

Prevalence of Sexual Dysfunction and Mental Health Disorders Among Survivors of Sexual Abuse in Hungary: Implications for Trauma-Informed Care

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Abstract

Background: Sexual abuse (SA) is a global public health concern with lasting effects on sexual and psychological well-being. While international research shows strong links between SA and adverse outcomes – such as Post-Traumatic Stress Disorder (PTSD), sexual dysfunction, and risky sexual behavior – data from Eastern Europe, including Hungary, remain limited.

Objective: This study examined the long-term sexual and psychological impacts of SA in a large Hungarian sample, focusing on gender, sociodemographic factors, and underexplored areas like gender identity and trauma disclosure.

Participants and Settings: A cross-sectional online survey was completed by 8846 young adults between September and December 2018. Participants were recruited via the university's website and social media. The target demographic consisted of young adults between the ages of 18 and 35.

Methods: Self-reports covered childhood SA history, sociodemographic data, and indicators of sexual and mental health. Statistical comparisons were made between SA survivors (n = 897; 10.1%) and non-abused participants.

Results: Survivors reported higher rates of sexual dysfunction (40.4% vs. 24.7%), earlier sexual debut (15.97 vs. 16.60 years), and more frequent risky sexual behavior (e.g., casual sex: 69.6% vs. 57.3%; all p < .001). Female survivors showed elevated rates of hypoactive sexual desire, genito-pelvic pain disorder, and orgasmic dysfunction. Gender incongruence was more common among survivors (3.2% vs. 1.0%; p < .001), especially those who had never disclosed their trauma. Disclosure was associated with fewer adverse outcomes.

Conclusion: These findings underscore the multifaceted effects of SA and reveal novel associations with gender identity and trauma secrecy in a large non-clinical Eastern European sample.

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Original Manuscript

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Availability of data and material

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Abstract

Background: Sexual abuse (SA) is a global public health concern with lasting effects on sexual and psychological well-being. While international research shows strong links between SA and adverse outcomes – such as Post-Traumatic Stress Disorder (PTSD), sexual dysfunction, and risky sexual behavior – data from Eastern Europe, including Hungary, remain limited.

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Conclusion: These findings underscore the multifaceted effects of SA and reveal novel associations with gender identity and trauma secrecy in a large non-clinical Eastern European sample.

Keywords: sexual abuse, sexual health, mental health, sexual dysfunction, gender incongruence, trauma disclosure

Background

Prevalence of sexual abuse

Sexual abuse (SA) is a pervasive global issue, with an estimated 150 million girls and 73 million boys experiencing sexual violence before the age of 18 [1]. The burden is disproportionately borne by women: around 20% of U.S. women, compared to only 1–3% of men, report a lifetime history of rape or sexual assault [2]. Similarly, childhood SA affects approximately one in five girls and 7–10% of boys globally, with most studies consistently indicating a higher prevalence among females [3]. Based on European survey results 12% of the total female population in the EU suffered sexual violence before the age of 15 which means more than 21 million women are affected [4].

Contrary to the common belief that sexual violence is perpetrated by strangers, data reveal that over 90% of victims knew their abusers [5]. Roughly 30% of offenders are relatives or individuals close to the family, and intimate partners or colleagues are frequently identified as perpetrators in adulthood [6].

Sexual health consequences

The long-term sexual health consequences of SA are substantial. Women with abuse histories report higher rates of sexual dysfunctions such as hypoactive sexual desire, difficulties with arousal and orgasm, and genito-pelvic pain disorders [7]. Abuse survivors also often face increased sexual dissatisfaction and distress, leading to strained intimate relationships. Although data on men are more

limited, male survivors may similarly experience erectile dysfunction, premature ejaculation, and compulsive sexual behavior, though findings remain inconsistent [8, 9]. Regardless of gender, SA survivors are more likely to engage in risky sexual behaviors and experience distress during sexual activity [10].

