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## Modeling Patterns of Negative Life Events and Mental Health in Faroese Adolescents

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### Abstract

**Objectives:** The objective of this study was to identify naturally occurring typologies of Faroese adolescents on the basis of their exposure to traumatic and negative life events. It was hypothesized that underlying typologies of trauma and negative life events would be uncovered. Furthermore, it was hypothesized that males would be overrepresented in classes characterized by the endorsement of a wide range of trauma and negative life events. On the basis of prior research, it was also hypothesized that females had endorsed more traumas of a sexual nature and that males had endorsed more traumas of a violent nature. Finally, post-traumatic stress, negative affectivity, and somatization were examined in the different typologies.

**Methods:** Latent class analyses were conducted with the use of data collected from a self-report questionnaire survey from 687 Faroese eighth graders (85% response rate). The questionnaire included a traumatic and negative life event list, the Harvard Trauma Questionnaire—Part IV, and the Trauma Symptom Checklist.

**Results:** Three classes of adolescents were identified on the basis of their exposure to potentially traumatic and negative life events. The baseline class (81.3%) had a low probability of the endorsement of all potentially traumatic and negative life events, except threats of violence and bullying. This group had low scores for post-traumatic symptoms, negative affectivity, and somatization. Class 2 (13.7%) comprised mainly males and had the highest probability of endorsement of threats of violence, physical assault, and bullying; this group also had high scores for post-traumatic stress symptoms, negative affectivity, and somatization. Finally, Class 1 (5.0%) consisted of adolescents with a relatively high risk of exposure to all potentially traumatic events and negative life events, except threats of violence. This group had the highest scores for post-traumatic stress symptoms, negative affectivity, and somatization.

**Conclusions:** The present study can be said to be a concise picture of trauma exposure and its consequences among Faroese adolescents, and it is thereby a valuable tool for the national planning of preventive and interventional strategies and for empirically founded economic prioritization. These results emphasize the importance of choosing a trauma-informed strategy in various disciplines, such as pediatrics, child and adolescent psychiatry, social work, and school psychology when the aim is to provide the appropriate intervention.

**Key words:** trauma typologies, adolescents, latent class analysis, total population, posttraumatic stress

### Introduction

#### *Trauma exposure*

Exposure to trauma is highly prevalent (1). However, studies of adolescents' exposure to traumatic events are still mainly focused on specific trauma populations, and studies of a broader range of events are relatively scarce (2). European studies based on national probability populations of young adolescents from 14 to 15 years old found that the prevalence of direct and indirect exposure to trau-

matic and negative life events varied from 79% to 81% among males and from 74% to 87% among females (3). Alternative studies that use the same data as those used for the current study have shown that the prevalence of direct and indirect exposure was somewhat higher among Faroese adolescents of the same age, given that reported rates were 89% among males and 94% among females (4).

*Consequences of trauma*

Research has shown that exposure to trauma has a negative effect on children and adolescents in various domains and that these consequences might be prolonged or chronic. Exposure to traumatic events alters psychological development and risk of maladjustment. Short- and long-term psychological and physical health problems are significantly more prevalent among children and adolescents exposed to traumatic events as compared with those who are not exposed to traumatic events (5). Broberg, Dyregrov, and Lilled (6) found that school achievement among adolescents was significantly worsened after exposure to a traumatic discotheque fire. Other studies have found that post-traumatic stress disorder (PTSD) may be a determinant of drug use disorder, given that drugs may be used for the self-medication of trauma-related memories, nightmares, and hyperarousal symptoms (7). In a comprehensive meta-analysis of 16 epidemiological studies that includes more than 23,000 participants, Nanni and colleagues reported that trauma such as childhood maltreatment was associated with both recurrent and chronic depression (8). In another meta-analysis of 10 clinical trials, the same researchers found that childhood maltreatment was associated negatively with treatment outcome (8). Studies among risk populations, such as refugees, have shown that the prevalence of PTSD ranges from 31% to 47%, even when the traumatic event had taken place 9 to 11 years before the study (9). A prospective, longitudinal, epidemiological study of 2548 German adolescents and young adults between the ages of 14 and 24 years showed that 48% of those with PTSD and subthreshold PTSD had no significant decline in PTSD symptoms 34 to 50 months later (10).

