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Victimization and PTSD in a Faroese youth total-population sample

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The prevalence of twenty traumatic events and negative life events in relation to posttraumatic stress disorder (PTSD) was studied in a Faroese total-population sample of 687 eighth-grade students with a mean age of 14.2 years. Ninety-four percent of the females and 89% of the males were directly exposed to or had witnessed at least one traumatic event or a negative life event. The odds ratios for PTSD after direct and indirect exposure to specific events are described. The lifetime prevalence of PTSD was 20%, whereas another 14% reached a subclinical level of PTSD. After exposure, females had PTSD more than twice as often as males. Being exposed to multiple traumatic events, living with a single parent, and having experienced a traumatic event or a negative life event within the last year were all associated with PTSD and its subscales.

Key words: Adolescents, posttraumatic stress disorder, traumatic events, negative life events, total population sample.

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INTRODUCTION

Recently, there has been a growing interest in the impact of traumatic events and negative life events on children and adolescents. Accordingly, the number of studies on the subject of posttraumatic stress disorder (PTSD) in children and adolescents is growing, providing evidence that this group is vulnerable to the development of PTSD after the experience of traumatic events (Caffo, Forresi & Lievers, 2005). However, most research is based on convenience samples and tends to focus on specific, potentially traumatic events such as violence (i.e. Boney-McCoy & Finkelhor, 1995), sexual abuse (i.e. Edgardh & Ormstad, 2000), war (i.e. Khamis, 2005), natural disasters (i.e. Evans & Oehler-Stinnett, 2006), and serious accidents (Broberg, Dyregrov & Lilled, 2005). More commonly occurring and apparently less severe events have been investigated to a much lesser degree despite the possibility that they also might be associated with clinical levels of posttraumatic stress. The few studies that have included a wider range of traumatic events carried out in this area show that many adolescents experience one or more traumatizing events that can have serious consequences later on.

Costello, Erkanli, Fairbank and Angold (2002) explored the prevalence of 30 potentially traumatic events together with vulnerability to PTSD through interviews of 1,420 children and adolescents (9–13 years) in North Carolina. They found that by the age of 16 one-fourth had experienced at least one high magnitude event (DSM-III-R extreme stressors), and that 6% had experienced a high magnitude event within 3 months prior to the study. Another third had experienced a low magnitude event within 3 months prior to the study.

In their national probability study Kessler, Sonnega, Bromet and Hughes (1995) studied 5,877 American citizens (15–54 years) and found 7.8% lifetime prevalence for the development of PTSD. Moreover, they found an overrepresentation of women, who, for the youngest age group (15–24 years), were four times more likely to receive a diagnosis of PTSD compared to men. In a German representative community study of 3,021 subjects aged 14–24 years Perkonigg, Kessler, Storz and Wittchen (2000) found a lifetime PTSD prevalence of 1% for males and 2.2% for females. However, neither the Kessler *et al.* (1995) study nor the Perkonigg *et al.* (2000) study differentiated between adolescents and young adults. As part of a longitudinal study of 384 18-year-old US adolescents Giaconia, Reinherz, Silverman and Pakiz (1995) found that 6.3% of the total sample met the criteria for PTSD, and that 43% had experienced at least one traumatic event. In a community-based study of 427 English adolescents (11–16 years) Joseph, Mynard and Mayall (2000) found that 84% had experienced at least one negative life event.

In a Danish national probability study of eighth graders (mean age 14.5 years), Elklit (2002) found a 9% prevalence rate of PTSD, whereas another 14.1% reached a subclinical level of PTSD. Seventy-eight percent of the males and 87% of the females had been exposed to at least one traumatic event or one negative life event, and after exposure females suffered from PTSD twice as often as males. Similarly, in a Lithuanian national probability sample of 183 adolescents (mean age 15.1 years) Domainskaite-Gota and Elklit (submitted) found an estimated 6.1% lifetime prevalence of PTSD, with an additional 12.2% reaching a subclinical level of PTSD. Eighty-one percent of the males and 80% of the females reported having been exposed to at least one traumatic event. Moreover, a study based on a national representative sample of 206 Icelandic adolescents (mean age 14.5 years), found a 16% lifetime prevalence of PTSD and additional 12% reaching a subclinical level (Bödvarsdóttir & Elklit, 2007). The available studies clearly demonstrate that

many adolescents experience one or more potentially traumatic events and that these experiences can have serious consequences.

