiety, and substance abuse and dependence. DSM-111-R, the Diagnostic and Statistical Manual, Version Three (Revised) of the American Psychiatric Association (12), provides a widely accepted, although not uncontroversial, nomenclature for describing and classifying such mental health problems (323).

The discussion then turns to still serious, but less diagnostically specifiable problems of childhood and adolescence. These include school dropout, delinquency, and runaway youth. Many mental health professionals assume that these types of problems either mask, are caused by, or lead to the psychological dysfunction and illness embodied in the major mental disorders.

The last portion of the discussion provides a broader view of the stresses that Indian adolescents experience and that, consequently, may render them more vulnerable to serious mental and emotional problems in question.

The causes of most childhood mental health problems remain unknown (144,323). However, related risk factors, often multiple and interlocking, are noted in the context of each mental health problem reviewed.

DIAGNOSABLE MENTAL DISORDERS

A significant portion of DSM-111-R is devoted to disorders usually first evident in infancy, childhood, or adolescence. Other mental disorders may afflict children and adolescents but are usually more common in adults. The weight of clinical experience suggests that most DSM-HI-R disorders are represented at least as frequently among American Indian and Alaska Native adolescents as in the adolescent population at large. Clinical experience, and some research evidence, suggests that several disorders may occur more frequently among Indian adolescents. These include mental retardation, specific developmental disorders, post-traumatic stress disorder[1], identity disorder, substance use/abuse disorder, depression disorders, and adjustment disorders.[2] Anorexia nervosa and bulimia nervosa would appear to be less frequent among Indian adolescents. More valid estimates of the extent of diagnosable mental disorders among Indian adolescents (and non-Indian adolescents) await systematic epidemiologic study.[3]

Developmental Disorders

The prevalence of mental retardation and other developmental (disabilities among Indian adolescents is not well established, although several studies suggest that they occur with greater frequency in this population than in others (238,262; see table 2). Based in large part on sources published before 1979, the Native American Rehabilitation and Training Center concluded that neurosensory disorders and certain developmental disabilities appear to be from 4 to 13 times greater for American Indians than for the U.S. population in general (234a).

A more recent analysis of national data from 1984 found smaller differences (238; table 3). However, this study found that almost 10 percent of American Indian students in public schools had some form of developmental disability. O'Connell reported that, for the Nation as a whole, the frequency of learning disabilities was greatest for American Indians among public school students (5.28 percent of all Indian students, compared to 4 percent for all minorities on average and slightly more than 4 percent for Anglo students). Indian students were second only to blacks in the proportion of educable and trainable mentally retarded. O'Connell and her colleagues also analyzed BIA data gathered in 1986; these data suggested that 8.72 percent of those enrolled had

INot discussed in his Special Report because of a lack of research evidence.

[2]Not discussed in this Special Report because of a lack of research evidence.

[3]The U.S. DHHS NIMH hopes to make such a study one of its 1991 initiatives (248).

Table 2-Studies Generating Estimates of Developmental Disabilities Among Indian Children and Adolescents

Study[a]	Setting	Sample	Method	Findings
Reschly and Jipson, 1976	Public schools Pima County AZ	Students; K-12; stratified random sample	WISC-R	1470 Papago 8% Black 6°A Hispanic 2% White mental retarriation
Ramiriz and Smith, 1978	BIA Schools, nationwide	Students; K-12	Staff survey	38%; all handicapping conditions
Joe, 1980	Navajo Nation	Disabled tribal members identified by multiple sources in IHS, BIA, and tribes; average age = 12 years	Survey	Percent males more than percent femafes; 5% educable mentally handicapped; 12% developmental disabled; 34°/o learning disabled; 10% multiply handicapped
May, 1983	MH programs IHS Albuquerque Area Office	Clients 10- to 19-years old 1981 (n= 2,168) 1982 (n = 3,540)	Service utilization review	50/0 (1981) 4.4% (1982) mental retardation

SOURCE: Offii of Technology Assessment, 1990.

Table 3__---- -Reiated Handicapping Conditions of Ethnic Minorities, 1984

Disability category	Percent of ethnic group with disability					
	American Indian	Asian	Hispanic	Black	Total minority	Anglo
Educable mentally retarded	1 .34%	0.33%	1 .02%	2.62°A	1.9070	0.92%
Trainable mentally retarded	0.32	0.18	0.25	0.38	0.32	0.25
Speech impairment	2.33	1.34	1.76	2.20	1.99	2.50
Severely emotionally disturbed	0.61	0.12	0.39	0.85	0.64	0.70
Learning disabled	5.28	1.66	4.14	4.26	4.01	4.14
Totals	9.88%	3.63%	7.560/o	10.31?0	8.860/0	8.510/o

SOURCE: J.C. O'Connell (cd.), "A Study of the Special Problems and Needs of American Indians With Handicaps, Both On and Off the Reservation," report prepared for the Office of Special Education and Rehabilitation Services, U.S. Department of Education, 19S7.

learning disabilities alone (238). These data suggest that developmental disabilities are a serious problem among Indian adolescents. There is evidence to suggest that they are related to the high prevalence of otitis media and fetal alcohol syndrome among Indian children (discussed below).

Depression

Depression—whether taken as a set of nonspe-*cific* symptoms of psychological distress which includes sadness, or as a psychiatric disorder with characteristic symptoms, course, and prognosis—has long been a concern with respect to Indian adolescents. Numerous clinicians and investigators argue, for example, that many behavioral difficulties such as conduct disorder, learning problems, or even substance abuse may reflect underlying depression (50). Unfortunately, the systematic study of depression among adolescents in general, much less their Indian counterparts, has advanced more slowly than among adults. This lag is largely due to still-evolving theories about depression in childhood which must account for highly situational stresses and fluctuating maturational processes (323). It is not surprising, then, that the available diagnostic tools are neither as well-tested nor widely applied as comparable methods for adults.

Nonetheless, depression is frequently cited among the troubles experienced by Indian youth. As shown in table 4, of the studies comparing the level of depression among Indian adolescents with a sample of non-lndians (3,170,366), most reported more depression among Indian adolescents. The total prevalence of depression among Indian adolescents

Table 4-Studies Generating Estimates of Depression Among Indian Adolescents

Study	Setting	Sample	Method	Findings
Studies using screening instruments for depressive symptoms:				
Kleinfeld and Bloom, 1977	BIA boarding school (Alaska)	Eskimo students grade 9 (n= 132)	Self-report survey; HOS;[b] Symptom check-lists	49°A of student body emotionally disturbed, including depression (25°/0 serious)
Manson, Ackerson, Dick, et al., in press.	Tribally administered boarding school (Southeastern U.S.)	Students grades 9-12 (n= 188) age range 12-20; average age 16	Self-report survey using CES-D[c]	58% met cutoff
NCAIANMHR, College Student Life Transitions Project, 1989	State-supported university (AK, MT, NM, AZ)	College students, (n= 605) age range 17-54; average age 25	Self-report survey using CES-D	48%, met cutoff; no significant difference between males and females; slightly more than white students
University of Minnesota, IAHS, 1989	Schools (Plains, Southeast, Southwest)	7th-12th grade students	IAHS[d]	20%. report being "depressed" in the last month[e]; 34°/0 report feeling "sad, discouraged, hopeless"f
Surveys of practitioners:				
Development Associates, 1983	Title IV counseling programs	lst-12th grade students	Survey of counselors	560/. reported students were frequently troubled by depression (fifth most frequent problem)
Studies using mental health service utilization review:				
Beiser and Attneave, 1982	Mental health programs (nationwide) (1974)	Mental health clients 15 to 19	Chart review	8% of all females
May, 1983	Indian Health Service mental health program (Albuquerque area)	Mental health clients 10 to 19 yrs old (n= 1,898) 1981 (n= 3,541) 1982	Chart review	3.30/0 (1981) 3.2%(1 982)
Studies using diagnostic criteria for clinical depression In ***self-report surveys:***				
Krush, Bjork, Sindell, et al., 1966	BIA boarding school (South Dakota)	Northern Plains students grades 11-12 (n= 222)	MMPlK CPI[h]	Significanyly more than non-Indians[i]
Ackerson, Dick, Manson, et al., in press.	Tribally administered boarding school (Southeastern US.) (1987-88)	Students grades 9-12 (n= 177) age range 12:20; average age 16	self report survey (IDD)j	5.30% met criteria; no significant difference between males and females; slightly more than white students

aReferen~s are located at end of report.
b~alth opinion survey.
cCenter for Epidemiologic Studies-Depression Scale.
dIndian Adolescent Health Survey.
eM$_{ore}$ males (21%) reported feeling depressed than females (1 8.8%). The percent feeling depressed was approximately the same as in the Minnesota sample.
fMore females (38.1%) than ma& (29.4%) reported feeling sad, discouraged, or hopeless. Indian students were more likely than Minnesota students (approximately 20%) to report feeling sad, hopeless, or discouraged in the last month.
gMinnesota Multiphasic Personality Inventory.
hCalifornia psychological Inventory.
'Did not report data.
Inventory to Diagnose Depression.

SOURCE: Office of Technology Assessment, 1990.

cannot be calculated from existing studies because the studies used different methods for estimating depression. When self-report screening methods are used, half or more of Indian adolescents report serious depressive symptoms (166,190,232,233). Not surprisingly, when the more restrictive diagnostic criteria for clinical depression are used, the proportion of Indian adolescents found to be de-

pressed is smaller (3,29,202). Based on these geographically diverse data, rates of depression among Indian adolescents do not appear to differ by are% although not all Indian areas are represented in the research base.

Some researchers have concluded that boarding school environments contribute to depression among Indian adolescents (166,170). Much of the research has been conducted with boarding school populations, so it is difficult to disaggregate the effects of boarding schools from other risk factors for depression.[4]

Overall, the numbers of Indian adolescents reporting depressive symptoms provide cause for concern.