*Traumatization and gender*

Studies have found a gender difference with regard to both exposure to trauma and the consequences of trauma. Most studies have shown that exposure to traumatic events is more prevalent among males, whereas the lifetime prevalence of post-traumatic stress was higher among females (1;11;12). Tolin and Foa (12) found that this gender difference could not be explained by methodological issues, and it was not likely to be overturned by the file-drawer effect. However, most studies that examine gender differences in mental health and trauma are based on convenience samples or specific trauma groups, which might provide artificial results. When comparing post-traumatic stress among adolescents aged 14 and 15 years from four European countries, Elklit and Petersen (3) reported cultural variations in this gender difference on the basis of three national probability samples and one total population

sample: in Lithuania and Denmark, the male-to-female ratio was 2:1; in the Faroe Islands, it was 3:1; and in Iceland, there were no gender differences.

*Identification of traumatized adolescents*

Studies indicate that exposure to traumatic events may lead to an enhanced risk for further traumatization. For example, studies have found that the exposure rate to new traumatic events among adolescents and young adults rose from 17% to 20% during a follow-up period of 34 to 50 months (13). This rise may be attributable to these adolescents being more sensitive to new trauma or to prior trauma increasing the risk of later exposure. Briggs and colleagues (5) argue that making group distinctions and identifying vulnerable groups of children and adolescents is important, given the growing evidence that youths who report multiple traumas are at greater risk for subsequent trauma exposure as compared with youths who report a single trauma.

The identification of a trauma history in adolescents is important, given that knowledge of such can be used to guide treatment plans and to prevent further traumatization. In addition, it is of great economic interest for society, because studies have shown that childhood exposure to traumatic events is associated with a significantly higher use of mental and physical health services among adults (5;14). A study based on 668 questionnaires from females in a gynecologic clinic found that more than half of the sample - all well-educated, middle-class women between 16 and 76 years old - had been exposed to childhood abuse (15). This study also showed that the females who were exposed to abuse during their childhood reported significantly more psychological and physical problems and more hospitalizations for illnesses as compared with those females without childhood abuse.

Recent research has implemented more complex statistical methods for the identification of traumatized groups. Indeed, latent class analysis (LCA) and latent profile analysis (LPA) have been used with the aim of uncovering naturally occurring typologies of traumatic experiences. LCA and LPA are ideal statistical methods for uncovering typologies, because they categorize individuals into groups on the basis of how they respond to a series of questions. Similar responders are categorized together. To date, studies using LCA and LPA have shown that maltreated children can be divided into different classes that are characterized by various combinations of maltreatment, different severities, and various consequences of the maltreatment (16;17).

## Aims and hypotheses

To enhance the basis for planning preventive and interventional strategies and to contribute to an empirical foundation for economic prioritization, the present study was conducted. One aim was to identify naturally occurring typologies of Faroese adolescents on the basis of their exposure to traumatic and negative life events. It was hypothesized that underlying typologies of trauma and negative life events would be uncovered. Furthermore, it was hypothesized that the male gender would be predictive of membership in classes that endorsed a wide range of trauma and negative life events, given literature that has reported that males experience more trauma than females (12). However, we were mindful that males and females have been reported as experiencing different types of trauma. For example, females experience traumas of a sexual nature more so than males, and males experience traumas of physical violence more so than females (4;12). Thus, associations between classes and gender may vary as a function of the class characteristics (i.e., the type of trauma and negative life event endorsed). Another aim was to examine post-traumatic stress, negative affectivity, and somatization among the adolescents in the different classes. Given the extant literature that associates trauma and negative life events with the development of mental health issues (15), we hypothesized that individuals who met the criteria for post-traumatic stress, negative affectivity, and somatization would be more likely to be members of classes characterized by strong probabilities of endorsing traumas and negative life events as compared with a baseline class.