Giaconia *et al.* (1995) emphasize the importance of looking at different factors that might play a role in the development of PTSD such as sample characteristics and family environment. McLain, Morland, Shapiro and Foy (1998) suggested that demographic factors such as gender and age could be moderators of the impact of victimization; and other factors such as the parents' education and living with both parents could also have moderating functions. Elklit (2002) found that factors associated with PTSD among adolescents were being female, living in a single parent household, having been exposed to multiple traumatic events, and having witnessed a large number of events. This is much in line with other studies based on either probability or convenience adolescence samples (Bödvarsdóttir & Elklit, 2007; Rhiger, Elklit & Lasgaard, 2008).

Adolescents who have experienced traumatic events have been shown to have additional problems, for instance emotional, behavioral, and interpersonal problems along with academic failure, suicidal behavior, and physical health problems (Caffo *et al.*, 2005; Giaconia *et al.*, 1995). In their review, Caffo and colleagues (2005) found, however, a great variance as to the prevalence of PTSD and number of events experienced, which might be due to cultural and methodological differences. Joseph and colleagues (2000) stress the importance of examining less severe and more common events as a supplement to highly traumatizing and unusual events in studies of PTSD. Hence, there is a need for more research in a broad range of traumas measuring the same trauma and negative life events in adolescents in various cultures. Furthermore, epidemiological studies of trauma and PTSD that build on national probability samples are very rare, and to our knowledge studies of adolescents based on a total population until now are non-existent.

The current study was designed to provide epidemiological information about exposure to traumatic events and negative life events, and the prevalence of PTSD among Faroese eighth graders. The study replicates previous European studies of same age groups (Bödvarsdóttir & Elklit, 2007; Domainskaite-Gota & Elklit, submitted; Elklit, 2002; Rhiger, Elklit & Lasgaard, 2008) with regard to examining potential cultural differences.

The aim was (1) to estimate the lifetime prevalence of traumatic events, negative life events, and PTSD, overall and according to gender; (2) to examine the relationship among the experiences of trauma, negative life events, sociodemographic variables, and PTSD; and (3) to assess the subjective distress of various traumatic events and negative life events. It is expected that, like in other countries, Faroese adolescents have been exposed to a considerable amount of potentially traumatizing and negative life events. Furthermore, it is expected to find a prevalence of PTSD comparable to what was found in the other countries. Finally it is expected to find gender, sociodemographic factors, and degree of exposure to be associated with degree of PTSD.

The Faroe Islands is a small and geographic isolated country with less than 50,000 inhabitants (http://www.hagstova.fo). The country consists of 18 small islands situated in the Atlantic Ocean north of Scotland, south of Iceland and west of Norway. The Faroe Islands is an autonomous region with its own parliament and government within the Danish Kingdom, and is an ethnically homogenous country (Helve, 2003). The level of public services in, for example, health and social security and education is high (Gaini, 2005a), and according to Gaini the Faroese youths are very similar to other Nordic youths with regard to their culture, values and communication (Gaini, 2005b). The gross national product (GNP) in 2002 in the Faroe Islands was however, 15% lower than the average GNP in the other Nordic countries, but unemployment is lower at only 1.3% (pr. 01.10.2007, http://www.hagstova.fo). The Faroese society has gone through big changes since the beginning of the 1990s when there was an economic crisis which led to emigration of approximately 10% of the population; the relatively largest emigration in peace-time Europe. Much attention has been paid to the economic, socio-economic, and political aspects of these changes (Hovgaard & Gaini, 2003), but Faroese research at a scientific level, and youth research in particular, is a new issue (Gaini, 2005a) and almost non-existent. However, there is a growing tendency toward focusing on youth and adolescent issues, both in the media and at a scientific level (Helve, 2003).

The official statistics about crime rates and contact with the emergency ward are either not differentiated according to age or the age groups are as broad as 15–44 years. Statistics on causes of death in 2005 carried out on 10–19 year olds showed four deaths (http://www.hagstova.fo), one of which committed suicide, none of which were registered as having psychological problems. The Faroese Department for Work and Health has, from 1999 to 2003 made an annual study examining drug use of all students ($n = 659$ in 2003) in the ninth grade. In 1999, 7% had tried smoking hash (compared to 16% in the rest of Europe). Drug use is low with 90% having never tried drugs. Eight percent had during the last month been in contact with the police. Twelve percent reported attempting to commit suicide, and an additional 38% have self-mutilation ideation (http://www.health.fo).