Suicide

Suicide is perhaps the most tragic manifestation of mental health problems among Indian adolescents. An attempted suicide by an adolescent is a distinct call for help. This section provides information about the extent of the suicide problem among Indian adolescents and discusses the individual and environmental risk factors that are known or believed to be associated with Indian adolescent suicide.

Suicide Deaths

Suicide is the second leading cause of death for American Indian and Alaska Native adolescents. In 1986, the age-specific mortality rate for suicide for 15- to 19-year old Indians was an estimated 26.3 deaths per 100,000 population (table 5). In comparison, the figure for the same age group for U.S. all races was 10.0 per 100,000 population. Suicide deaths for 10- to 14-year olds are approximately four times higher than that for U.S. all races.

For 15 to 19 year olds, age-specific death rates from suicide have decreased somewhat from 30.9 in 1980 to 26.3 in 1986; however, rates for 10 to 14 year olds have increased steadily (table 5).

As with the general population, death from suicide is more likely to affect Indian males because males are more likely than females to use particularly lethal methods such as shotguns and hanging In 1986, the death rate for adolescent males 10 to 19 was approximately 10 times higher than for females of the same age. Suicide deaths for Indian females aged 10 to 19 climbed steadily during the first part of the 1980s, peaking in 1985 with 9.0 deaths per 100,000 population. In contrast, the figure for U.S. all races females aged 10 to 19 was 2.3 deaths per 100,000 population. In 1986, the rate for Indian females dropped to 3.4 deaths per 100,000, while the rate for U.S. all races females remained somewhat level at 2.2 deaths per 100,000.

While suicide is the second leading cause of death for Indian adolescents, the actual number of deaths is relatively low (e.g., 30 deaths among 10- to 19-year-old Indians in 1986). At the area level, these numbers are considerably smaller. Therefore, any area-specific death rates for suicide, even with reliable population estimates, are subject to large fluctuation on a year-by-year basis.

Suicide Attempts

Suicide deaths provide only one dimension of the problem of adolescent suicide. For every suicide, there are many more suicide attempts. Hospital admissions and self-reports by adolescent provide some information on suicide attempts.

In 1988, there were 424 hospitalizations in IHS or contract health care facilities (discharges also include deaths) for adolescents age 10 to 19 which involved a suicide attempt (ICD-9 suicide E-code) (table 6). Seventy percent (298) were females, with the majority (55 percent) of female suicide discharges among 15 to 17 year olds. Ingestion of pills was the most common method of attempt (94 percent) (351). Likewise, nearly half (47 percent) of all suicide discharges for males were for 15 to 17 year olds.

While ingestion of pills was also the most common method of attempted suicide for males (74 percent), males were more likely than females to attempt suicide via hanging (4 percent), firearms (10 percent), or cutting (10 percent). Younger males (10 to 14), however, tended to use less violent means than those in the 15- to 19-year-old age range.

[4]It may be possible to compare responses to relevant items for depression among students in different types of schools participating in the University of Minnesota Indian Adolescent Health Survey (366). However, no off-reservation boarding schools were included in the IAHS.

[5]Estimating death rates for Indians in IHS service areas is difficult because of uncertainty in the population denominator. OTA's method of estimating the Indians adolescent population is described in app. B. For additional details concerning problems with IHS data sources, see U.S. Congress, OTA (322).

Comparable data on suicide methods for non-Indian youths are not available because the use of ICD-9 E-codes is optional on hospital discharges.

Table 5-Indian and U.S. All Races Age-Specific Suicide Death Rates per 100,000 Population, 1980-86

	Indian				U.S. all races			
	Age 10-14	Age 15-19	Ages 10-19 Males	Ages 10-19 Females	Age 10-14	Age 15-19	Ages 10-19 Males	Ages 10-19 Females
1980 ....., 0.0	30.9	29.7	2.1	0.8	8.5	7.5	1.6	
1981 2,2	30.4	28.1	5.3	0.9	8.7	7.4	2.0	
1982 . . . . . 2.2	19.6	16.9	5.4	1.1	8.7	7.9	1.8	
1983 ....., . . . 4.5	30.4	27.8	7.7	1.1	8.7	7.6	1.9	
1984 . . . . . 2.3	33.0	27.1	8.9	1.3	9.0	7.1	2.0	
1985 . . . . . 5.7	35.7	33.0	9.0	1.6	10.0	9.1	2.3	
1986 . . . . . 6.9	26.3	29.8	3.4	1.5	10.2	9.3	2.2	

SOURCES: Indian: Office **of Technology Assessment, 1989, calculated from U.S. Department of Health and Human Services, Public Health Service, Indian Health Service, unpublished mortality data, Rockville, MD, 1989; U.S.** all races: **U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, unpublished mortality data from table 292A, "Deaths From 282 Selected Causes," Hyattsville, MD, no date.**

Table 6-Percentage of IHS and Contract Care Hospital Discharges for 10-to 19-Year-Olds Involving a Suicide "E-Code," 1980-88

	1980	1981	1982	1983	1984	1985	1986	1987	1988
All areas[a]	2.60%.	2.8%	2.70/o	2.9%	3.l~o	3.20/o	3.9%	3.7%	4 . 3 %
Aberdeen	3.5	3.2	4.3	4.0	4.9	4.6	5.5	7.6	6.5
Alaska	2.9	3.9	3.3	2.8	4.2	3.1	4.5	4.4	3.1
Albuquerque	3.1	4.2	3.0	4.3	2.4	4.1	4.4	4.2	6.3
Bemidji	3.7	3.2	3.6	7.3	4.0	8.1	11.2	9.7	15.5
Billings	1.9	1.8	1.1	1.2	1.7	2.7	4.0	3.1	5.5
Navajo	2.4	2.1	2.3	2.4	2.5	2.2	3.0	2.5	3.1
Oklahoma City	0.9	1.1	0.6	1.2	0.8	0.7	0.9	1.2	1.3
Phoenix	9.0	4.7	3.8	4.1	5.2	4.4	4,9	3.6	5.2
Portland	0.7	0.5	0.9	0.2	1.9	1.3	2.1	3.3	4.4
Tucson	0.9	0.6	2.9	3.3	1.8	1.1	2,5	2.8	4.1

aIncludes Nashville in total, Individual data on Nashville not presented since one IHS hospital became a "838" (tribally run) facility during this period.

SOURCE: U.S. Department of Health and Human Services, Public Health Service, Indian Health Service, Rockville, MD, unpublished IHS hospital discharge data, 1989.

During the period 1980-1988, adolescent hospital discharges involving a suicide E-code increased from 2.6 percent of all discharges to 4.3 percent (table 6).

Because of the way IHS maintains ambulatory care data, it is not possible to know how many adolescents were referred for mental health services in conjunction with a suicide attempt.

For every hospitalization for a suicide attempt, there are many more which never become part of the system. Some of these attempts may be suicide gestures with minimal health risk; others may be more serious. Still, suicide attempts often go undetected by parents or the medical community. Because suicide is such a major problem in Indian and Alaska Native communities, a recent survey of Indian adolescents (the Indian Adolescent Health Survey [AHS]) included a number of questions pertaining to suicide attempts of respondents and friends. For this Special Report, only a subset of IAHS data, collected from approximately 2,700 students in some Plains, Southeast, and Southwest tribes, is available.[7]

[7]In general, in analyzing data from the IAH, several points must be kept in mind. First, the data are a subset of 2,672 respondents drawn from the larger IHS survey which is still not complete. (Approximately 15,000 students completed surveys as of the end of spring 1989 but not all of these data were available at the time this special report was being prepared; an additional 3,000 additional surveys will be completed in the future.) Secondly, while the data may be indicative of trends in Indian adolescent health behavior they are not necessarily representative of all Indian adolescents. The subset used for this analysis involves a limited representation of students, primarily in Southwestern tribes; it does not include Alaska Native youth because survey work in Alaska was still in progress when this special report was being prepared. Also, the data are self-reported. While this method may be an acceptable one for collecting sensitive information regarding behavior and thoughts that only the respondent is aware of, there is the potential that items may not be answered truthfully. Extensive edits to detect false responses were performed on the data. However, it is not possible to detect false response patterns for all questions. Despite this latter limitation, the IAHS responses show remarkable consistency in response patterns when compared to other groups who have used a comparable instrument, Because a nearly identical survey was completed by over 36,000 Minnesota adolescents in grades 7 through 12 *(365),* data from the IAHS can be compared to this larger group. A third limitation of the IAHS (and MAHS) **was** that data collection was limited to students and does not include adolescents who have left school.

Table 7—Percentage of Indian and Minnesota Adolescents in Grades 6 Through 12 Ever Attempting Suicide

	Males		Females	
	b-lumber	Percent	Number	Percent
Indian Adolescent Health Survey				
Total	150	11 .60/0	276	20,30/o
Southwestern tribes	64	11.3	106	18.3
Plains tribes[a]	69	12.8	136	23.1
Southeastern tribes[a]	17	8.2	34	16.7
MJnneaota Adolescent Health Survey				
Metro	936	7.7	1,846	16.0
Greater Minnesota	372	5.9	829	13.2

Only surveyed grades 7 through 12.

SOURCES: Indian Adolescent Health Survey: University of Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989; MInnesota Adolescent Health Survey: University of Minnesota, Adolescent Health Program, Minnesota Adolescent Health Survey, unpub]lshed data, 1987.

Nearly 12 percent of Indian males and 20 percent of Indian females in the IAHS subset (see table 7) indicated that they had ever attempted suicide. This compares with 7 percent of males and 14 percent of females in the Minnesota Adolescent Health Survey (ratios of 1.7 and 1.4, respectively). Data from the National Adolescent School Health Survey, based on a representative national sample of adolescents in grades 8 and 10, show that just over 11 percent of males and 17 percent of females had ever attempted suicide (9).[8]

Less than one-fifth of Indian adolescents indicated that they sought medical care after their last suicide attempt, an item included to assess the seriousness of the attempt. Of those who did not seek medical care, over a fifth of females indicated that they told their best friend about their attempt. However, nearly the same proportion indicated they told no one. Males were more likely to not tell anyone about their attempt (366).