## Method

### *Procedure*

The present study is based on data from the Faroese Trauma Study among adolescents. The data was collected from a self-report questionnaire survey from 687 Faroese eighth graders (85% response rate). The study was approved by the Faroese Data Protection Agency the Faroese Ministry of Education, and the Faroese Ethical Board. The ages of the participants ranged from 13 to 16 years (mean, 14.2 years; standard deviation, 2.1 years), and just more than half of the sample were males (52.5%). See the articles by Elklit and Petersen (3) and Petersen and colleagues (4) for further details.

## Measures

*Event list:* The original questionnaire included a list of 19 potentially traumatic events and negative life events. The adolescents were asked to choose the

event that they found most distressing. They were subsequently asked to complete the Harvard Trauma Questionnaire - Part IV (HTQ-IV) for their most distressing event. We queried a number of potentially traumatizing and negative life events, but, rather than include all of them, we focused on those from the literature that are thought to be some of the most traumatizing: physical abuse, sexual abuse, neglect (18), rape (19), physical assault, having witnessed others injured or killed or threats of violence (20), bullying (21), attempted suicide (22), and serious illness (23;24) (Table 1).

*Posttraumatic stress symptoms:* The HTQ-IV (25) was used to estimate the post-traumatic stress symptoms at the time that followed the potentially traumatic or negative life event. The HTQ-IV consists of 31 items, of which 17 items correspond to the PTSD diagnosis in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (26). The items are scored on a four-point Likert scale (1 = not present, 4 = very often present). The HTQ-IV has been extensively used in the Nordic countries, but it had not previously been used in the Faroe Islands. A translation was assessed and accepted by two independent scholars and a clinical psychologist skilled in the Faroese language.

The HTQ-IV measures the intensity of the three core symptom groups of PTSD: intrusion, avoidance, and hypervigilance. Only symptoms given a score of 3 or more count toward a PTSD diagnosis. Both Mollica and colleagues (25) and Bach (27) reported good reliability and validity for the scale; however, HTQ-IV reliability and validity data for adolescents or Faroese subjects is not currently available. The internal consistency of the scale was high, with a Cronbach's alpha of 0.98 for the total PTSD scale and alphas of 0.88, 0.91, and 0.90 for the intrusion, avoidance, and hypervigilance subscales, respectively. The mean inter-item correlations for the subscales were, correspondingly, 0.64, 0.59, and 0.63, thereby indicating a moderate discriminatory power (28).

*Negative affectivity and somatization:* The Trauma Symptom Checklist (TSC) is a broad symptom list that assesses the impact of a traumatic event or negative life event on an individual's body, emotions, and cognition in addition to their social relations and self-image. Each item is scored on a four-point Likert scale (0 = not present, 3 = very often present). The TSC was originally created by Briere and Runtz (29), and the validity and reliability of the TSC have been shown to be good. Factor analysis of the TSC has identified two subscales: the somatization subscale and the negative affectivity subscale (30). The somatization subscale consists of eight

items related to headache, dizziness, stomachache, and other nonspecific somatic symptoms. Adolescents in the current study with scores of more than 23 were defined as having high somatization levels. The negative affectivity subscale consists of 10 items related to a mixture of anxiety and depressive symptoms, such as sadness and thoughts of self-harm. Adolescents in the current study with scores of more than 30 were defined as depressed. The revised TSC has good reliability and good factor and criteria validity. The alpha values in this study were 0.82 for somatization and 0.85 for negative affectivity.

