Victimization and PTSD in a Danish National Youth Probability Sample

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ABSTRACT

Objective: To investigate the prevalence of traumatic events and life events in relation to posttraumatic stress disorder (PTSD). Method: In a Danish national representative sample of 390 eighth-grade students with a mean age of 14.5 years, 20 prevalent potential traumatizing and distressing events were described, along with the psychological impact of these events. Results: Eighty-seven percent of the females and 78% of the males were exposed to at least one event. The most common events were the death of a family member, threat of violence, or serious accidents. The most distressing subjective events were rape, suicide attempts, death in the family, serious illness, and childhood abuse. Gender, parents' education, and living with a single parent were associated with specific events. The estimated lifetime prevalence of PSTD was 9.0%, whereas another 14.1% reached a subclinical level of PTSD. After exposure, females suffered from PTSD twice as often as males. Being exposed to multiple traumatic events was associated with an increase in PTSD. Conclusion: The findings in this study suggest substantial mental health problems in adolescents who are associated with various types of victimization.

Key Words:

adolescents

posttraumatic stress disorder

traumatic events

life events

national sample.

Epidemiological studies of trauma and posttraumatic stress disorder (PTSD) that build on national probability samples are very rare. Kessler et al. (1995) studied 5,877 U.S. citizens aged 15 to 54 years and found that 61% of the men and 51% of the women had been exposed to at least one traumatic event. On the basis of diagnostic interviews, the lifetime prevalence of PTSD was estimated at 7.8%. Women were more likely to receive a diagnosis of PTSD than men, and in the youngest age group (15–24 years) almost four times as many women as men received a diagnosis of PTSD. This overrepresentation could warrant special attention to the trauma history of women regarding traumatic events and PTSD in adolescence. But apart from the study conducted by Kessler et al., in which adolescents were lumped together with young adults, a national representative study in the field of trauma and PTSD for young adolescents does not seem to exist.

In a study of 384 eighteen-year-old U.S. adolescents participating in a longitudinal study, Giaconia et al. (1995) , examining a large sample of stressful events, found that more than two fifths of the participants had experienced at least one traumatic event (as defined by *DSM-III-R*; American Psychiatric Association, 1987) by the age of 18. Fifteen percent of the affected youths or 6% of the total sample developed PTSD. Youths who experienced trauma demonstrated behavioral and emotional problems, interpersonal problems, academic failure, suicidal behavior, and physical health problems by the age of 18, regardless of whether or not they developed PTSD. Eighty percent of the adolescents with PTSD met criteria for at least one additional disorder, and 40% had two or more lifetime disorders. Giaconia et al. stressed that those who work with adolescents should not underestimate the potential of a wide range of traumatic events to provoke PTSD symptoms and associated problems later in the adolescents' lives, including events that do not involve direct violence or physical harm. Giaconia et al. also emphasized the importance of investigating more than the type of trauma that may influence the likelihood of developing PTSD; for example, other factors such as youths' characteristics and their family environments should be considered. The results of the study concern youths at the age of 18, but the authors point out that many youths experienced these traumas or developed PTSD as early as age 14.

In the past decade, there has been growing concern about the effect of violence on adolescents. The review by Foy and Goguen (1998) gives a comprehensive picture of U.S. efforts to estimate the prevalence and effects of violence particularly among inner-city African-American youths. What is remarkable is that a large number of these children and adolescents experience many kinds of serious violence (Boney-McCoy and Finkelhor, 1995 ; Freeman et al., 1993). Living in certain areas of certain cities has even been compared to living in a war zone; some studies have found that 80% of the city children and adolescents have been victims of or witnesses to violence (Lorion and Saltzman, 1993). Violent victimization in adolescents is associated with depression, low self-esteem, poor school performance, and PTSD symptoms (McLain et al., 1998). The experience of violence also is associated with intrusive thoughts and anxiety for the victim (Kliewer et al., 1998). McLain et al. (1998) suggested that demographic factors such as gender and age can be moderators of the impact of victimization. Other moderators could be the education of the parents and living with both parents.