Over half of the males and females who reported having tried to kill themselves indicated that they had attempted to kill themselves more than once. Not surprisingly, Indian adolescents who had previously attempted suicide were much more likely than those who hadn't attempted suicide to indicate that they continued to have suicidal thoughts (table 8).

Clearly, adolescents who have attempted suicide once are in need of some kind of intervention. Thus, it may be encouraging that Indian adolescents who have previously attempted suicide were more likely than those who hadn't to indicate that they had ever received mental health care (see table 8). However, the extent and effectiveness of such care cannot be determined from the IAHS survey. It is noteworthy that 75 percent of adolescents who had attempted suicide report that they received no mental health care.

Completed suicides and suicide attempts of others can have a profound impact on a wide range of individuals, particularly in small communities such as those on reservations. Nearly one-third of females and one-fifth of males indicated that a friend had attempted suicide. One out often Indian adolescents reported that a friend had actually died from suicide. About one-fifth of those surveyed in the IAHS indicated that a family member had either committed or attempted suicide (table 9).

Risk Factors for Indian Adolescent Suicide

A wide range of individual risk factors has been considered in regard to Indian suicide (288). Frequent interpersonal conflict (209,226,273), prolonged, unresolved grief (79,150), chronic familial instability (86,206,263,304), depression (234,307), alcohol abuse/dependence (379) and unemployment (291,314,315,318) have been shown to be major correlates of this phenomenon. In addition, a family history of psychiatric disorder—particularly alcoholism, depression, and suicide—often has been noted (286).

The suicide rate also is higher among Indian adolescents who have been seen for psychiatric problems, who have physical illnesses, who have

[8]The average rates in the Minnesota (MAHS, IAHS) and National Adolescent School Health Survey (NASHS) differ because NASHS restricted its sample to older students. Older adolescents are more likely than younger ones to attempt suicide.

Table 8-Percentage of Indian Adolescent Suicide Attempters and Non-Attempters Having Suicidal Thoughts and Receiving Mental Health Treatment

	Attempters		Non-attempters	
	Males	Females	Males	Females
In the last month:				
No thoughts about suicide	40.0%	36.3%	77.3%	79.9%
Thoughts but would not carry them out	36.6	38.5	13.0	15.7
Would like to kill self	15.2	12.4	3.7	1.8
Would kill self if had the chance	8.2	12.8	6.0	2.6
Ever received treatment at a mental health clinic in hospital for any personal, emotional, or behavioral problem	24.8	19.0	9.1	9.5

SOURCE: University of Minnesota, Adolescent Health Program, Indian Adolescent **Health Survey, unpublished preliminary data, 1989.**

Table 9-Percentage of Indian Adolescent Males and Females Who Reported Knowing of Others' Suicide Attempts and Suicide Deaths

Suicide-related items	Percent males (n= 1,297)	Percent females (n= 1,360)
Have any family members attempted or died from a suicide attempt	18.00/0	23.00/.
Have any of your friends attempted suicide	18.4	32.4
Have any of your friends died from a suicide attempt.	8.8	10.7

SOURCE: University of Minnesota, Adolescent Health Program, Indian Adolescent **Health Survey, unpublished preliminary data, 1989.**

previously attempted suicide, who have frequent encounters with the criminal justice system, and who have experienced multiple home placements (37,86,106).

Preliminary analysis from some of the Indian Adolescent Health Survey data suggests that individuals who have attempted suicide are more likely to engage in risk behaviors such as chinking, using marijuana, and sexual intercourse. Furthermore, they are also much more likely to rate themselves in poorer health than their peers, indicate that their school performance is below average, worry about physical and sexual abuse, and report that their parents have a drinking problem (table 10).[9]

Social disintegration and acculturation also have captured a great deal of attention as possible causes of suicide among Indian and Native adolescents (169,180,181,183,367,377,378). Culture conflict and concomitant problems in identity formation are believed to produce a chronic dysphoria and anomie which render Indian youth vulnerable to suicidal behavior during periods of acute stress (137).

Suicide victims more typically belong to tribes with loose social integration-which emphasize a high degree of individuality—and that are undergoing rapid socioeconomic change. However, despite this fairly common pattern, actual rates vary dramatically, ranging from well below the national average in some Southwestern communities to well above the national average in inter-mountain tribes of the Rockies (284,285,323).

Cultural dynamics specific to certain Indian tribes also appear to be at work in determining risk for suicide among Indian adolescents. For example, Levy and Kunitz (183) illustrate that suicide rates are not only high among the Hopi in ''progressive villages and off-reservation bordertowns, but in traditional villages as well. Specifically, Hopis at special risk for suicide include the children of parents who entered into traditionally disapproved marriages, e.g., across tribes, mesas, and even clans of disparate social status. The labeling of parents as "deviant" in this regard stigmatizes their children, thereby engendering a distinct series of stressors.

In another example, Levy (180) suggests that suicide among Navajo males may indicate their relative lack of integration into a changing, matrilineal society. Moreover, he describes how these individuals seem to employ suicide to withdraw from intolerable situations, and yet, by virtue of its social, cultural, and spiritual affront to the survivors, accomplish a final act of aggression. Lastly, tribes which emphasize a high degree of individuality generally exhibit higher rates of suicide than those which emphasize conformity. Classic comparisons include the Apache, Navajo, and Pueblo communities, with the former representing "looser" social

9B~au~the IAHS w* cross-section~, it is not possible to know with certainty whether these are risk factors for or consequences of suicide attempts.

Table l0--Covariation of Suicide Attempts With Behavioral and Environmental Risk Factors

	Males (n=l,297)	Females (n=l,360)
Worry about abuse from parents:		
Never attempted suicide	14.0	23.5
Ever attempted suicide	16.8	32.0
Worry about being forced to do something sexual:		
Never attempted suicide	13.3	28.0
Ever attempted suicide	13.2	33.9
Ever had sexual intercourse:		
Never attempted suicide	24.4	16.0
Ever attempted suicide	48.6	36.5
Feeling depressed in last month:		
Never attempted suicide	14.0	15.0
Ever attempted suicide	31.7	30.3
Ever drink beer or wine:		
Never attempted suicide	54.8	48.8
Ever attempted suicide	73.8	71.4
Drink beer or wine at least weekly:		
Never attempted suicide	11.3	6.6
Ever attempted suicide	24.5	19.8
Ever use marijuana:		
Never attempted suicide,	35.8	27.4
Ever attempted suicide	57.6	51.9
Use marijuana at least weekly:		
Never attempted suicide	10.2	5.6
Ever attempted suicide	23.8	17.6
Parental drinking problems:		
Never attempted suicide	17.0	21.1
Ever attempted suicide	26.1	32.5
Feel in poor or fair health:		
Never attempted suicide	16.7	19.7
Ever attempted suicide. ,	28.1	31.6
Perform below average in school:		
Never attempted suicide	10.9	9.4
Ever attempted suicide	20.1	13.4

SOURCE: University of Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989.

integration and that latter two representing 'tighter' integration (203,367).

Suicide Clusters

There appears to be an increasing tendency for suicides to occur in clusters, defined as any series of three or more suicides closely related in time and space (61). Several articles have recently appeared in the literature specific to Indian and Native adolescents population (26,71,184) but on the whole little is known about this phenomenon among adolescents in general, much less among Indian adolescents. Conventional wisdom holds that clustering occurs more frequently among females than males, despite higher overall rates among males (250). Reports of cluster suicides among Indian adolescents differ slightly in that the victims are predominantly males, although many attempts by females occur, usually by less lethal means, at similar points in time. Subsequent suicides may be stimulated by personal knowledge of the victim, of the circumstances surrounding the death, and by interpersonal proximity in a relatively closed community. Extensive media coverage may also contribute to the increased probability of serial suicides by dramatizing the death and focusing widespread attention on the victim (1 18). Bechtold's (26) analysis suggests that serial suicides by Indian adolescents are fueled by the same interpersonal and social dynamics as those which underpin this phenomenon in the population at large.

Anxiety

Like depression, anxiety-related disorders are recognized but not well delineated among the emotional problems associated with childhood and adolescence. The most salient features include excessive fearfulness accompanied by muscular tension, avoidant behavior, somatic complaints without an organic basis, and repeated nightmares. Separation from parents, family, or familiar surroundings, fear of strangers, and various phobia are common forms of anxiety which can impair function.

Information about anxiety among Indian and adolescents derives from the same set of studies summarized above in regard to depression.

Beiser and Attneave (29) reported that anxiety was the fourth most common mental health problem for youth seen through IHS mental health programs in 1974, nearly equal to the frequency of depression (table 11). Eight percent of all boys and girls between the ages of 15 and 19 were identified as suffering from anxiety. May's (202) survey revealed that in 1981 and 1982, about 18 percent of all males and nearly 10 percent of all females seen for anxiety in the IHS Albuquerque Area Office mental health program were between 10 and 19 years of age. Studies of boarding school and college students conducted by the National Center for American Indian and Alaska Native Mental Health Research also included measures of anxiety symptoms. These studies suggest remarkably high levels of different forms of anxiety among Indian adolescents.

Table 1 l-Studies Generating Estimates of Anxiety Among Indian Adolescents

Study[a]	Setting	Sample	Method	Findings
Studies using mental health service utilization review:				
Beiser and **Attneave,** 1982	IHS mental health programs (nationwide) (1974)	clients 15 to 19	chart review	8% of clients
May, 1983	IHS mental health programs (Albuquerque area)	clients 10 to 19	chart review	13% of clients (1981) 11 .3% of clients (1982)
Studies using **self-reports of symptoms:**				
NCAIANMHR, Indian Boarding School Project, 1989	Tribally administered boarding school (Southeastern U. S.)	students grades 9-12 (n=188) age range = 12-20 average age = 16	self-report survey	24% physiologic reaction; 44% phobic reaction; 40% performance reaction
NCAIANMHR, Indian Boarding School Project, 1989	BIA administered boarding school (Western U. S.)	students, grades 9-12 (n=225)	self-report survey	27% physiologic reaction; 51% phobic **reaction;** 43% performance reaction
NCAIANMHR, College Student Life Transitions Project, 1989	State-supplement universities AK, MT, NM, AZ	college students, (n=605), age range= 17-54 average age =25	self-report survey	23% physiologic reaction; 48°/0 phobic reaction; 56°/0 performance reaction

[a]References are **located at** end Of report.