**Analysis**

All analyses within the current study were implemented with the use of Mplus version 6 (31). LCA (32) was employed to determine if empirically derived typologies of binary coded trauma and negative life events exist among Faroese adolescents. LCA is an exploratory and iterative model-building technique that uncovers typologies on the basis of an individual’s similarity of responding across a series of manifest variables. The probability of class membership (posterior probabilities) is derived from two parameters: class probabilities (i.e., class prevalence) and item probabilities (i.e., specific item endorsement probabilities). Individuals are assigned membership in a particular class in a probabilistic fashion rather than a deterministic fashion. For comprehensive details of this statistical technique, please consult the article by Haagenars and McCutcheon (32).

In the current study, we specified and estimated five latent class models (two to six classes) with the use of the default robust maximum likelihood estimator. To ensure successful convergence on global maxima, we employed 500 random sets of initial starting values with 10 optimizations. To ascertain which latent class solution provided optimal fit to the data, we consulted several fit indices, including the Akaike information criterion (AIC) (33), the Bayesian information criterion (BIC) (34), the sample-size adjusted BIC (SSABIC) (35), the entropy value (36), and the Lo-Mendell-Rubin adjusted likelihood ratio test (LRT) (37). Optimal fit is indicated by models, which have lower AIC, BIC, and SSABIC values. On some occasions, fit may improve with the AIC, BIC, and SSABIC continually lowering. DiStefano and Kamphaus (38) noted that the difference between continually lowering values should be calculated. In the event that the difference between a particular latent class model and one with an additional class is particularly small, the additional class is said to add little to the model. Nylund and colleagues (39) recently conducted a

series of simulation studies in which they concluded that the BIC was the most reliable indicator of latent class enumeration. Before this, Yang (40) reported that the SSABIC was the most reliable indicator of latent class enumeration. Entropy values give a measure of how distinct classes within a latent class model are from one another. Values range from 0 to 1, and those that reach 1 indicate clear classification. A nonsignificant LRT indicates that a latent class model with one less class may be the more parsimonious option. After determining which latent class model was the optimal fit to the data, the model parameters were fixed before the inclusion of covariates, thereby ensuring that the covariates did not impact the latent class structure. Multinomial logistic regression was subsequently employed to regress an individual’s conditional probabilities for indicators of gender and mental health. The odd ratios and corresponding 95% confidence intervals presented indicate an individual’s likelihood of membership in classes as compared with the baseline class.

**Results**

*Frequencies of negative life events*

The most commonly endorsed trauma or negative life events was threats of violence (31.6%), closely followed by humiliation or persecution from others (30.1%). The least commonly endorsed negative life events or trauma was rape (4.1%). Table 1 reports participants’ endorsement across all 10 trauma or negative life events.

**TABLE 1. Frequency of endorsement of direct trauma exposure and negative life events among Faroese adolescents (n = 687)**

| Traumatic events and negative life events             | Frequency of endorsement (%) |
|---|------------------------------|
| 1. Physical assault                                   | 9.6                          |
| 2. Rape   | 4.1                          |
| 3. Witnessing the injury or death of others           | 9.6                          |
| 4. Threats of violence                                | 31.6                         |
| 5. Suicide attempts                                   | 9.9                          |
| 6. Serious illness                                    | 12.8                         |
| 7. Sexual abuse                                       | 5.1                          |
| 8. Physical abuse                                     | 7.3                          |
| 9. Neglect  | 4.9                          |
| 10. Humiliation or persecution from others (bullying) | 30.1                         |

*Prevalence of posttraumatic stress, depression, and somatization*

Of the adolescents surveyed, 139 (20.2%) fulfilled the criteria for post-traumatic stress. Of these, 75 (10.9%) had high scores for negative affectivity, and 86 (12.5%) had high somatization scores.