Available information about traumatic events and life events for Danish adolescents as well as for other age groups is very sparse. According to official mental health statistics, every year 20% of Danish children aged 5 to 14 years seek treatment at an emergency department (Danmarks Statistik, 1999). A criminological study of 1,270 Danish eighth-grade students from three different regions of the country (Balvig, 1999) found that 44% had experienced a theft, 16% had been beaten, and 36% had been threatened with violence within a period of 12 months. Twenty-six

percent of the students in the Balvig study did not live with both parents together. A Swedish study of a national sample of 17-year-old adolescents (Edgardh and Ormstad, 2000) found that 2.3% of the males and 7.1% of the females experienced sexual abuse, and 1.2% and 3.1%, respectively, experienced sexual abuse involving intercourse. Highly related to sexual abuse was the number of suicide attempts (and self-mutilating acts), which happened to 5.9% of the males and 11.4% of the females.

Hill and Jones (1997) examined children's and parents' perceptions of children's exposure to community violence and found a remarkable discrepancy between the two groups. The parents' lack of awareness may increase the risk of inadequate guidance of the young in situations in which they might need the most guidance. The same could be said about professional guidance of children and adolescents. To meet the requirement of optimal professional guidance, it is important to examine the prevalence of different types of victimization and distressing living conditions. The current study was designed to provide epidemiological information about exposure to traumatic events and life events together with PTSD in a national probability study. The purpose was threefold: (1) to examine the relationship among the experiences of trauma, life events, sociodemographic variables, and PTSD; (2) to estimate the lifetime prevalence of traumatic events, life events, and PTSD, overall and by gender; and (3) to assess the subjective distress of a number of traumatic events and life events.

METHOD

Subjects

The data in this study were collected from a questionnaire survey with a national representative probability sample of 390 youngsters aged 13 to 15. The sample was geographically stratified by 10 regions, with sample allocation proportionate to the Danish population distribution. Thirty schools that taught eighth-grade students were approached. Twenty-two schools accepted and participated (73.3% coverage). Each class consisted of 12 to 25 pupils (average 17.7), and an average of 0.9 pupils (95% response rate) were missing on the day of the study. All pupils present completed the questionnaires.

The gender distribution was 50% females and 50% males. Seventy-four percent of the pupils lived with both parents, 25% lived with one parent, and 1% had other arrangements. The difference between the parents' education was not significant (fathers versus mothers, respectively: primary school 28% versus 25%, high school 18% versus 25%, “college” [3–4 years of professional education after high school] 34% versus 35%, and “university” [5–8 years of professional education after high school] 21% versus 15%). There were no significant differences in the participation from the various regions of the country.

Procedures

The study was introduced through (1) a letter to the headmasters explaining the selection procedure in case there was more than one eighth-grade class in the school (the primacy of the initials of the “head teacher” [the teacher responsible for that particular class] decided which class was chosen); (2) a letter to the “head teacher” describing introduction, monitoring, support, and confidentiality procedures (i.e., the sealing of the return envelope in front of the pupils); and (3) a letter to each

pupil explaining the purpose, the confidentiality, the option of not participating, and the collecting procedures.

In all five Nordic countries, psychologists follow a common set of Nordic ethical guidelines. Only studies within the hospital sector have to be approved by a regional Helsinki committee; ethical questions in studies in all other areas are the sole responsibility of the psychologist in charge of the research. In the Ethical Code, section VIII, §9 reads: "If a participant of a study is minor or in custody, informed consent has to be achieved with proper regard to independence of the concerned subjects" (author's translation).

On the basis of my experience as a licensed clinician and a former educational psychologist, I know that many from this age group (14–15 years) have had "adult," adverse experiences. So the evaluation of the degree of independence of this group was that they were mature enough to understand the purpose and the conditions of the study. The response rate seems to confirm that.