80 SOURCE: Office of Technology Assessment, 1990.

Substance Abuse and Dependence

Given the high rate of deaths among young Indians due to causes related to substance use, particularly alcohol (322), there is considerable interest in this problem among Indian tribes and health providers. Several recent surveys point to different conclusions about the extent of substance use among Indian adolescents (table 12). Surveys by Beauvais and Oetting and their colleagues have found high rates of alcohol and drug experimentation among Indian adolescents relative to non-Indian adolescents (25). For example, in 1986-87 an average[10] of 81 percent of Indian students in grades 7 to 12 had used alcohol at some time; 61 percent had used marijuana; 24 percent had used inhalants; 25 percent had used stimulants; 8 percent had used cocaine; 10 percent had used hallucinogens; 11 percent had used sedatives; and 5 percent had used heroin (table 12). Comparable data for non-Indian students are not available, but non- Indian adolescents surveyed by NIDA for their 1985 and 1988 household surveys were much less likely than Indian adolescents to have used each of these drugs (table 12). Preliminary data from the more recent IAHS found much lower use of drugs among Indian adolescents than did the Beauvais and Oetting surveys. Minnesota students were not asked about the same range of drugs that Indian students were asked about, but when they were asked, alcohol and cocaine use were comparable, and marijuana use was higher among Indians than among the mostly non-Indian Minnesota sample. *1

What is not clear from the data on lifetime prevalence (i.e., "ever" having used a drug) is the number of adolescents who are dependent on or otherwise abuse drugs, as opposed to experimenting with them once. In a survey of attitudes towards drugs on the Wind River reservation in Wyoming, adolescents were found to have a more favorable attitude toward the use of marijuana and other drugs,

[10]Obviously, in surveys, fewer younger adolescents than older adolescents are found to have ever used drugs. When the Percent ever having used drugs is averaged across all age groups, the overall percent is lower than it would be if only the older adolescents were counted.

[11]The reasons for **the apparent** difference between the **Beauvais** and **Oetting** and the IAHS surveys of Indian adolescents **are** not **clear. Both surveys** were conducted among adolescents attending school, so they cannot differ because of possibly unequal drug use by school dropouts, There are subtle, but not striking, differences in **questionnaire** wording between the two surveys that may account for some of the differences, Also, the IAHS data are preliminary and may not reflect the prevalence of drug use among **all** Indians.

Table 12-Estimates of Percentage Indian and Non-Indian Adolescents Ever Using Alcohol and illegal Drugs

	Indian adolescents			Non-Indian adolescents		
	Estimates from surveys by Oetting and Beauvais		Estimates from survey by University of Minnesota	N IDA National Household Surveys		Minnesota Adolescents
	1984-85a	1986-87a	1988-89a	1985a	1988'	1987-88d
Alcohol	79%	81%	570/0	570/'	50%	611%0
Marijuana	57	61	32	24	17	20
Inhalants	24	24	13	9	9	N/A
Stimulants	25	25	11	6	4	N/A
Cocaine	8		5	5	3	<5
Crack	N/A	N/A	2	N/AIA	1	N/A[e]
Hallucinogens	9	10	4	3	4	N/A
Sedatives	10	11	3	4	2	N/A
Heroin	5	5	1	<5	1	N/A

aReServatiOn based sample; Indian adolescents attending school, grades 7-12.
[b]Reservation/service unit samples; Indian adolescents attending school, grades 6-12.
[c]Household based survey of youth aged 12-17.
[d]School based sample; Minnesota adolescents in grades 7-12.
[e]Included in cocaine total.

SOURCES: 1884-85, 1988-87 Indian data: F. Beauvais, E.R. Oetting, W. Wolf, et al., "American Indian Youth and Drugs, 1976-1987: A Continuing Problem," *American Journal of Public Health* 79(5):634-636, 1989; 1988-89 Indian data: University of Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989; 1985non-Indian data: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse, *National Household Survey on Drug Abuse: Population Estimates* 1985, DHHS Pub. No. (ADM) 87-1539 (Rockville, MD: 1987); 1988 non-Indian data: U S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse, Division of Epidemiology and Prevention Research, *National Household Survey on Drug Abuse. 1988 Population Estimates*, DHHS Pub. No. (ADM) 89-1636 (Rockville, MD: 1989): 1987-88 Minnesota non-Indian data: University of Minnesota, Adolescent Health Program, *The State of Adolescent Health in Minnesota*, February 1989,

to be more likely to try using marijuana and other drugs, but no more likely to continue using such drugs after trying them than white adolescents from the same geographical area (58). Nonetheless, observers have noted cause for concern. Persistently high drug use is still the norm across most categories for young Indian people, especially in regard to marijuana, inhalants, and stimulants (25,239). In addition, Oetting and Goldstein's work (242) revealed that American Indians begin abusing various substances at a younger age than their white counterparts (also see 373). Further, once they enter adolescence, Indian youth seem particularly prone to using alcohol and other drugs in combination with one another (239). Inhalant use appears to decline, however, as other substances such as marijuana and alcohol become more accessible.

Finally, the potential for affecting the family and community exists because of financial considerations (185) and possible physical damage due to drug usage. These factors are especially salient because of the low socioeconomic levels of most Indian people and the strong traditional value placed on the family as a unit.[12]

Identity Disorder, Alienation, and Self-Esteem

Identity disorder refers to the severe subjective distress that stems from one's inability to integrate various aspects of the self into a coherent and acceptable sense of personhood (12). It is typically characterized by uncertainty across a number of areas relating to identity, such as long-term goals, friendship patterns, religious membership, moral values, and group loyalties. Though obviously relevant to the life experiences of many Indian adolescents, Indian adolescent identity disorder has yet to appear in the published literature as a formal focus for discussion. However, this same literature is replete with studies that address elements which are central to identity disorder, namely self-esteem and alienation. The missing dimension is the associated degree of functional impairment, and thus this topic marks an area of transition from the mental disorders to serious, but less diagnostically specifiable, problems.

For the most part, studies on self-esteem and alienation suggest that Indian adolescents have negative views of themselves (see table 13). However, a review by Development Associates concluded that while Indian students test at lower than

[12]The topic of substance use by Indians will be covered more extensively in a forthcoming paper on the physical health of Indian adolescents. Clearly, however, substance abuse has mental health implications.

normative levels with respect to their personal self+ oncept, they hold their own cultural group in high regard (76). They may characterize themselves as being friendly, helpful, easy-going, and more interested in happiness than in success, but not as being particularly smart, strong, good- looking, or at ease in front of groups. The type of school attended—a segregated BIA school or an integrated public school-does not appear to affect self-esteem or sense of alienation according to Development Associates (76).

Conduct Disorder, School Dropout, Delinquency, and Running Away

By definition, conduct disorder is almost entirely restricted to children and adolescents.[13] The essential feature of conduct disorder is "a persistent pattern in which the basic rights of others and major age-appropriate societal norms or rules are violated" (12). To meet the diagnostic criteria for conduct disorder, an adolescent would have to have a disturbance of conduct lasting at least 6 months, during which at least 3 of 13 specified symptoms would exist. These behavioral symptoms include running away from home overnight at least twice, lying often, truancy from school, the deliberate destruction of others' property, stealing, fighting, and other behaviors (12).

The literature does not allow an analysis of the incidence and prevalence of diagnosable conduct disorder among Indian adolescents. However, studies exist concerning several of the symptoms characteristic of conduct disorder, including dropping out of school, running away, and delinquent behavior. These studies provide some information about the possibility of conduct disorder among Indian adolescents. It is important to keep in mind that these are only single behaviors and do not necessarily mean that the adolescents involved have a diagnosable mental disorder. Running away, dropping out of school, and delinquent behavior may indicate that an adolescent is experiencing emotional stress. In some instances the behaviors involved may be a relatively rational response to environmental problems.

School Dropout

The available literature reveals that Indian students drop out of school at rates substantially higher than the general population. At least 10 studies conducted since 1959 place dropout rates for Indian students between 15 and 60 percent, whereas the frequency of dropout in the general population reported by the same studies ranges from 5 to 30 percent (49,63,72,76,120,309,326,320). Five regional studies confirm these findings, although the differences between Indian and non-Indian students appeared to be negligible in two surveys of New Mexico schools (20,66,140,280,293,358,388).

There are culture-specific factors that help to account for Indian students dropping out of school. Szasz (305), for example, argued that lack of participation and failure within the educational system---coupled with its historic failure to address Indian cultural values and ideals-has led Indian people to perceive schools as irrelevant. In addition, many Indian families still function on the basis of mutual sharing and reciprocity, wherein family needs assume priority over personal desires and larger societal demands. It is no accident, then, that Indian dropouts have frequently cited being needed at home to care for younger siblings and older family members as a reason for leaving school (129). Other family-related factors like mobility and instability also contribute to Indian student dropout. Wax and Wax (372) found a strong relationship between dropping out and irregular employment of fathers among Indian high school students. Brown (47) demonstrated that the families of many Indian school dropouts are characterized by marital conflict, divorce, unstable residence patterns, and parental alcoholism.

Delinquency

Delinquency is thought to be a large and growing problem among Indian adolescents. There is, however, relatively little information to substantiate this assumption.

Forslund and Meyers summarized the studies that appeared in the 1960s and early 1970s (104). These studies indicated that delinquency among Indian youth was characterized by a preponderance of petty offenses and misdemeanors. Forslund and Meyers' own detailed analyses of available records for

[13] Other disruptive behavioral disorders include attention-deficit hyperactivity disorder and oppositional defiant disorder (12). Conduct disorder is classified as one of the disruptive behavioral disorders.