METHOD

Subjects

The data were collected from a questionnaire survey with a total population sample of 687 adolescents aged 13 to 16 ($M = 14.2$ years; $SD = 2.1$). All 20 schools that taught eighth grade students were contacted and 19 of them agreed to participate. Geographically the schools were located on six different islands. The school that declined to participate only had one student at this grade level. On the day of the study all the students present, but two, agreed to participate. According to the Faroese Ministry of Education (Mentamálaráðið), there were 804 students in eighth grade; that is 85% of all the students participated.

The gender distribution was 320 boys (46.6%) and 353 girls (51.4%). Fourteen (2%) did not state their gender. Six hundred and seventy-nine (99%) stated with whom they lived, 562 (82%) lived with both their

Table 1. *Trauma and negative life events according to exposure and gender, statistical gender differences based on χ^2 analyses*

Event	Direct exposure (%)			Indirect exposure (%)		
	Females ($n = 353$)	Males ($n = 320$)	All[a] ($n = 673$)	Females ($n = 353$)	Males ($n = 320$)	All[a] ($n = 673$)
1. Traffic accident	13.0	21.3	16.9[3]	53.3	48.1	50.8
2. Other serious accidents	11.0	12.8	11.9	30.6	30.6	30.6
3. Physical assault	7.9	11.6	9.7	25.8	27.2	26.4
4. Rape	4.0	4.4	4.2	17.3	10.9	14.3[1]
5. Witnessed other people injured or killed	8.2	11.3	9.7	15.3	13.4	14.4
6. Came close to being injured or killed	10.5	15.0	12.6[1]	9.9	14.7	12.2[1]
7. Threatened to be beaten	23.8	40.9	31.9[5]	25.5	30.6	27.9
8. Near-drowning	19.0	25.6	21.1[1]	14.7	17.2	15.9
9. Attempted suicide	13.9	5.9	10.1[5]	29.5	13.4	21.8[5]
10. Robbery/theft	12.2	15.6	13.8	31.7	24.1	28.1[1]
11. Pregnancy/abortion	2.8	3.4	3.1	21.5	10.0	16.0[5]
12. Serious illness	14.2	11.9	13.1	43.6	35.6	39.8[1]
13. Death of someone close	58.9	47.2	53.3[4]	51.8	42.2	47.3[2]
14. Divorce	12.5	14.1	13.2	42.2	23.8	33.4[5]
15. Sexual abuse	6.5	3.8	5.2	17.3	9.1	13.4[4]
16. Physical abuse	5.1	10.0	7.4[1]	18.1	13.8	16.0
17. Severe childhood neglect	4.0	6.3	5.1	20.1	12.5	16.5[3]
18. Humiliation or persecution by others (bullying)	30.0	30.9	30.5	39.9	30.3	35.4[2]
19. Absence of a parent	17.0	12.2	14.7[1]	25.2	15.9	20.8[3]
20. Other traumas	6.5	7.5	7.0	4.2	3.1	3.7

[a] Fourteen did not state their gender.
[1] $p < 0.05$; [2] $p < 0.01$; [3] $p < 0.005$; [4] $p < 0.001$; [5] $p < 0.0005$.

parents, 111 (16%) lived with one parent and six students (1%) had other arrangements such as grandparents and children's home. Six hundred and seven students (88%) reported their fathers' education and 609 (89%) stated their mothers' education. The difference between the fathers' and mothers' education was ($t(578) = -6.71$; $p < 0.0005$) fathers versus mothers, respectively: primary school (nine years) 21% for both, high school (10–12 years) 15% versus 34%, "college" (3–4 years of professional education after high school) 28% versus 21%, and university (5–8 years of professional education after high school) 24% versus 13%.

Procedures

In advance of the study, the questionnaire and a letter explaining the aims of the study, and the confidentiality procedures were sent to the Faroese Data Inspection, who approved the study. The same material was afterwards sent to the Faroese Ministry of Education (Mentamálaráðið), and the Faroese Ethical Board, who also approved the study. After this, the study was introduced through (1) a letter to the school principals explaining the purpose of the study, the confidentiality procedures, and the procedure during the collection of the questionnaires; (2) a letter to the "head teacher" (the teacher responsible for the particular class) likewise explaining the purpose, the confidentiality, and the procedure; and (3) a letter to the students explaining the purpose, the confidentiality, the option of not participating, and the questionnaire collection procedures.