Measures

The first part of the questionnaire contained questions about gender, age, parents' education, and living arrangements (living with one parent, two parents, or others such as grandparents or within an institution). Parents' education was chosen as a crude measure for the socioeconomic situation. More detailed demographic information was not asked because other studies (e.g., Balvig, 1999) have shown that adolescents' knowledge of their parents' income and occupational status is not reliable.

In the last part of the questionnaire, the students were asked 20 questions about traumatic events and life events (cf. Table 1) they had experienced. Each question offered the possibility for students to answer according to direct exposure or indirect exposure (i.e., witnessing an event or having a person close to them experience an event). The events were selected from literature and clinical experience, covering possible life-threatening experiences and distressing family conditions such as neglect, abuse, and absence of a parent. Sexual abuse was defined as sexual exploitation in a close relationship by an older relative or a another close person, but the study did not distinguish between intra- and extrafamily perpetrators. Rape was defined as forced intercourse or sex. Abortion and pregnancy were lumped together in the questionnaire, because of the very low occurrence of babies born and because of a desire to cover the situation in which a female adolescent is pregnant and has not yet decided to have an abortion. In Denmark, the number of babies born to mothers aged 15 years or younger is extremely low (16 in 1999). We expect practically all pregnancy cases to be represented by abortions, but we did not want to signal that a pregnancy could not be a happy situation. There were two questions in the study about parenthood: one about divorce and the other about the absence of a parent. These questions were meant to identify situations in which divorce is not formal or in which one parent is absent from the household because of work, a family crisis, or other obligations. No psychometric data are yet available on the event measure. However, some comparable data (referred to in the introduction and in the discussion section) are available, and they support the external validity of the items.

TABLE 1 -- Trauma and Life Events According to Exposure and Gender

Event	Direct Exposure	Indirect Exposure

	% Females (*n* = 192)	% Males (*n* = 195)	% All[a] (*n* = 390)	% Females (*n* = 192)	% Males (*n* = 195)	% All (*n* = 390)
1. Traffic accident	18.8	13.3	15.9	36.5	36.4	36.4
2. Other serious accidents	11.5	11.3	11.5	14.1	23.6	18.7*
3. Physical assault	4.2	5.1	4.6	13.0	14.4	13.6
4. Rape	2.6	1.0	1.8	5.7	4.1	4.9
5. Witnessed other people injured or killed	5.7	11.8	9.0*	8.9	14.4	11.5
6. Came close to being injured or killed	6.3	14.9	10.5*	6.8	10.3	8.5
7. Threatened to be beaten	21.9	31.8	26.9*	18.2	22.6	20.3
8. Near-drowning	15.1	22.6	18.7	9.4	10.3	9.7
9. Attempted suicide	11.5	1.0	6.2‡	13.5	12.8	13.1
10. Robbery/theft	6.8	16.4	11.8*	18.2	17.9	17.9
11. Pregnancy/abortion	3.6	0.0	1.8	22.9	16.4	19.5
12. Serious illness	13.0	12.3	12.6	37.0	33.8	35.1
13. Death of someone close	58.9	44.6	51.8*	39.6	29.2	34.1*
14. Divorce	21.4	16.4	19.0	28.1	23.6	25.6
15. Sexual abuse	2.6	0.5	1.5	3.6	4.1	3.8
16. Physical abuse	4.2	3.1	3.6	7.8	7.7	7.7
17. Severe childhood neglect	3.6	2.6	3.1	5.2	6.2	5.6
18. Humiliation or persecution by others (mobbing)	26.6	18.5	22.6	21.4	17.4	19.2
19. Absence of a parent	12.0	3.1	7.4†	13.5	6.7	10.0*
20. Other traumas	7.3	4.1	5.6	6.3	1.0	3.6*

[a] Three did not state their gender.
* $p < .05$
** $p < .01$
‡ $p < .0005$.