Table Studies Generating Estimates of Self-Esteem and Alienation Among Indian Children and Adoieecents

Study[a]	Setting	Sample	Method	Findings
Melville, 1968	Public school rural Utah	Navajo students grades 9-12 (n = 99)	Self-concept scale	Navajo ratings lower than white ratings; no relationship between self-concept and achievement
Dankworth, 1970 ...,	Urban/rural public school Washoe County, Nevada	Students in grades 7-12 (n= 178)	Self-concept inventory	Self-ratings strongly relate to achievement
Hoffman, 1969	Public school, mission school, BIA School (Montana, South Dakota)	Male students grades 9-12 economically disadvantaged (n= 147)	Brownfain Self-Rating inventory; Herriott Your Future Plans	Ratings increased w/SES; decreased with family instability
Lammers, 1969.	Segregated and desegregated public schools, New York, NY	Onondaga students grades 1-6 (n= 120)	Self-Social Symbols Tasks Self-Concept of Ability Scale	Indian ratings equal to white ratings
Corrigan, 1970	BIA and public boarding school Riverside, CA	Students (BIA = 145) (Public=106) grades 1-6	Interviewer-assisted testing; Tennessee Seif-Concept Scale	Indian students scored lower than white norms; significant gender differences
Gardner, 1972	BIA school, Gila River Reservation, AZ	Pima students grade 4 (n= 102)	Self-Esteem Inventory; California Short Form Test of Mental Maturity	Pimaratings lowerthanwhite and related to reading achievement
Fuchs and Havighurst, 1973. .	Public school	Students (n= 2,000)	Self-report survey	Indian ratingsgenerally high; self-ratings equal to white ratings
Martig and DeBlassie, 1973 . . .	Pubficschool Tularosa, NM	69 Mescalero and 60 white students, grades 1-4	Interviewer-assisted testing; Primary Self-Concept Scale	Indian ratings equal to white ratings; male less than female
Benjamin, 1973	Public schools and boarding schools; Anchorage, Beltz, Bethel and St. Mary's, AK	Eskimo students, grade 9 (n= 90)	Self-report survev: Semantic Differential Scale	Mixed; high ratings on interpersonal aspects; low ratings on intelligence
Withycombe, 1973 . . .	Public schools, rural and urban Nevada	Paiute and white students grade 1 and 5 (n = 108)	"This is Me" scale; Bills index of Adjustment	Paiute ratings lower than white ratings; Paiute ratings decline with age

[a]References are located at end of report.

Arapaho and Shoshone youth on the Wind River Reservation (Wyoming) revealed similar trends. Forslund and Cranston (103) followed up with a self-report survey among adolescents drawn horn the same community. While youth from both Indian and non-Indian backgrounds reported having frequently engaged in delinquent acts, there were significant differences between Indian and non-Indian males on only 7 offenses and between Indian and non-Indian females on only 16 offenses. Jensen, Strauss, and Harris (148) demonstrated that factoring out alcohol-related offenses (e.g., arrests for drunkenness)--to which Indian youth, in their data, were three times more prone than Anglo or Hispanic children—rendered delinquency rates comparable across different populations.

May's (202) analyses of BIA law enforcement data from the Albuquerque Area are consistent with earlier findings from the Wind River Reservation. In 1982, the most frequent causes for arrest were disorderly conduct (25.9 percent), liquor law violations (11.2 percent), curfew violations (9.8 percent), drunkenness (9.6 percent), and running away from home (6.6 percent). Fifty-eight percent of juvenile arrests were for alcohol use: 63 percent for males and 37 percent for females.

Running Away

Runaway Indian youth are reportedly a growing problem and have captured recent interest. Data are relatively sparse, however, reflecting the difficulty in identifying and reaching this population.

In an extensive study, the Indian Center, Inc., of Lincoln, Nebraska, and the Department of Sociology at the University of Nebraska (143) collaborated in a survey of 120 runaway Indian adolescents and 91 of their parents. In this survey, the typical runaway was female (53 percent), 15 years of age, in the 8th grade (although 46 percent had been expelled or suspended and another 20 percent had dropped out

Table 13-Studies Generating Estimates of Self-Esteem and Alienation Among Indian Children and Adolescents-Continued

Study[a]	Setting	Sample	Method	Findings
Rosenthal, 1974	Community-wide Lac du Flambeau, WI	Chippewa; age range 3-10 years	Interviewer administered picture identification test	Chippewaratings lower than white and black ratings
Thornburg, 1974	Public school rural Arizona	Students (n= 265) grade 9	Self-report survey; Tennessee Self-Concept Scale	Indian ratings lower than Black or Mexican-American ratings
Lefley, 1974	Tribal school Miccoskkee and Seminole, FL	Miccosukee and Seminole students; grades 1-6; age range 7-14 years; average age = 10 (n = 72)	Piers-Harris Children's Self--Concept Scale	Indian ratings lower than white ratings; related to acculturation
Ross, 1975	Public school, BIAschool; on/off reservation Navajo Nation	Navajo students, grades 7-8	Michigan State Self-Concept of Academic Ability	Ratings more frequently positive than negative; significant difference by type of school
Beuke, 1978	Public school northeastern Arizona	Students grades 5-8 (n =574)	Self-Esteem Inventory	Indian ratings lower than white ratings
Howell, 1979 .., ...	Public School Denver, CO	Students grades 1-6 (n =132)	Interviewer-assisted self-report; Self-Esteem Inventory	Indian ratings lower than Black and Hispanic ratings
McClary, 1979 ...., . .	Public school Buffalo, NY	Students grades 9-1 2; average age = 16 (n = 63)	Bills Index of Adjustment	Indian ratings lower than white ratings
Holmgren, 1981	Public school Wyoming	Students Arapaho, Shoshone, grades 9-12 (n=114)	Alienation Scale	Indian ratings lower than white ratings; related to drinking
Sampson, 1981	Public schools; urban and rural	Students Lumbee, Black, Puerto Rican and white; grades 3-12 (n= 908)	Self-Concept Inventory	No differences by ethnicity; rural Indians higher than urban Indians
Development Associates, 1983 . .	Schools nationwide	Students grades 4-12 (n= 12,000)	1 O-item self-esteem and academic self-concept scal	Ratings generally high

[a]References are located at end of report.

SOURCE: Office of Technology Assessment, 1990.

of school), living at home (62 percent) with both parents (83 percent); and had at least three siblings. Her father was either unemployed (21 percent) or underemployed (23 percent) and on public assistance (16 percent). Her mother was either unemployed (26 percent) or underemployed (17 percent) and on public assistance (46 percent); was not a native language speaker (90 percent); and did not come from a traditional family background (71 percent).

According to the study authors, these runaway Indian youth in many ways are comparable to runaway youth in general. The majority of the adolescents in the Indian Center study had run away from two to five times (50 percent); 9 percent had runaway more frequently. While almost one-third stayed away from home only 1 day the most recent time out, nearly half stayed away from 2 to 10 days. The remainder were gone even longer. Fifty-six percent of the runaway Indian youth stayed within a 10-mile radius of home, while a relatively small number (15 percent) traveled more than 50 miles away. Most stayed with a relative (36 percent) or friend (53 percent). Only 1 percent stayed in a shelter; another 1 percent stayed in a group home, 3 percent lived in the streets, and 1 percent spent some time in jail. Adolescents in the study almost never sought or received assistance from the police, legal services, child protective services, runaway hot lines, counseling, the clergy or other spiritual leaders, local Indian centers, or drug or alcohol programs. As one might expect, age (16 and older) was strongly and positively related to the frequency, duration, and distance of running away as well as to the likelihood of using public services.

Conflict with parents and home-related problems were the predominant causes of running away but some have run away because of school difficulties and other problems (table 14). Older respondents were more likely to run away because of problems

Table 14-Reasons Given By Indian Adolescents for Running Away (n= 120)

Reasons	Percentage
School performance:	
Poor attendance	17
Kicked out of school	9
Problems with the teacher	7
Bad grades	5
Other school problems	23
Family problems:	
Argumentswith parents	38
Can't talk to parents	29
Parents' problems with alchohol or drugs...	21
Parents too strict	19
Sibling problems.	12
Neglected by parents	8
Abused by parents	8
Parents divorce.	6
Parents kicked youth out of home.....	5
Domestic violence	4
Sexual abuse by parents.	1
Want to live with other parent	12
Other home problems	29
Youth in trouble with law	12
Youth in trouble with peers	10
Alcohol or drug problem	15
Pregnancy	6
Friend ran away.	15
Feared consequences of misbehaving	12
Other personal problems	13

SOURCE: Indian Center, inc., Lincoln, NE, and University of Nebraska, Lincoln, Department of Sociology, Bureau of Sociological Research,"TheNativeAmerican Adolescent Research Project: Reporton InterviewSurveysof Runaways,Parents,Community Leaders and Human Service Workers," unpublished report, Lincoln, NE, July 1986.

withtheirsiblings. Males weremore likelytoreport legal problems or trouble with alcohol and drugs, while females more often indicated that they ran awaybecauseafriendhada.lsorun away.Comparisons between youths who had run away only once and those who frequently did so revealed that the latter were more likely to mention parental strictness, arguments with parents, not being ableto talk to parents, andparenta.1 alcohol and drug abuse.

While away from home, the following problems were most frequently encountered: lack of money (47 percent); lack of clothing (35 percent); lack of transportation (18 percent); trouble finding work (17 percent); getting into trouble with the law (10 percent); and alcohol and drug problems (10 percent). Physical and sexual abuse, loneliness, illness, absence of other Indian people, inability to contact family, and racial discrimination were seldom mentioned, and usually only by older adolescents who had been farther and longer away from home.

In returning home, most of the runaway Indian youths surveyed indicated that the problems which led them to leave were still present. Few (17 percent) reported using services that might help them cope more effectively with these stresses.