At the time of the completion of the questionnaire the authors met with the students once again explaining the purpose of the study, the confidentiality, the option of not participating, and the filling out of the questionnaires. In four of the schools the authors were not present and the "head teachers" gave the introduction, collected, and sealed the questionnaires in the classroom.

Measures

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

The last part of the questionnaire included a list of 20 traumatic events and negative life events (Table 1), for which the students on each question were asked to indicate whether the exposure had been direct or indirect – that is, whether they had experienced an event themselves or had a person close to them experience an event. The list of events was selected from scientific literature and clinical experience, covering possible life-threatening experiences (diagnostic criteria A1 according to DSM-IV), distressing family conditions such as pregnancy/abortion, and absence of a parent, and other negative life events.

The Harvard Trauma Questionnaire-Part IV (HTQ; Mollica, Caspi-Yavin, Bollini, Truong, Tor & Lavelle, 1992) was used to estimate the occurrence of PTSD at the time of the event. The HTQ is standardized in Danish (Bach, 2003). When completing the HTQ the students were asked to answer the items in relation to the event most distressing to them. The HTQ consists of 31 items out of which 17 items correspond to the PTSD diagnosis in the DSM-IV (American Psychiatric Association, 1994). The items are scored on a four-point Likert scale (1 = not present, 4 = very often present). The HTQ-Part IV permits an assessment of whether or not a person suffers from PTSD, and it has been extensively used in the Nordic countries, but has not previously been used on the Faroe Islands. A translation was assessed and accepted by two independent scholars and a clinical psychologist skilled in the Faroese language. The HTQ-Part IV measures the intensity

of the three core symptom groups of PTSD: Intrusion, Avoidance, and Hypervigilance. Only symptoms ≥3 count for a PTSD diagnosis. A subclinical level of PTSD is attained if the respondent meets two of the three criteria and misses the last criterion by only one symptom. Criteria for the Intrusion subscale, where only one symptom is needed, must however be met. The subscales are scored separately. Both Mollica and colleagues (1992) and Bach (2003) report good reliability and validity for the scale, but there does not yet exist HTQ reliability and validity data for adolescents or Faroese subjects. The internal consistency of the scale was high, with a Cronbach alpha of 0.98 for the PTSD scale and 0.88, 0.91, and 0.90 for the Intrusion, the Avoidance, and the Hypervigilance subscales, respectively. The mean inter-item correlations for the subscales were, correspondingly, 0.64, 0.59, and 0.63, which indicate a moderate discriminatory power (Briggs & Cheek, 1986).

RESULTS

Ninety percent of the students reported having directly experienced or having been witness to at least one event (94% of the females and 89% of the males). The five most recorded direct events (Table 1) were: death of someone close (53%), followed by threat of being beaten (32%), humiliation or persecution by others/bullying (31%), near-drowning (21%), and traffic accidents (17%). The least prevalent direct events were physical abuse (7%), followed by sexual abuse (5%), severe childhood neglect (5%), rape (4%), and pregnancy/abortion (3%).

Table 1 also discloses significant gender differences. Compared to females, males reported more traffic accidents, coming close to being injured or killed, threats of being beaten, near-drowning, and physical abuse. Females, on the other hand, more often reported attempted suicide, lost someone close, and an absent parent.

Concerning indirect exposure, males had witnessed or knew others who had been close to being injured or killed more often than females. Compared to males, females more often witnessed or knew about others who had been raped, had attempted suicide, had been exposed to theft or robbery, had been pregnant or had had an abortion, knew of others who had had a serious illness, who had lost someone close, had had a divorce, had been sexually abused, had been exposed to severe childhood neglect, had been persecuted or bullied by others or had had an absent parent (Table 1).