*Latent class analysis*

*Class enumeration:* The fit statistics for latent class models two through six across 10 binary negative life events (physical assault, rape, witnessed others

injured or killed, threats of violence, attempted suicide, serious illness, sexual abuse, physical abuse, neglect, and humiliation) indicators are presented in Table 2. The value of the AIC continually lowers from the two-class solution to the six- or five-class solution, with a slight increase from the five-class solution to the six-class solution. The largest decrease occurs from the two-class solution to the three-class solution, thereby indicating that the three-class solution provides optimal fit. The lowest BIC value is found for the three-class solution. The lowest value for the SSABIC is found for the four-class solution; however, it is merely 1 point lower than the BIC value for the three-class solution. In addition, when applying the recommendations of DiStefano and Kamphaus (38), the largest decrease for the SSABIC value occurs from the two-class solution to the three-class solution; this suggests that the three-class solution is optimal, although there is a slight rise in value from the four-class solution to the five-class solution and from the five-class solution to the six-class solution. The entropy values are highest for the two-, four-, and three-class solutions, respectively. However, a value of 0.860 indicates that individuals in the three-class solution are clearly classified. The LRT value becomes nonsignificant for the five-class solution, thereby indicating that the four-class solution may be the more parsimonious option. Taking all fit statistics into consideration and based on DiStefano and Kamphaus (38), Nylund and colleagues (39), and Yang (40), the three-class solution provides an optimal fit to the data.

TABLE 2. Fit indices for latent Classes 2 through 6

|         | AIC      | BIC      | SSABIC   | Entropy | LRT<br>(P value)    |
|---------|----------|----------|----------|---------|---------------------|
| Class 2 | 4118.539 | 4213.718 | 4147.040 | 0.901   | 591.512<br>(0.0000) |
| Class 3 | 4059.463 | 4204.498 | 4102.893 | 0.860   | 79.963<br>(0.0315)  |
| Class 4 | 4042.828 | 4237.718 | 4101.187 | 0.885   | 38.105<br>(0.0436)  |
| Class 5 | 4035.082 | 4279.828 | 4108.370 | 0.754   | 29.337<br>(0.1789)  |
| Class 6 | 4036.071 | 4330.672 | 4124.288 | 0.780   | 20.723<br>(0.0364)  |

AIC, Akaike information criterion; BIC, Bayesian information criterion; SSABIC, sample-size adjusted Bayesian information criterion; LRT (P value) = Lo-Mendell-Rubin adjusted likelihood ration test value and associated significance level

three-fold risk of being in Class 2 (versus Class 3) when compared with females (odds ratio [OR], 2.4; confidence interval [CI], 1.81 to 3.42). Diagnosis with PTSD significantly predicted membership in Classes 1 and 2. Indeed, individuals who met the diagnostic criteria for post-traumatic stress had about a two-fold risk for being in Class 1 (OR, 2.41;

*Class characteristics:* Class 3 (81.3%) was characterized by individuals who had low probabilities of the endorsement of all potentially traumatic events, with the exception of the threats of violence indicator and the bullying indicator; however, the probability of endorsement was still low as compared with that of the alternative classes. Therefore, Class 3 can be referred to as the *baseline class*. Class 2 (13.7%) was characterized by individuals who had the highest probability of endorsement of the threats of violence indicator. The probabilities of endorsement of the physical assault and bullying indicators were also high in Class 2 relative to the alternative potentially traumatic events; however, they were lower than the probabilities of the endorsement of these indicators for individuals in Class 1, albeit only marginally. Class 2 will therefore be referred to as the *physical assault, threats of violence, and bullying class*. Class 1 (5.0%) was the smallest of all three classes, and it was characterized by relatively high probabilities of the endorsement of all potentially traumatic events. In particular, individuals in this class had high probabilities of endorsing the rape, sexual abuse, and bullying indicators as compared with alternative negative life events or trauma. Notably, the individuals in this class had the highest probabilities of endorsement for all potentially traumatic events, except threats of violence. Therefore, Class 1 will be referred to as the *multiple, wide-ranging, potentially traumatic events class*. The latent class profile plot is presented in Figure 1.