*** $p < .005$
†$p < .001$;

The Harvard Trauma Questionnaire-Part IV (HTQ) (Mollica et al., 1992) was used to estimate the occurrence of PTSD at the time of the event. When filling in the HTQ, pupils were asked to pick the event most distressing to them and to keep that in mind when answering. The HTQ consists of 30 items, of which 16 correspond to the PTSD symptoms in the *DSM-III-R*. The items are scored on a 4-point Likert scale. The HTQ-Part IV has been used extensively in Denmark and permits an assessment of whether or not a person suffers from PTSD. It is also a measure of the intensity of the three core symptom groups (intrusion, avoidance, and arousal) of PTSD. A subclinical level of PTSD is gained if the respondent meets two of three criteria and misses the last criterion by only one symptom. The latter does not apply to the Intrusion subscale, which must be reached. The subscales are scored separately. The original Mollica et al. article (1992) found good reliability and validity for the scale, but there exist no HTQ reliability and validity data for adolescents or Danish subjects. The internal consistency of the scale in this study was good, as the Cronbach α was .90 for the PTSD scale and .74, .79, and .78 for the Intrusion, Avoidance, and Arousal subscales, respectively. The interitem coefficients for the subscales were, correspondingly, .41, .32, and .41; these values indicate good discriminatory power.

RESULTS

The most common event recorded (Table 1) was the death of a family member, followed by a threat of being beaten, humiliation or persecution by others, near-drowning, and traffic accident. Least prevalent were sexual abuse, rape, pregnancy/abortion, severe childhood neglect, and physical abuse. The prevalence of the indirect exposure to traumatic events was generally higher than the direct exposure. The most noticeable exception was the death of a family member, which seems to be more of a private family matter than a public matter.

Table 1 also reveals significant gender differences. Compared with females, males had more instances of witnessing an injury, coming close to injury themselves, the threat of being beaten, and being the victim of theft. Females more often attempted suicide, lost a family member, and had an absent parent. With regard to indirect exposure, males had witnessed serious accidents more often than females, whereas females, more than males, knew people close to them who had lost a family member or who had an absent parent.

The number of serious, potentially life-threatening and distressing events was considerable. The average number of direct events per pupil was 2.5 (percentage who experienced one event = 17%, two events = 23%, three events = 20%, four events = 14%, five events or more = 14%), and the average number of indirect events per pupil was 3.2 (percentage who witnessed one event = 23%, two events = 17%, three events = 13%, four events = 10%, five events or more = 26%).

In Table 2 some related events are grouped together and are positioned according to prevalence. The overlap between grouped events was modest. The events were ranked according to the frequency with which they were chosen by the pupils as the basis for the HTQ. Attempted suicide

was relatively the most chosen event, followed by death of a family member, serious illness, and childhood neglect. Next in order of rank was physical assault, then divorce, threats of beatings, and serious accidents. Relatively least chosen were life-threatening situations, near-drowning, rape, theft, and abortion/pregnancy.

TABLE 2 -- Number of Events (Grouped) According to Frequency, Choice Rank, and Relative Risks of Specific Traumas Being the Basis for PTSD

No. in Table 1	Event	Frequency (%)	Choice of Most Distressful Event (%)	Rank According to Frequency of Choice	Overlap (%)	Relative Risk			
						Females		Males	
						PTSD	Subclinical PSTD	PTSD	Subclinical PTSD
13	Death	51.8	27.2	2		14.2	28.4	5.7	14.1
7,18	Threats of physical assault	41.0	13.8	7	21	22.4	38.6	9.8	20.0
19,14	Divorce/parent absence	21.5	7.3	6	23	16.0	25.8	3.0	23.1
12	Illness	12.6	5.6	3		28.0	45.5	12.5	21.1
1,2	Accident	23.6	7.6	8	16	11.5	28.6	10.3	26.7
9	Attempted suicide	6.2	4.0	1		22.7	27.3	50.0	26.7
5,6	Life-threatening situation	17.2	5.3	9	13	17.4	33.3	4.7	17.6
8	Near-drowning	18.7	3.3	11		17.2	38.9	9.1	32.3
10	Robbery/theft	11.8	1.7	13		0.0	54.5	6.3	29.6
3,4	Physical assault	5.6	2.0	5	14	12.5	20.0	10.0	28.6
16	Physical abuse[a]	3.6	0.3	14		37.5	50.0	16.7	40.0
17	Severe childhood neglect[a]	3.1	1.3	4		28.6	75.0	0	50.0
11	Abortion/pregnancy[a]	2.6	0	15		28.6	33.3		
4	Rape[a]	1.8	0.3	12		20.0	0	50.0	100.0
15	Sexual abuse[a]	1.5	0.3	10		60.0	50.0	100.0[a]	0