The authors concluded that since the vast majority of runaway Indian youth stay with friends and family, resources should be redirected from shelters and other public services to those who actually shelter them.

ENVIRONMENTAL RISK FACTORS FOR MENTAL HEALTH PROBLEMS

A wide range of stressors contribute to mental health problems among Indian adolescents. Many Indian communities experience high rates of unemployment, poverty, alcohol abuse, physical illness, and death (322). These problems have been associated with mental health problems of children and adolescents (323). This section discusses the prevalence and consequences of several environmental risk factors as discussed in the Indian health literature. These include: otitis media, fetal alcohol syndrome, child abuse and neglect, parental alcoholism, family disruption, and school problems. In addition, Indian adolescents have recently been asked about the extent to which they experience stress, both relative to specific life situations and generally; these data are also reported.

Physical Disorders

Otitis Media

Otitis media (middle ear infection) is widely regarded as the most frequently-identified disease of Indian children. Its special significance for adolescent mental health lies in the learning and developmental consequences that may follow from subsequent mild to moderate hearing loss (218,220).

Otitis media is most prevalent from birth to approximately 7 years of age (142,215), which coincides with critical periods in language acquisition. Considerable evidence has been amassed that demonstrates the contribution of otitis media to hearing loss (17,96,247), delays in cognitive and psycholinguistic development (159,157,389), low-

ered educational achievement (83,107,219,319), and reading problems and emotional difficulties (32,295). The potential scope of these problems is reflected in estimates that as many as 75 percent of all Indian children experience otitis media, that 13,000 Indians are in need of hearing aids, and that as many as 22,000 may require otologic surgery (296).

Fetal Alcohol Syndrome

No review of environmental risk factors is complete without considering Fetal Alcohol Syndrome and Fetal Alcohol Effects and their potential for engendering neurosensory and developmental disabilities. The pioneering work in this area was conducted by May and his colleagues (207,208). In a detailed comparative analysis of selected IHS service units and reservations on which there was adequate case-finding, May and his colleagues found that one group of Indians had a higher incidence of FAS than any that had been reported previously. Two other Indian groups had lower rates, comparable to those reported in samples in Seattle, Sweden, and France, but the incidence appeared to be growing. Of all the fetal alcohol children, 73 percent had been adopted or placed in foster homes because of abandonment or neglect by their natural mothers. Twenty-three percent of biological mothers had died, almost always from an accident, cirrhosis of the liver, or other alcohol-related trauma and illness.

One unanticipated finding noted by May and his colleagues was the relatively small number of mothers responsible for the prevalence of FAS and FAE. This finding suggests that prevention can be targeted to high-risk mothers.

Child and Adolescent Abuse and Neglect

Child and adolescent abuse and neglect is of increasing concern in Indian communities (327). The mental and emotional health of adolescents can be affected by abuse and neglect because they themselves are abused and neglected, or because of lasting emotional scars from abuse and neglect in their earlier years. There is wide variation in estimates of the prevalence of child and adolescent abuse and neglect (see table 15). At present, it is unclear whether this variation is due to widely divergent definitions of the phenomena. to differential reporting methods, or to true epidemiologic differences that reflect the particular stresses and strains of local communities[14] (383).

Not surprisingly, a review of medical records of hospitalized children found the lowest rate of abuse and neglect (5.7 per 1,000 population [99]); few abused and neglected children are hospitalized. Recent data indicate that more than 6,500 referrals for suspected child abuse and neglect were made to BIA in fiscal year 1988 (360). Eighty-one percent (5,338) of the referrals were substantiated within the year. The BIA data underestimate the extent of abuse and neglect of Indian children for several reasons:

- Referrals to BIA do not represent all cases. In some States (e.g., Alaska and California), State social service agencies rather than BIA may play a central role in handling suspected Indian child abuse and neglect cases.
- There is no mechanism for formal and systematic reporting of child abuse and neglect cases to BIA or tribal contract social services programs.
- These data do not include urban Indians.

Nevertheless, these data reflect that a minimum of 1 percent[15] of Indian children in BIA service areas may have been abused or neglected in a single year. Self-reports by Indian adolescents bear out these estimates. In the IAHS survey, 8.3 percent of male and 24 percent of female 7th- to 12th-graders reported that they had been abused physically, sexually, or both at some time in their lives (table 16) (366). Minnesota students were much less likely to report either physical or sexual abuse but were more likely than Indian adolescents to indicate that they had ever discussed the abuse (table 17). The students were not asked whether they had been neglected.

Risk Factors for Abuse and Neglect

Causes of child abuse and neglect in Indian and Native communities span the full spectrum of possibilities. Interpersonal conflict, marital disruption, parental alcoholism, inadequate caregiver-

[14]The issue of what constitutes child abuse and neglect in Indian communities has engendered a great deal of debate. Korbin (168) has suggested that it be defined as ''the idiosyncratic departure from culturally and socially acceptable standards (of childrearing) that result in harm to a child or compromises his/her physical, emotional, cognitive, social, or cultural development. This view has found considerable currency in recent studies among Indians (98,186). However, regardless of the present differences in definition, there seems to be no question that, in virtually every report, the rates of child abuse and neglect among Indian communities equal or exceed those of their non-Indian counterparts,

[15]Rate based on estimated IHS child service population of 3%',065.

Table 15-Studies Generating Estimates of Abuse and Neglect Among Indian Children and Adolescents

Study[a]	Setting	Sample	Method	Findings
Jones, 1969	Native village (Alaska)	Entire Alaskan village (n= 201)	Participant observation; records review	1/3 of all children
Wichlacz, Lane and Kempe, 1978	Cheyenne River Sioux	65 reported cases; average age = 4.5 years old	Register of suspected cases	Rate 26 per 1,000
White and Cornley, 1981	Navajo Nation human service agencies	Clients under 9 years old	Service utilization review	Rate 13.5 per 1,000
Fischler, 1985	IHS hospital (San Carlos)	Service population (N= 6,000)	Medical chart review; staff survey	Rate 5.7 per 1,000
Hauswald, 1987	Navajo Nation	Mothers in 110 normal and problem families in Fort Defiance and Chinle agencies	Ethnography; agency reports	Rate 13.5 per 1,000
Lujan, DeBruyn, May, et al., 1989	Sante Fe IHS Hospitals, NM	53 reported cases; age range O to 21 years old, median age 10 years old	Hospital records review	Frequent co-occurrence of abuse and neglect; related to family disruption
Piasecki, Manson, Hiat, et al., 1989	Albuquerque and Phoenix IHS Service Area	1,155 children in mental health treatment, in need of same or abused or neglected; age range O to 18 years old; average age = 13 years old	Key informant interviews of Federal human service providers	67% had experienced abuse or neglect; more girls than boys; strong relationship to family stability; associated with more psychiatric symptoms, substance use, delinquency
University of Minnesota, IAHS, 1989	Schools (Plains, Southeast, Southwest)	7th-1 2th graders (n= 2,700)	IAHS	8.3% of males, 24.0% of females report being abused physically, sexually, or both
Plantz, Hubbell, Barrett, et al., 1989	BIA service areas nationwide, except for "280" States	All referred cases	Report of referred cases	Referrals; 58°/0 of investigated cases substantiated

[a]References are located at end of report.

SOURCE: Office of Technology Assessment, 1990.

child bonding, severe educational deficits, chronic physical illness, unemployment, and violent death are common among the families of abused and neglected Indian children (99,147,237,380,382). In this respect, the dynamics probably mirror those of families in general (60,135). Contributors more specific to Indian communities include stresses resulting from rapid sociocultura1 change, gender role changes, failed parenting skills, the changing nature of the extended family, and special risks attached to boarding schools (27,1 19,133).

In the Piasecki et al. (251) survey (see table 15), children with histories of abuse or neglect were more likely to have experienced parental alcoholism, divorce, single parenting, or a chaotic family situation. Children with histories of both abuse and neglect had experienced a higher frequency of each disruptive event except having a single parent.

It is not surprising that, in this study, more Indian children residing with foster or adoptive families had had histories of abuse and/or neglect than their counterparts who lived either with parents or in such institutional settings as boarding schools. In both Indian and non-Indian communities, child abuse and neglect are common reasons for out-of-home placement. The troublesome aspect of these findings lies in the observation that, at the time of the survey, 61 percent of the children with histories of abuse and/or neglect resided within the familial households that likely gave rise to these conditions. Several recent, highly publicized cases of sexual abuse in BIA schools, such as the 1980 and 1987 incidents at

Table 16-Percentage of Indian Adolescents Who Indicated Ever Being Abused by Family Members or Others[a]

Region	Physical only	Sexual only	Both physical and sexual
Total IAHS subsample:			
Males (n= 1,297)	6.0%	1 .1%	1 .2%
Females (n= 1,360)	9.9	6.3	7.8
Plains subsample:			
Males (n = 529)	5.7		
Females (n = 565)	11.5	5.5	8.2
Southwest subsample:			
Males (n= 564)	6.2	1.6	1.5
Females (n = 575)	9.4	6.8	6.6
Southeastern subsample:			
Males (n = 204)	6.0	0.7	2.2
Females (n = 200)	6.3	7.4	9.7

[a]Items were:

Have you ever been physically abused or mistreated by anyone in your family or by anyone else?

Have you ever been sexually abused? Sexual abuse is when someone in your family or someone else touches you in a place you did not want to be touched or does something sexually which they shouldn't have done.

SOURCE: University of Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989.

Table 17—Percentage of Indian and Minnesota Adolescents Who Indicated Ever Being Physically or Sexually Abused

Region	Phvsical	Sexual	Both
IAHS subsample:			
Males (n= 1,297)	6.00/0	1 .1%	1 .2%
Ever discuss	44.2	34.7	N/A
Females (n= 1,360)	9.9	6.3	7.8
Ever discuss	60.4	15.6	N/A
Minnesota AHS:			
Metro males (n = 12,155)	5.1	2.1	N/A
Ever discuss	58.0	49.5	N/A
Rural males (n = 6,300)	4.2	1.7	N/A
Ever discuss	50.2	40.0	N/A
Metro females (n = 11 ,538)	14.5	15.5	N/A
Ever discuss	71.2	62.6	N/A
Rural females (n = 282)	11.5	13.2	N/A
Ever discuss	65.7	57.8	N/A

SOURCES: IAHSsubsample: University Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989; Minnesota AHS: University of Minnesota, Adolescent Health Program, Minnesota Adolescent Health Survey, unpublished data, 1987.