*Logistic regressions*

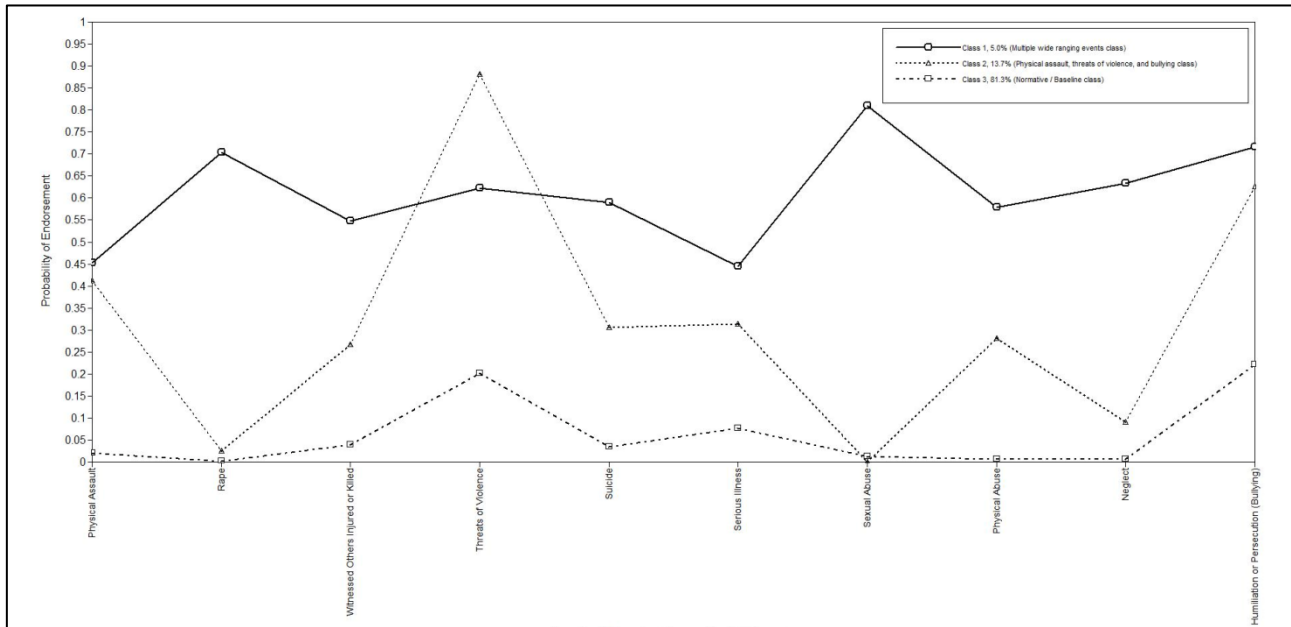
Logistic regression was conducted with the use of the covariates of gender, post-traumatic stress, somatization, and negative affectivity to determine if those individuals of male gender (males = 1; females = 0), those who met the diagnostic criteria for post-traumatic stress disorder (yes = 1; no = 0), and those who had high scores on somatization and negative affectivity (yes = 1; no = 0) had a relative higher risk of being members of Classes 1 (multiple, wide-ranging, potentially traumatic events class) and 2 (physical assault, threats of violence, and bullying class) as compared with Class 3 (baseline class). There was no significant association found between gender and membership in Class 1 as compared with membership in Class 3. However, membership in Class 2 as compared with Class 3 was significantly predicted by gender in that males had a nearly CI, 1.17 to 4.50) or Class 2 (OR, 2.45; CI, 1.73 to 3.47) as compared with Class 3. High scores on somatization and negative affectivity both provided significant associations with Classes 1 and 2 as compared with Class 3. Individuals who met the criteria for somatization had a three-fold risk of being in Class 1 (OR, 2.76; CI, 1.36 to 5.59) and a



more than two-fold risk of being in Class 2 (OR, 2.45; CI, 1.60 to 3.74) as compared with Class 3. Finally, individuals who met the criteria for negative affectivity had a more than five-fold risk of being in

Class 1 (OR, 5.18; CI, 2.38 to 11.28) and an almost three-fold risk of being in Class 2 (OR, 2.80; CI, 1.79 to 4.37) as compared with Class 3.