The average number of direct exposed events per student was 2.9. Nineteen percent reported of no event, 20% experienced one event, 16% two events, 13% three events, 13% four events, 6% five events, and 13% reported having experienced six or more events. The average number of indirect events per pupil was 4.8, and 9% of them reported having witnessed one event, 11% two events, 10% reported three events, 8% four events, 7% five events, and 37% reported having witnessed six events or more. The difference between the average number of direct events reported by the males and females was not significant (3.1 vs. 2.8 events respectively). On the other hand, females reported significantly more indirect events than males (5.4 vs. 4.3 events respectively, $F(1, 671) = 11.25$, $p < 0.001$). Sixteen percent of males and 12% of females reported six or more direct events; and 20% of the males vs. 43% of the females reported six or more indirect events. The prevalence of indirect exposure was generally much higher than direct exposure with regard to the specific events; except for the following events: death of someone close, near-drowning, threatened to be beaten, and coming close to being injured or killed where the direct exposure was higher.

With the purpose of calculating the risk of PTSD after either direct or indirect exposure to the distinct traumatic events and negative life events, logistic regression analyses were conducted using 95% confidence interval, lower and upper values presented. Fulfilling the criteria for PTSD, yes or no, was used as the dependent variable and the events were used as the independent variables. Following traumatic events and negative life events showed a significant odds ratio (*OR*) value: Having been exposed to serious accidents was associated with significant *OR*s for both females (2.51; $p < 0.05$; CI: 1.19–5–32) and males (3.07; $p < 0.05$; CI: 1.20–7–85). Having been exposed to physical abuse (4.97; $p < 0.05$; CI: 1.42–17.41) and knowing one who had witnessed other people injured or killed (2.42; $p < 0.05$; CI: 1.31–4.45) were associated with significant *OR* values for females, but not for males. Suicide attempt (5.04; $p < 0.05$; CI: 1–16–21.96), having made a girl pregnant, who either gave birth to the child or had an abortion (0.03; $p < 0.005$; CI: 0.00–0.31), and having been exposed to severe childhood neglect (6.83; $p < 0.005$; CI: 1.88–24.83) were associated with significant *OR* values for the males, but not for the females. For males having been exposed to robbery or theft was associated with significant *OR* value (3.67; $p < 0.005$; CI: 1.47–9.14), whereas indirect exposure to robbery was associated to a significant higher risk of PTSD for the females (1.87; $p < 0.05$; CI: 1.14–3.06). Finally, direct exposure to threats of being beaten (1.80; $p < 0.05$; CI: 1.00–3.22) and bullying (3.01; $p < 0.0005$; CI: 1.79–5.08) were associated with significant *OR*s for the females, whereas, indirect exposure of the same events were associated with significant *OR*s for males ($OR = 2.37$; $p < 0.05$; CI: 1.05–5.34; $OR = 2.43$; $p < 0.05$; CI: 1.08–5.48, respectively). For males the full model containing the direct events was statistically significant ($\chi^2 = 35.44$; $p < 0.0005$), indicating that the model was able to distinguish between respondents who fulfilled and who did not fulfill the criteria for PTSD and the direct events (serious accidents, suicide attempt, robbery, abortion/pregnancy, and severe childhood neglect) could explain 22% of the variance in PTSD (Nagelkerke $R^2 = 0.22$). For females the full model containing the direct events also was statistically significant ($\chi^2 = 54.56$; $p < 0.0005$), and the direct events (serious accidents, threats of being beaten, physical abuse, and bullying) could explain 20% of the variance in PTSD (Nagelkerke $R^2 = 0.20$). The model containing the indirect events was also statistically significant for males ($\chi^2 = 14.69$; $p < 0.001$) and the indirect events (knowing one who has witnessed other people injured or killed, and having witnessed other being bullied) could explain 9% of the variance in PTSD (Nagelkerke $R^2 = 0.09$). For females the model for indirect also was significant ($\chi^2 = 17.70$; $p < 0.0005$) and the indirect events

(knowing one who has witnessed other people injured or killed, having witnessed a robbery, and physical abuse) could explain 7% of the variance in PTSD (Nagelkerke $R^2 = 0.07$).

There was no significant association between the mothers' level of education and the number of events reported by the students. On the other hand, there was a significant difference between the fathers' level of education and the number of direct events reported by the students ($F(3, 603) = 2.87$; $p < 0.05$). Students whose fathers' education was primary school reported least number of events experienced, followed by an education corresponding to a university degree, then college, and finally high school.