Navajo and Hopi, respectively, indicate, however, that home is not the only arena in which Indian children are at risk for abuse (327).

Consequences of Abuse and Neglect

Children who have been abused and/or neglected exhibit behavioral, social, developmental, and cognitive deficits when compared to children who have not experienced abuse or neglect (48,94,121,174,198,312). Results from studies using clinical samples are mixed, however, with respect to whether and how abused and neglected children suffer from different or more severe mental disorders than other non-abused, but emotionally disturbed children (56,160,230; 268). Monan, Leichter, and Lewis (230) indicated that abused and/or neglected children did not differ diagnostically from other emotionally disturbed children, except that the abused and neglected children were more violent. The study by Carmen, Rieker, and Mills (56) found no differences between the diagnoses assigned psychiatric inpatients with and without abuse histories. However, female patients who had been abused were more self-destructive than nonabused females and abused males were more aggressive than non-abused males. Kazdin and his colleagues (160) found that physically abused subjects (ages 6 to 13) showed greater depression and hopelessness than the non-abused controls, but only on self-report measures, not diagnostically. Rogeness, Amrung, Macedo, et al. (268) reported increased conduct disorder in abused or neglected boys and in abused girls, and more borderline, conduct, and concentration symptoms in abused or neglected children than in non-abused, non-neglected children.

Data from the Piasecki et al. study are consistent with previous findings that children who have experienced abuse only or neglect only do not differ psychiatrically from those who have experienced neither abuse nor neglect. But, those children who suffered both abuse and neglect did evidence greater frequencies of symptoms of mental health problems than any of the other children. In addition, they were more likely to have been expelled from school or run away from home.

Students responding to the IAHS who had been abused were more likely to be more worried about abuse, to feel depressed, to feel in poor or fair health, to perform below average in school (males only), and to have engaged in the risk behaviors of sexual intercourse,[16] alcohol and marijuana use, and attempted suicide (table 18).

[16]This may & a misinterpretation, because the sexual abuse may have involved forced sexual intercourse. Thus, the sexual intercourse could not properly be considered a risk behavior of the adolescent. However early voluntary sexual intercourse maybe a consequence of childhood sexual abuse (264,271). Evidence also shows that sexually abused children may later experience feelings of increased vulnerability, stress, and sexual dysfunction (264,332).

Table 18-Covarlation of Abuse With Behavioral Risk Factors and Stress

	Percentwhoexperienced or did not experience abuse	
	Males	Females
Worry about abuse from parents:		
Both physical & sexual abuse	20.0%	36.1%
Physical abuse only	18.1	35.5
Sexual abuse only	34.5	31.3
No abuse	13.3	23.6
Worry about being forced to do something sexual:		
Both physical & sexual abuse	22.0	41.2
Physical abuse only	16.9	30.0
Sexual abuse only	21.8	35.8
No abuse	12.7	27.8
Ever had sexual intercourse:		
Both physical & sexual abuse	40.0	49.8
Physical abuse only	39.1	34.5
Sexual abuse only	33.9	36.0
No abuse	25.9	14.4
Feeling depressed in last month:		
Both physical & sexual abuse	32.7	32.6
Physical abuse only	21.9	27.3
Sexual abuse only	22.4	17.2
No abuse	14.5	15.4
Ever drink beer/wine:		
Both physical & sexual abuse	72.2	72.0
Physical abuse only	65.4	66.4
Sexual abuse only	57.1	66.8
No abuse	55.8	48.8
At least weekly use of beer/wine:		
Both physical & sexual abuse	18.5	12.6
Physical abuse only	19.1	13.1
Sexual abuse only	12.5	12.6
No abuse	12.4	7.8
Ever smoke marijuana:		
Both physical & sexual abuse	57.4	47.6
Physical abuse only	46.1	45.1
Sexual abuse only	35.1	37.8
No abuse	37.3	29.0
At least weekly use of marijuana:		
Both physical & sexual abuse	18.6	10.3
Physical abuse only	18.5	11.7
Sexual abuse only	14.1	10.1
No abuse	10.4	6.9
Feel in poor or fair health:		
Both physical & sexual abuse	33.6	37.8
Physical abuse only	21.8	26.4
Sexual abuse only	19.0	27.2
No abuse	17.5	19.9
Ever attempted sucide:		
Both physical & sexual abuse	41.7	43.0
Physical abuse only	22.2	35.2
Sexual abuse only	30.6	22.7
No abuse	9.5	13.8
Perform below average in school:		
Both physical & sexual abuse	18.5	11.0
Physical abuse only	15.6	13.6
Sexual abuse only	22.4	12,8
No abuse	11.2	10.0

SOURCE: University of Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989.

Thus, the abuse and neglect of children and adolescents deserves preventive intervention, if possible, and intervention with the victim if prevention efforts are not successful.

Parental Alcoholism

The extent of alcohol abuse in Indian communities is of longstanding concern (322). Alcohol use is implicated in many of the major causes of morbidity and mortality for Indians. Recently, a total of 22.5 percent of Indian adolescents surveyed perceived that their parents had a drinking problem (366). This compares to 14 percent of Minnesota adolescents who were asked a similar question (364).

Family Disruption

Family disruption may, of course, be related to parental (or adolescent) alcoholism, poverty, unemployment, physical illnesses, or all of the above. It can result in mental health problems for adolescents (323). Two recent surveys found substantial evidence of family disruption among Indian adolescents.

Compared to Minnesota students, Indian students reported that their biological parents were less likely be living together (64 v. 49 percent), and, not surprisingly, more likely to be divorced or separated (22 v. 34 percent) (table 19). Perhaps most disturbing, 12 percent of Indian adolescents reported that one or both parents were dead, compared to approximately 3 percent of Minnesota students reporting

Table 19-Status of Biological Parents and Living Arrangements of Indian and Minnesota Adolescents

	Biological Parental status	
	Percent total IAHS (n= 2,672)	Minnesota (n= 36,284)
Living together	49.3%	64.00/0
Divorced or separated	12.2	22.0
One/both parents dead	4.7	3.0
Don't know	4.7	2.0
	Students' living arrangements	
	IAHS	Minnesota
Single parent household	39.770	16.8Y0
Two parents/blended	39.8	80.3
Other	20.5	2.9

SOURCE: Indian student data: University of Minnesota, Adolescent Health Program, Indian Adolescent Student Health Survey, unpublished preliminary data, 1989; Minnesota biological parent status data: Minnesota Department of Education, Minnesota Survey Report, unpublished data, 1989; Minnesota student living arrangement data: University of Minnesota, Adolescent Health Program, Minnesota Adolescent Health Survey, unpublished data, 1987.

such a tragedy. As a consequence, Indian adolescents were more than twice as likely to report living in a single-parent household, and almost 10 times as likely to report living without a parent as the Minnesota students.

Although they did not compare Indian students' sources of stress with those of non-Indian students, recent surveys by the NCAIANMHR found that 75 percent of Indian students in either universities, tribal boarding schools, or BIA boarding schools had experienced stress as a result of personal problems of family members, the death of a relative, the health of a close family member, or bad news from home.

School Environment

The world of school constitutes one of the most important environments in an adolescent's life. Perhaps second only to family, it is in the school environment where children learn the socialization skills necessary for life. While the manifest purpose of schools is to educate, they also are the main social arena for youth of all ages. It is in this arena where peer pressure to conform builds. The following section profiles how American Indian adolescents see their school environments.

Students completing the IAHS and Minnesota Adolescent Health Survey were asked a series of questions about how much certain behaviors go on in and around their school (table 20). Alcohol consumption is seen as the most frequently occurring behavior for both Indian and Minnesota students, although rural Minnesota youth saw drinking behavior going on more than either metropolitan Minnesota or Indian students. On the other hand, Indian students were much more likely to indicate that students were using drugs, destroying property, getting into fights, and stealing.[17]

Contrasting Indian students by geographic/tribal afllliation shows that Plains adolescents are more likely to see drinking, fighting, and drugs as more common in their environment (see table 21). Perceptions of somewhat lower alcohol usage by Southeast Indian adolescents is probably reflective of restrictive liquor laws in the area around the reservation. Southeast students differed in drug use, they were much more likely to perceive that students were sniffing substances (glue, paint, liquid paper, etc.) than students elsewhere but less likely to perceive the use of other drugs. Fights are more likely to be perceived by Plains students; this may be reflective of the level of alcohol usage.

The series of studies in three different types of institutions by NCAIANMHR that asked about sources of family-related stress also asked students about school-related stress. As shown in table 22, school pressures were a substantial source of stress for students. School-related problems were more common among the college sample, perhaps because of the greater commitment required and close ties between academic performance and financial issues. Indian adolescents in high school were more likely to identify concerns about families and friends. Comparisons to data reported for their Anglo, middle-class counterparts (84) indicate that many more Indians report having had these kinds of stressful experiences and found them of equal or greater concern.

Other Life Stressors

In addition to the stressors of specific life situations such as physical handicaps, family disruptions, and school, stress can be measured by asking questions about general well-being. While not always more commonly than their non-Indian counterparts, a substantial minority of Indian respondents reported to the IAHS experiencing extreme stresses and strains, dissatisfaction with their personal lives, and feeling tired and worn out (table 23). Indian students were twice as likely as Minnesota students to feel that life was uninteresting and to feel emotionally insecure, with almost one-half of Indian adolescents reporting these feelings.