FIGURE 1



Profile plot of three traumatic events and negative life events classes. Class 1, Multiple, wide-ranging, negative life events class; Class 2, Physical assault, threats of violence, and bullying class; Class 3, Normative/baseline class

TABLE 3. Characteristics of the three classes of Faroese adolescents (n = 687)

|   | Class 3:<br>Normative/<br>baseline class | Class 2:<br>Physical<br>assault,<br>threats of<br>violence,<br>and bullying<br>class | Class 1:<br>Multiple,<br>wide-<br>ranging,<br>negative life<br>events class |
|---|--|--|---|
| Percentage of population  | 81.3%                                    | 13.7%  | 5.0%  |
| Percentage of males*  | 46.4%                                    | 56.6%  | 47.1%   |
| Mean score for negative affectivity (standard deviation)                | 21.2 (7.7)                               | 26.9 (7.8)   | 28.8 (8.4)  |
| Mean score somatization (standard deviation)                            | 16.5 (5.8)                               | 20.9 (6.4)   | 22.3 (6.6)  |
| Mean score on Harvard Trauma Questionnaire—Part IV (standard deviation) | 57.9 (19.3)                              | 74.9 (25.4)  | 82.9 (25.3)   |
| Subjects with post-traumatic stress disorder                            | 16.5%                                    | 37.7%  | 44.1%   |
| Depressed subjects  | 7.3%                                     | 26.0%  | 38.2%   |
| Subjects with high somatization scores                                  | 9.0%                                     | 28.6%  | 35.3%   |

\* Fourteen subjects did not state their gender

Discussion

Three classes of adolescents were identified on the basis of their exposure to potentially traumatic events and negative life events. The baseline class

(81.3%) had a low probability of endorsement of all potentially traumatic events and negative life events, except threats of violence and bullying. Class 2 (13.7%) consisted of adolescents with the highest probability of the endorsement of threats of violence, physical assault, and bullying. Finally, Class 1 (5.0%) consisted of adolescents who were characterized by a relatively high risk of exposure to all potentially traumatic events and negative life events, except threats of violence.

In comparison, a study based on a national probability sample of 4023 adolescents between the ages of 12 and 17 years identified six classes on the basis of trauma profile (41). Ford and colleagues identified four poly-victimized classes, in which 4% of the adolescents belonged to the sexual abuse and assault poly-victimized class; this can be compared with the 5% of such individuals found in the present study. Another 4% of the adolescents in the study belonged to the physical abuse and assault poly-victimization class (41). In the present study, adolescents with the highest probability of having been exposed to physical abuse also had been exposed to sexual abuse, whereas those with the highest probability of the endorsement of physical assault (13.7%) had the highest probability of exposure to threats of violence and exposure to bullying.

Another study, which was based on 4053 children between the ages of 2 and 17 years, demonstrated that 79% of the poly-victimized children had been exposed to some kind of maltreatment as compared with 18% among the other victimized children (42).

Various secondary symptoms are often seen among individuals with PTSD, and sometimes these secondary symptoms are the most tormenting for the person who is experiencing them (43). The most prevalent secondary symptoms that have been reported include depression, anxiety, impulsive behavior, and somatization (44). In a study of 2030 respondents between the ages of 2 and 17 years, the poly-victimized individuals were mainly males, and poly-victimization was the highest predictor of anxiety, depression, and anger symptoms, even when sexual abuse was taken into account (45). These findings have been replicated in another study made by the same researcher group in another sample of 2- to 17-year-old subjects (42). Alternatively, a descriptive Australian study of 117 children between the ages of 3 and 6 years old who were in foster care and 60 children matched for age and socioeconomic status with the use of analysis of variance demonstrated that the children in foster care could be divided into four different maltreatment subgroups. Of these children, 11 (10%) had been exposed to all four forms of maltreatment: sexual abuse, physical abuse, emotional maltreatment, and neglect; 19 (6%) had been exposed to physical abuse, neglect, and emotional maltreatment; 13 (12%) had been exposed to sexual abuse, emotional maltreatment, and neglect; and 68 (61%) had been exposed to supervisory neglect and emotional maltreatment. All of these groups had significantly more post-traumatic stress symptoms when compared with the control group. When comparing the four maltreatment groups, the sexual abuse groups had high scores for posttraumatic stress, whereas the physical abuse group had high scores for dissociation (46).