Note: PTSD = posttraumatic stress disorder.

[a] Based on small numbers.

The parents' education was negatively associated with suicide attempts ($\chi^2_3 = 21.5$; $p < .0005$). Living in a single-parent household was associated with many events (apart from divorce): more suicide attempts; more childhood neglect, physical and sexual abuse; more threats of beating; more serious accidents; more near-drowning events; and a higher total number of events. Of the 289 students who reported one traumatic event *and* who gave full information on the HTQ, 11 (5.6%) males and 24 females (12.3%) fulfilled the various criteria for PTSD at the time of the event, corresponding to 9% of the total group. Twenty-two males (11.2%) and 34 females (17.4%) constituted a subclinical group missing the PTSD diagnosis by one symptom or one subcriterion (of the C and D group, according to the *DSM-IV*). The difference between the two sexes in PTSD rates was significant ($\chi^2_3 = 23.6$; $p < .0005$).

The probability of a trauma being the basis for the assessment of PTSD and subclinical PTSD varied markedly across trauma types (Table 2) . There was a modest consistency between subjective choices of the most upsetting trauma and the occurrence of PTSD and subclinical PTSD. Sexual abuse, rape, childhood neglect, physical abuse, and attempted suicide had the highest associations with PTSD and subclinical PTSD, followed by abortion, serious illness, near-drowning, robbery/theft, and threats of beatings. The lowest risk of PTSD and subclinical PTSD followed accidents, life-threatening situations, physical assault, divorce, and death in the family. The inclusion of subclinical PTSD strongly underlined the adverse effects of the listed events. For almost all the events other than rape and theft, a higher proportion of females than males met criteria for PTSD and subclinical PTSD. As the number of males who were raped or had attempted suicide was small, these risk data should be interpreted with caution.

The analysis of variance between PTSD and its subscales as dependent variables, and demographics and events as independent factors, appears in Table 3 . The female sex was positively associated with PTSD and all three subscales. Age was negatively associated with hypervigilance. Father's education was not related to PTSD symptoms, but mother's education was negatively associated with hypervigilance. Living with a single parent was positively associated with the occurrence of PTSD and the Avoidance subscale score. The number of events, the number of witnessed events, and the presence of recent events were strongly associated with PTSD.

TABLE 3 -- Analysis of Variance Between Trauma and Life Events and PTSD Variable

	PTSD	***df***	**Intrusion**	***df***	**Avoidance**	***df***	**Hypervigilance**	***df***
Gender	22.2‡	1,287	27.6‡	1,323	12.4†	1,303	21.7‡	1,327
Age	2.3	2,287	1.6	2,323	1.7	2,303	5.6*	2,327
Education								
Father	1.6	3,250	0.5	3,278	1.1	3,264	1.8	3,282
Mother	0.8	3,261	1.4	3,291	1.8	3,274	3.1*	3,294
Single parent	4.2*	1,286	0.9	1,322	3.9*	1,302	2.2	3,326

TABLE 3 -- Analysis of Variance Between Trauma and Life Events and PTSD Variable

	PTSD	*df*	Intrusion	*df*	Avoidance	*df*	Hypervigilance	*df*
No. of events	7.6‡	4,287	7.5	4,323	3.8*	4,303	8.0	4,327
Witnessing	5.5‡	4,287	5.2‡	4,323	2.4	4,303	3.5*	4,327
Recent event (<1 yr)	2.1	8,279	1.0	8,315	0.9	8,295	0.8	8,319

Note: One-way analysis of variance. *F* ratio values. Bonferroni α = .003. PTSD = posttraumatic stress disorder.