Unlike living with both parents, living with a single parent was significantly and positively related to the number of direct events experienced ($F(1, 671) = 31.39$; $p < 0.0005$). Furthermore, this group more frequently reported the following direct events (all *df*s = 1, 671): other serious accidents ($F = 4.79$; $p < 0.05$), near-drowning ($F = 8.53$; $p < 0.005$), sexual abuse ($F = 3.92$; $p < 0.05$), and severe childhood neglect ($F = 10.91$; $p < 0.001$). Moreover, they reported witnessing physical assault more frequently ($F = 5.18$; $p < 0.05$).

In all, 489 students (71.2%) stated their gender and gave full information on the HTQ. The distribution was 233 males and 256 females of which 32 males (i.e. 14%) and 105 females (41%) fulfilled the criteria for PTSD at the time of the event (corresponding to 20% of the total sample). Two more students fulfilled the criteria for PTSD, but did not state their gender. Moreover, 34 (15%) males and 65 (25%) females, corresponding to 14% of the total sample, constituted a subclinical group missing the PTSD diagnosis by one symptom from the C and D group according to DSM-IV. The difference between the two sexes was highly significant ($\chi^2 = 86.74$; $df = 1$; $p < 0.0005$). The students' age and parents' education was not related to PTSD. Living with a single parent was related to the HTQ total score ($F(1, 483) = 3.76$; $p < 0.05$). Number of direct events was highly related to PTSD ($F(4, 488) = 12.84$; $p < 0.005$), and number of indirect events was likewise positively associated with PTSD ($F(4, 488) = 6.04$; $p < 0.005$). Having experienced an event recently was related to PTSD ($F(1, 491) = 21.84$; $p < 0.005$).

DISCUSSION

The present study revealed that 94% of the Faroese female and 89% of the male eighth graders had experienced or witnessed at least one traumatic event, supporting previous national probability studies examining the same age group, where the results vary from 74–87% for females and 78–81% for males (Bödvarsdóttir & Elklit, 2007; Domainskaite-Gota & Elklit, submitted; Elklit, 2002). Likewise, the prevalence of direct exposure in the present study was in line with previous studies ($M = 2.9$ events per student compared to $M = 1.9$–3.1 events per student). However, compared with these earlier studies, a much higher lifetime prevalence of PTSD, 20%, was found while another 14% of the subjects reached a subclinical level. These numbers are much higher compared to what was found in the same age group in Denmark (9%; Elklit, 2002), Iceland (16%; Bödvarsdóttir & Elklit, 2007), and in Lithuania (6%; Domainskaite-Gota & Elklit, submitted). The difference observed could be due to the fact that the prevalence of indirect exposure in the present study was higher than in previous studies ($M = 4.8$ events per student compared to $M = 2.4$–3.5 events per student). Analyses showed that the experience of indirect events was associated with PTSD and could, therefore, explain the large difference in the prevalence of PTSD compared to the earlier national probability studies mentioned above.

Previous studies have indicated that direct exposure is more traumatizing than indirect exposure, also described as a "dose-response" connection between exposure and the subsequent reactions (Elklit & Molin, 2006). However, not all studies confirm the "dose-response" relationship. In a study of a shooting at the University of Aarhus, Elklit (1994) found that those who were not at the center of the catastrophe had more acute psychological sequelae than those who had been at the center. Similarly, Elklit (1997), studying the aftermath of a shipyard explosion, found that the degree of traumatization after six months was higher in the group who had had an "audience position" compared to the group directly hit by the explosion. The two studies highlight the importance of differentiating the exposure criteria. Being in the second line of exposure, learning about killing or death *and* having experienced an uncertainty about one's own fate for some time ("will the gunman come to our classroom?", "will the explosion spread?") can sometimes result in more severe either acute or long-term stress reactions than is the case for first-line exposed subjects. The present study also indicates that indirect exposure to, for instance threats of being beaten or bullying, is more traumatizing for males than direct exposure.

One possible explanation for the effect of indirect exposure in general could be the powerlessness and helplessness experienced by the witnesses combined with the threat which could not be precisely confirmed (Seligman, 1975). The male subjects in the present study having witnessed others being bullied or being threatened might experience a strong feeling of powerlessness and might have troubles sustaining their self-image of having a protective role. Moreover, indirect exposure does not necessarily elicit the same amount of social support, coping efforts, self-efficacy assessment, and crisis intervention as direct exposure (Elklit, 1994, 1997).