As expected, we found that adolescents exposed to trauma (i.e., those in Classes 1 and 2) had more symptoms of post-traumatic stress, negative affectivity, and somatization as compared with the adolescents in Class 3. This is also in line with other studies of children and adolescents, which have shown that exposure to trauma has a serious impact on psychological health (47) and that exposure to multiple traumas increases psychological distress and post-traumatic stress (12). Ford and colleagues also found that high exposure was associated with high reports of trauma symptoms; those researchers found the poly-victimized adolescents to be more likely to have PTSD, major depressive disorder, and substance abuse disorder (41).

Nylund and colleagues (39) found that victimized students felt less secure at school. As in the present

study, the researchers also found that the group of nonvictimized students was the largest group.

There was no significant association found between gender and Class 1 as compared with Class 3. This is contrary to what we expected, because Class 1 is characterized by sexual trauma (i.e., rape and sexual abuse). Other studies have found the prevalence of sexual trauma to be higher among females. For instance, Karsberg, Lasgaard, and Elklit (48) found the prevalence of sexual abuse to be 4.4% among Greenlandic male adolescents as compared with 10% among female Greenlandic adolescents. Briggs and colleagues (5) also found a higher prevalence of sexual maltreatment among American female children and adolescents as compared with American male children and adolescents.

In line with the literature that demonstrates a greater prevalence of physical abuse among males (12,49), we found that membership in Class 2 (physical assault, threats of violence, and bullying class) as compared with Class 3 (the baseline class) was significantly predicted by gender in that males were almost three times as likely to belong to Class 2 as compared with Class 3 (OR, 2.4; CI, 1.81 to 3.42). In their comprehensive study of 11,104 children and adolescents in a national clinic-referred sample, Briggs and colleagues (5) did not find any significant difference in exposure to violent trauma among females as compared with males. In line with the present study, adolescents who belonged to the poly-victimized classes (including those involving sexual abuse) were more likely to be females (41). In the present study, however, adolescents in the poly-victimized classes defined, as including threats of violence, physical assault, and bullying were more likely to be males. This is contrary to the study by Ford and colleagues but in line with other studies that found physical assault to be more prevalent among males (49).

The current findings emphasize the importance of researchers and clinicians making more careful and broad assessments of trauma exposure in children and adolescents. All professionals in the fields that concern children and adolescents need to be aware of the very likely associations between adverse life events and trauma: the Faroese adolescents who were exposed to bullying had also been exposed to physical assault, and the Faroese adolescents who were exposed to physical abuse had also been exposed to sexual abuse.

## Conclusion

Adolescents are, by definition, experiencing a developmental period during which they seek autonomy and independence. This fact may reinforce their resistance to seek help when problems arise.



Dyregrov and Dyregrov (50) found that adolescents find it difficult to seek health care; these subjects also reported that, if they do seek help, they often feel overlooked. Therefore, more effort must be made to identify those who are at risk and to offer them necessary treatment. LCA is a relatively new but important tool in epidemiologic research involving trauma exposure. Because LCAs are exploratory and empirically driven, they provide latent variables that best describe the population being studied. The present study can be said to offer a concise picture of how Faroese adolescents are exposed to trauma and what consequences that exposure has on their psychological well-being. Therefore, the results obtained here may be valuable for the national planning of preventive and interventional strategies, and they may contribute to an empirically founded economic prioritization. When the aim is to provide appropriate help and interventions to adolescents, these results demonstrate the importance of choosing trauma-informed strategies in various disciplines, such as pediatrics, child and adolescent psychiatry, social work, and school psychology.

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