‡$p < .0005$.
† $p < .001$
*** $p < .005$
* $p < .05$
** $p < .01$

DISCUSSION

While there has been widespread interest in studying victims of violence among adolescents, there seems to a remarkable lack of similar studies that include other types of victimization. According to Giaconia et al. (1995) , there have been few community studies assessing the prevalence of a full range of trauma identified in the *DSM-III-R* or the corresponding rates of PTSD associated with these diverse types of trauma. This study revealed a larger number of traumatic and life events, including the family sphere, experienced by adolescents. Males seem to be victimized in outside activities more often than females, while females seem to be victimized more often in family-related events and by self-inflicted events (suicide attempts). With regard to the divorce item, there was no significant difference between the sexes, but females reported the absence of a parent almost four times more than males did. Fathers might be more reluctant to leave their families if there is a son present. A study of the custody counseling of the regional authorities (Elklit and Sylvest, 1994) showed that parents seemed much more concerned and had more inquiries and more conflicts when there was a son involved as opposed to a daughter. Another explanation could, of course, be that females were more attentive to absence.

Where comparable research or statistics exist, the incidence of certain events in other studies seems in line with this study. There is a remarkably good match between other sources mentioned in the introduction and the present study regarding health, criminological, and social data.

In the Detroit Area Survey (Breslau et al., 1998), lifetime exposure to one or more traumatic events defined according to *DSM-IV* (American Psychiatric Association, 1994) was 90%. The trauma most often reported as the precipitating event among adults with PTSD was sudden,

unexpected death of a loved one, an event experienced by 60% of the sample and triggering PTSD in 14%. This suggests that the relative importance of death as a cause of PTSD might be particularly prominent after young adulthood. The data from the present study found that even in adolescence, the death of a loved one is a common experience and one that is often chosen, but it is not associated with PTSD. One possible explanation for this difference could be that in the present study the death encountered in many cases was that of a grandparent, whereas in the Breslau et al. study it was more likely the death of a parent.

Finkelhor and Dziuba-Leatherman (1994) found that U.S. children aged 12 to 19 years are two to three times more likely than adults to be victims of violent crime. The highest risk of PTSD in the Breslau et al. study was associated with violent assault (21%), which unfortunately comprises seven very different types of events (from combat to rape). The present study found that physical assault ranked fifth as the chosen event, and the association with PTSD was modest and somewhat less than in the case of threats of violence. In this study females' fear of assault seems to have even more adverse impact than actual assault. The less pronounced effect of violent assault in this study compared with the Breslau et al. study and the studies mentioned in the introduction could be due to cultural differences between "war zone–like areas" in U.S. inner cities and a more peaceful Scandinavian country, where—if homicide is taken as the ultimate expression of violence in a society—the homicide rate is one seventh of the U.S. rate (Bureau of Justice Statistics, 2001; Danmarks Statistik, 1999). The Breslau et al. study and the Kessler et al. (1995) study also found that women had a much higher risk of developing PTSD when compared with men, when sociodemographic factors and type of trauma were controlled. This overrepresentation is similar to that found in the present study and in many other studies. Adolescent exposure to a single stressful event such as a hurricane (Shannon et al., 1994) or an industrial fire (March et al., 1997) was associated with an increase in somatic and psychological symptoms and PTSD (PTSD diagnosis rates in the two studies were 5% and 12%, respectively). In future studies of adolescents' single-event trauma, it would be interesting to integrate and supplement the study of different types of trauma with the study of life events to get an idea of the relative influence of this type of trauma.