CONCLUSIONS AND POLICY IMPLICATIONS

As may be apparent from the foregoing discussion, making sense of the current mental health status of American Indian and Alaska Native youth is not unlike trying to sew a large, predesigned quilt from pieces of cloth that vary in size, shape, texture, and color. Clearly, many Indian children and adolescents live under stress. Many experience mental health problems, at rates that usually exceed their mainstream counterparts. Yet anecdotal evidence

[17]Some of the differences between perceptions maybe due to a slightly younger sample of Indianyouths, with nearly 56 percent be@ 14 and under compared to approximately 42 percent for Minnesota youth. Preliminary analyses of Minnesota data suggest that stealing, fighting, and vandalizing behaviors were more likely to occur with students in junior high.

Table 20-Perceptions of School Environments by Indian and Minnesota Students

	Percent responding quite a bit or very much					
	Indian students		Minnesota metro students		Minnesota rural students	
Perceived other students:	Males	Females	Males	Females	Males	Females
Drinking	41 .80/0	50.20/.	45.30/0	48.50/0	55.7%	62.60/o
Using drugs	29.1	34,1	21.7	26.3	12.0	14.5
Sniffing glue, paint, liquid paper, etc.	17.0	19.8	—	—	—	—
Destroying property	23.0	27.8	18.0	18.8	15.2	14.1
Getting into fights	37.7	45,3	24.3	25.5	20.5	20.7
Stealing things	29.3	28.9	22.9	21.9	18.7	18.3

SOURCES: Indian student data: University of Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989; Minnesota metro and rural student data: University of Minnesota, Adolescent Health Program, Minnesota Adolescent Health Survey, unpublished data, 1987.

Table 21—Perceptions of School Environments by Southwest, Plains, and Southeast Indian Students

	Percent responding quite a bit or very much			
Perceived other students:	Total	Southwest	Plains	Southeast
Drinking	46.17.	39.4%	58.6%	30.l%
Using drugs	31.6	34.2	37.9	6.7
Sniffing glue, paint, liquid paper, etc.	18.4	10.8	12.2	56.5
Destroying property	25.4	26.2	27.2	18.1
Getting into fights	41.6	31.1	54.7	32.0
Stealing things	29.6	28.8	31.2	30.2

SOURCE: University of Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989.

Table 22-School Pressures Experienced as Stressful by Indian Students

	Universities	Tribal boarding school	BIA boarding school
Receiving a D or F on a test	Xa	X	X
Personal Pressure to get good grades	X	X	X
Pressure to get an A or B in a course	X	X	X
Fear of failure	X	X	X
Failing to complete assignments	X	X	X
Studying for a test.	X	X	X
Taking a test a class	X	X	X
Difficulty getting motivated for classwork	X	X	X
Completing a term paper.	X		X
Conflict between my goals and those others have for me	X	—	X
Giving a class presentation	X	—	—
Fear of failure to meet family expectations	X	—	—
Deciding what to do after graduation	—	X	X
Not enough recreational activities	—	X	X
Students gossiping and spreading rumors	—	—	X
Being so far from family	—	—	X
Being written up forincidents	—	—	X
Serving restriction	—	—	X

a"x" indicates that 75 percent of the students surveyed responded that they had both experienced the event and found It to be stressful to some degree.

SOURCES: National Center for American Indian and Alaska Native Mental Health Research, college student Life Transitions Project, unpublished preliminary data, 1989; National Center for American Indian and Alaska Native Mental Health Research, Indian Boarding School Project, unpublished preliminary data, 1989.

Table 23--General Well-Being and Stress Among Indian and Minnesota Adolescents

	IAHS[a]		Metro Minnesota		Greater Minnesota	
	Males (n= 1,297)	Females (n= 1,360)	Males (n= 12,155)	Females (n= 11 ,538)	Males (n= 6,308)	Females (n= 6,282)
***Percent responding quite a* bit** or very much to:						
In the last month have you felt:						
Extreme stresses and strains ., ... 18.30/~	23.90/o	27.30/o	28.30/.	22.50/o	23.2%	
Dissatisfied with personal life 18.3	23.8	22.4	25.2	21.9	22.7	
Life was uninteresting 45.4	40.8	19.8	21.4	23.4	22.7	
Not feeling emotionally secure. 43.0	42.9	19.3b	—	19.7b	—	
Tired, worn out 23.3	30.9	24.5	26.4	22.2	23.5	

[a]Indian Adolescent Health Survey.
[b]Males and females combined.

SOURCE: **Indian student** data: University of Minnesota, Adolescent Health Program, Indian Adolescent Health Survey, unpublished preliminary data, 1989; **Minnesota student data: University of Minnesota, Adolescent Health Program, Minnesota Adolescent Health Survey, unpublished data, 1987.**

indicates that many Indian youth thrive psychologically despite these circumstances. Unfortunately, the present knowledge base and means of adding to it lag far behind the desire to appropriately target, deliver, and extend needed treatment and preventive interventions. Almost every report on the mental health status of Indian children and adolescents has reached the same conclusion: systematic procedures for gathering basic epidemiologic and patient-centered service utilization data are nonexistent and the lack thereof cripples thoughtful and effective planning (123,28,29,205,235). This section discusses what could be done to improve the availability of information about Indian adolescents' mental health. Chapter 3, which follows, charts the services available to treat and prevent Indian adolescents' mental health problems.

Several courses of action maybe taken to remedy the lack of information. These include: 1) establishing patient-centered, diagnosis-sensitive data systems that link different service agencies; 2) developing surveillance units within existing service agencies; and 3) conducting a national community-based epidemiologic study of child and adolescent mental health problems.

Patient--Centered Data Systems

The IHS relies on service utilization data to estimate the mental health needs of Indian communities. A number of computerized reporting systems are currently in use by tribes and the IHS but they are not used consistently across tribes or IHS service units. The two most common are the Ambulatory Patient Care (APC) system and the Patient Care Information System (PCIS). The APC system uses a list of 11 categories of mental disorders and three categories of neurological disorders on a checklist form. These classifications encompass the general categories of neuroses, schizophrenia and other psychoses, organic brain syndromes, personality disorders, etc. In addition to not conforming to modern diagnostic terminology, they do not allow for more specific coding of mental health problems, especially those relevant to children and adolescents.

Three of the 12 IHS Area and Program Offices—Alaska, Tucson, and Billings—utilize PCIS. This system employs diagnostic coding from the International Classification of Diseases, 9th rev. (ICD-9) (338). However, the strengths of the PCIS are tempered by inadequate field staff training and continued reliance on program contacts rather than individual patients. Recognizing these limitations, the IHS has formed a task force to revise its patient information systems. Though planning in regard to medical diagnostic codes has proceeded fairly swiftly, numerous questions remain with respect to mental health problems. Considerable debate has arisen over nomenclature and coding procedures. Current estimates by IHS administrators are that an operational system for systematically coding and recording mental health problems in general will be in place in 1994.

An additional problem has arisen with the advent of yet a different IHS patient information system. The Alcohol Treatment and Guidance System (ATGS) was introduced in 1980 and fully adopted 3 years later as a means of monitoring IHS and tribal alcohol treatment and prevention programs. It is designed to provide information about treatment activities, training needs, client progress, and program effectiveness. The ATGS consequently offers a rich and

potentially useful database which, to date, remains virtually unexamined. It is hoped that ATGS will soon be used to generate estimates of "treated" prevalence, of the proportions and types of services delivered to youth, and of their efficacy. These data, however, are not linked with either medical or mental health records, thereby frustrating attempts to discover possible relationships among these different illnesses and systems of treatment. This latter point is particularly important in light of May's (205) demonstration that significant quantities of IHS medical and mental health services are consumed by individuals suffering from alcoholism.

Social service, special education, law enforcement, and child welfare data, which may be compiled by the BIA, local tribes, and urban Indian health care programs, are rarely computerized. For example, the BIA has only recently initiated computerization of data pertaining to the use of its social services. Psychoeducational evaluations, often conducted routinely by psychologists and social workers in BIA schools, are seldom accessible in any systematic fashion. Urban Indian health care programs do not employ a common means of recording and reporting mental health problems.

One of the first challenges is to upgrade the IHS patient information systems with respect to diagnostic sophistication, relevance to the mental health problems of children and adolescents, case-orientation, and linkage across different systems of care. The information systems for other agencies are far less advanced and will require much greater effort to move in the same direction.

Surveillance Units

The development ot these information capabilities ought to be accompanied by the establishment of surveillance units within each agency. Such units should be charged with the analysis of the resulting data to inform program planning. Products could include "treated" prevalence and incidence rates of select mental health problems among Indian adolescents, patterns of risk among adolescents in treatment, descriptions of the types and quantities of services used, identification of "high" users of services, and evaluations of treatment effectiveness. None of this information is currently available.

Epidemiologic Data

The mental health problems of Indian adolescents can only be partially understood from service utilization data. Numerous biases affect who seeks, obtains, or is identified as needing treatment. Such factors include cultural acceptability, accessibility, staff skills and training, as well as program history. Consequently, the insights generated by program information systems must be supplemented by community-based epidemiologic studies. This requirement is widely acknowledged among health professionals and service planners. A number of recent examples include the National Institute of Mental Health Epidemiologic Catchment Area studies (261) and the National Center for Health Statistics' biannual household survey (146). Yet no comparable epidemiologic studies have been undertaken with Indian adolescents nor have Indians ever been included to a meaningful degree in any national survey. Indeed, it is not surprising, then, that a recent draft report by the IHS Office of Mental Health Programs--based on a survey of providers, planners, and investigators--listed a large-scale psychiatric epidemiologic study of children and adolescents as among the highest priorities for future Indian mental health research (355). Another series of recommendations in regard to IHS alcohol research initiatives recently reached the same conclusion (352).

Current information and research technologies are capable of meeting the challenges of obtaining better information about the mental health of Indian adolescents. The real barriers to future advances are the lack of available resources and organizational as well as philosophical schisms that preclude meaningful collaboration across the agencies charged with delivering needed mental health care to American Indian and Alaska Native adolescents.