The effects of trauma on sexual health can be mediated by neurobiological and psychological mechanisms. Dysregulation of stress and sex hormones, pelvic muscle tension, disrupted attachment, and post-traumatic stress symptoms all contribute to sexual dysfunction [7]. Trauma-related PTSD has been associated with reduced arousal and satisfaction, underscoring the profound impact of SA on long-term sexual well-being. Previous studies explored prevalence of psychological, physical, and sexual abuse among transgender adolescents finding that in 73% of cases transgender participants reported psychological, 39% reported physical, and 19% reported sexual abuse in their past [11].

Mental health consequences

Beyond sexual health, SA has wide-ranging mental health implications. Survivors face significantly elevated risks of PTSD, depression, anxiety, substance use, and suicidality [12, 13]. The psychological effects are often more severe than those seen in survivors of physical abuse [14]. Internalized shame, dissociation, impaired trust, and chronic guilt frequently emerge in this population, exacerbating mental distress and social isolation [15]. Therapeutic support and stable relationships may buffer these effects, but the path to recovery is often complex and nonlinear.

Demographic Moderators

Demographic factors such as gender and age shape how abuse impacts individuals. Although women are more frequently victimized, male survivors – when they do report abuse – often display similar levels of impairment [9]. Female survivors more often experience sexual avoidance and pain, while male survivors may exhibit higher sexual compulsivity [8]. Childhood SA, particularly when experienced before puberty, is associated with more severe outcomes in adulthood due to its disruptive impact on developmental processes related to identity and sexuality [1].

While a few consistent differences in outcomes have been identified across ethnic or socioeconomic lines, disadvantaged populations may face higher abuse risk. Co-occurring risk factors such as family instability, low parental education, or lack of support further increase vulnerability to both victimization and long-term harm [16].

The Hungarian Context

Despite growing international literature on the impacts of SA, data from Central and Eastern Europe remain sparse. Data reported from the Balkans underline that Sexual abuse in the region is a serious, multi-layered issue – among 11- to 16-year-olds in nine countries, lifetime prevalence of sexual

violence ranged from about 7.6% in FYROM to 18.6% in Bosnia – compounded by mass wartime sexual violence in the 1990s, including an estimated 20,000 - 50,000 Bosnian women and girls subjected to rape during the Bosnian War [17]. In Hungary, reporting rates of sexual violence are notably low. NGOs estimate that only 0.24% of rape incidents result in legal proceedings [18], which significantly hampers visibility and public awareness. A 2011 study across four Eastern European countries reported that 41% of SA victims were under the age of 12 [19]. More recent Hungarian data indicate that 28% of women aged 18–74 had experienced sexual or physical violence since age 15, with 7% reporting rape by an intimate partner [18]. Given the widespread underreporting and limited local data, further research is essential to illuminate the prevalence and consequences of SA in Hungary.

Objective

This study aims to address this gap by examining the long-term sexual and psychological effects of sexual abuse in a large, non-clinical Hungarian sample. Specifically, it explores the associations between SA and various sexual and mental health outcomes, with attention to underexamined domains such as gender incongruence and trauma disclosure. By comparing survivors and non-abused individuals on multiple dimensions – including sociodemographics, sexual behavior, and psychological distress – this research offers a comprehensive assessment of how SA shapes adult well-being in a regional context with limited prior empirical data.

Methods

Acknowledgments

Ethics permission for this research was obtained from the Ethics Committee, Albert Szent-Györgyi Health Centre, University of Szeged. Reference number: 161/2017-SZTE.

Participants

For data collection purposes we used an online survey form targeting participants between the age of 18 and 35 based on the assumption that most possible somatic and mental health consequences of sexual abuse have already developed and appeared by the given age [19]. Minors were excluded from the study based on ethical grounds. It was also our goal to provide a sample with homogeneity in terms of life stage of the participants. Platforms used for the survey were social media advertisements and online university community websites meaning that all participants were required to have internet access and basic computer handling skills. By using this method, we ensure full anonymity for all respondents, and data collection was conducted with informed consent. Participants over the age of 35 and all responses with unrealistic figures (e.g., unrealistic age at first sexual intercourse, etc.) were excluded from the dataset.