Some events (divorce, death in the family, threats to life, and theft) were not significantly associated with PTSD symptoms in this study. It is very likely, though, they might be associated with other adverse effects. Violent assault was associated only with the Intrusion subscale, but not with a full PTSD syndrome. Sexual abuse, rape, childhood neglect, physical abuse, attempted suicide, threat of assault, serious personal illness, and the accumulation of trauma and life events were strongly and positively associated with PTSD, whereas near-drowning events, traffic accidents, witnessing traumatic events, and recent events were similarly—but more weakly—associated with PTSD. The negative effects of sexual abuse and rape correspond to findings in other studies (Cuffe et al., 1998 ; Famularo et al., 1996 ; McLeer et al., 1998). The PTSD diagnosis appears in relation to the *DSM-IV* A1 stressor criterion and not in relation to the life events. These findings underline that the A1 stressor criterion seems to function reasonably in a study of a broad range of trauma and life events and that the distinction between traumatic events and life events generally is sensible, but in the individual case there should be no automatic equation between a certain event and the expected outcome for the clinician or other health and educational personnel.

Some events are more likely to produce negative effects other than PTSD. The knowledge we have in various areas is unevenly distributed and concentrated on divorce, sexual abuse, and childhood neglect. In an Icelandic study of young adults whose parents divorced when they were children, Jónsson et al. (2000) found that the main effects seemed to be negative emotional stability and a

less stable relationship pattern. In their study of children and adolescents ranging in age from 10 to 16 years, Boney-McCoy and Finkelhor (1995) found that a third of the group had experienced violence and that sexual assaults were associated with increase in symptoms. Adolescents with a history of prior sexual abuse may have a number of difficulties in setting boundaries sexually and in social relations (Small and Kerns, 1993). Johnson et al. (2000) found that emotional, physical, and supervisory neglect in childhood might lead to personality disorders. In a review of 12 studies (Ornhuff, 2000), there is strong support for a relationship between childhood maltreatment and a malevolent object world, that is an intrapsychic, representational structure characterized by overwhelming threat, danger, fear, rage, and distrust resulting from early and habitual exposure to parental assault and deprivation. The potential seriousness of trauma in areas other than PTSD underscores the need for examining their effects more systematically during the critical developmental period of adolescence.

Werner and Smith (1998) found in a longitudinal study of risk and resilience factors that the level of education was supportive in a gender-specific way; mothers' education had a protective effect for males, and fathers' education had the same effect for females. This hypothesis was tested in this study but was not supported by the data.

Some stressful events (traffic accidents, near-drowning events, and serious illnesses) that happen to adolescents appear to deserve more attention from a traumatic stress point of view, whereas the study of other events, such as violent assault, might benefit from supplementary perspectives studying the meaning of the event. In line with the Pelcovitz et al. (2000) study, an increase in exposure to stressful events was associated with an increase in PTSD.

Limitations

This study has several limitations. It relies on students' self-reports; there are concerns about students' honesty, their ability to be factual, and their willingness to remember painful events. On the other hand, there might be less of a recall bias, as some events will be more recent than in a similar study of an adult population. There also is the anonymity of the classroom that for some could make reporting easier. The construction of the questionnaire placed the list of events almost at the end to prevent animosity and a biased set toward the trauma issue, even if this was openly announced and emphasized in the introduction. The event questionnaire has not been validated and is constructed to reflect a special national and social context, which makes cross-cultural comparisons more difficult.

In a validation study of a trauma event questionnaire, Kubany et al. (2000) found very good concordance between interview data and questionnaire data when asking about trauma events. Because of the design of the study, there was no way of reporting whether a certain event had occurred more than once.

Clinical Implications

The studies above, as well as this study, found that adolescence is a risk period during which there is considerable exposure to stressful events. Most studies of adolescents' relation to trauma have focused on violence, but there seems to be ample evidence that events in addition to violence are important determinants of traumatization; when focusing solely on violent acts and threats of violence, one might miss a more comprehensive understanding of the totality of distressing events

that might influence development in adolescence. Health and educational personnel may need to integrate a standard procedure for obtaining information about stressful events from adolescents as a part of the assessment and planning of interventions. Ignoring this information may lead to less effective intervention programs for this age group.

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