With regard to the present study, a further explanation of the observed findings could be that the Faroe Islands is a small and geographically isolated country with a rough nature, which may make the degree of indirect exposure relatively more prevalent, present, and relevant. This, in combination with a predominantly homogenous population, familiarity may encourage others to identify more with the victims and their relatives. Also, the numbers of social, work, and kinship ties are perhaps stronger in the Faroese Islands due to the geographic structure, when compared to other communities of equal size. In line with previous studies on the prevalence of PTSD the present study

revealed an overrepresentation of females (3:1). This female to male ratio was found to a smaller degree in the subclinical PTSD sample. Furthermore, significant gender differences were found in terms of type of exposure, corresponding to findings from previous national probability studies (Bódvarsdottir & Elklit, 2007; Domainskaite-Gota & Elklit, submitted; Elklit, 2002). It has been suggested (i.e. Elklit, 2002) that females seem to be victimized more often in family-related events and by self-inflicted events (suicide attempts), whereas males more often seem to be victimized in activities outside of the family. This is in line with the present results, where females significantly more often reported of suicide attempt, death of someone close and absence of a parent, whereas the male subject significantly more often reported of extra familiar traumas, such as traffic accidents, threats, near-drowning and coming close to being injured or killed.

The correlations between parents' education and number of events experienced in the present study seriously challenge the assumption that low educated parents might contribute to their children participating in risk behaviour (Werner & Smith, 1982). The students who reported that their father had the lowest level of education also reported having experienced least direct exposure events. The correlation was not linear, however, as this group was followed by the students with fathers having an education at the highest level. This is similar to that found in studies of adolescents in both Iceland (Bödvarsdóttir & Elklit, 2007) and Denmark (Elklit, 2002). Concerning the mothers' education, the tendency was similar but non-significant.

The present study indicated that abortion or pregnancy did have some, but not a substantial, influence on PTSD. Furthermore, it supports previous studies as it shows a significant association between living with a single parent, exposure to specific events such as serious accidents, near-drowning, sexual abuse, and severe childhood neglect, and the risk of PTSD (Bödvarsdóttir & Elklit, 2007; Elklit, 2002). Finally, the results show some interesting gender differences given that direct or indirect exposure to some traumatic events and negative life events showed an increased risk of PTSD for males and not for females, or the other way around. Moreover, direct exposure to some traumatic events and negative life events showed an increased risk of PTSD to one gender whereas indirect exposure entailed an increased risk of PTSD for the other gender.

Limitations

The study has a number of limitations. It is based on students' self-reports that could have produced a response bias as regards the students' ability to be factual, their honesty, and their willingness to remember painful events. However, it is likely that the use of the event list may be an advantage because it promotes recognition rather than recall, which is less distressful in the report of emotionally stressful events (Willis & Gonzalez, 1998). Furthermore, the fact that the subjects are adolescents might produce less of a memory bias, as some events are more recent compared to similar studies of adult subjects. Also, the anonymity of the classroom could for some have made reporting easier compared to an interview conducted by an authority figure. The construction of the questionnaire placed the list of events almost at the end to reduce a biased attitude toward the trauma issue, even when this purpose was mentioned in the introduction. Although the event questionnaire has not been validated, it seems to function well across European cultures (Elklit, 2002). Finally, because of the design of the study there was no way of reporting whether an event had occurred more than once, hence a distinction between the effect of a single event trauma and repetitive traumas could not be made.

Among the strengths of the study are the total sample approach and the use of a well-established instrument for assessing PTSD. The threshold for counting PTSD symptoms is high compared to other measures (e.g. PSS; Foa, Riggs, Dancu & Rothbaum, 1993).

Clinical implications

The study supports previous findings that adolescents have been exposed to a considerable amount of stressful events. The majority of studies on adolescents and trauma have focused on specific traumatic events (i.e. violence and sexual abuse). However, studies based on a single type of trauma may fail to give a more comprehensive picture of multiple possibly distressing events and their impact on the development in adolescence. In addition, this might lead to ineffective clinical intervention for this age group. Thus, as part of the assessment and planning of intervention, mental health professionals should develop a standard procedure to obtain information about stressful and traumatic events from adolescents. With regard to the Faroe Islands, there are only a few school psychologists. The present study might contribute toward emphasizing the importance of assessment, counselling, and treatment of the adolescent population. Findings from the present study also suggest the need and relevance of research when it comes to the impact of indirect exposure on PTSD, in other geographically and culturally well-defined societies and in general.

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