Materials

The questionnaire used in this study included questions about the participants' sociodemographic characteristics (gender, age, place of residence, status of education and work, structure of original family, religion, parental education level, sexual orientation). In most questions participants could choose between single options, but the question of age could be answered by using digits freely. The questionnaire also examined the respondents' sexual history including factors such as age at the first consensual sexual intercourse, quality of first consensual sexual experience (on a scale of 1 to 10) and exposure to pornography (age, frequency). The tool also surveyed factors of current sexual behavior such as relationship status, frequency of sexual intercourses, occurrence of sexual infidelity in relationships, risky sexual behavior (casual sexual relationships), number of sexual partners, as well as possible health related consequences of risky sexual practices: occurrence of unplanned pregnancies, implementation of abortions, prevalence of Sexually Transmitted Disorders (STD) and prevalence of high-risk Human papillomavirus (HPV) infection. Mental health factors such as satisfaction with one's sexual life, appearance of body and genitals, ability to connect with other people for sexual and non-sexual purposes and ability to share sexual experience or difficulties verbally with peers were included in our survey as well. A set of questions was designed to explore the presence of gender incongruence in a person and the potential psychological strain (subjective suffering) related to one's gender identity and sexual orientation. Finally sexual dysfunctions were examined in detail using targeted questions for DSM-5 criteria A and B (presence of leading symptoms for a minimum period of 6 months). In our study, only DSM diagnostic criteria A and B were applied, as the survey was non-clinical in nature. Criterion C, which requires evidence of clinically significant distress or impairment in social, occupational, or other important areas of functioning, was excluded due to its inherently subjective nature and the fact that its assessment falls within the competence of trained clinicians. Respondents in a self-report survey are not adequately positioned to make such determinations. The following sexual dysfunctions were measured: paraphilic interest in both sexes, sexual desire disorder in both females and males, orgasmic disorder in females, genito-pelvic pain disorder in females, erection disorder in males, premature ejaculation in males, and we also surveyed the frequency of masturbation in both sexes. Most importantly the questionnaire contained questions about whether the respondent suffered any form of sexual abuse. The survey also asked respondents to report the perpetrator's identity and to indicate whether they later disclosed the abuse to anyone. In the context of this study, sexual abuse is defined broadly as any unwanted or inappropriate sexual act or exposure that occurs without the full, informed, and voluntary consent of the individual. This includes both contact forms (e.g., forced touching,

penetration, coercive sexual acts) and non-contact forms (e.g., exposure to sexual content, voyeurism, verbal sexual harassment). The definition encompasses physical violations as well as psychologically harmful experiences that involve sexual coercion, manipulation, or boundary violations, regardless of whether physical force was used. Importantly, this broad definition reflects a trauma-informed perspective, acknowledging that the detrimental consequences are not limited to physical assault [20].

Design

Regarding statistical analyses categorical variables were analyzed using Pearson's chi-square tests, while continuous variables were assessed with Mann-Whitney U-tests. Effect sizes (e.g., OR with 95% confidence intervals) were calculated to interpret group differences. We originally measured several specific paraphilic interests. However, due to low case numbers for individual paraphilias, we combined all paraphilic interests into a single composite variable for analysis. We also gathered data on different sexual dysfunctions, and in our analysis, we examined both individual dysfunctions and combined measures. Most common health issues in our sample were female orgasm disorder (1252 people, 22.5% of female participants), female genito-pelvic pain disorder (741 people, 13.3% of female participants), STD infections (1084 people, 12.3% of all participants) and premature ejaculation (276 people, 3.1% of male participants). We used DSM criteria A and B only and our questionnaire focused on mapping certain symptoms and limitations of sexual functioning rather than setting up a diagnosis.

Procedure

The online data collection took place between September and December 2018 using Google Forms providing strictly anonymous data from all participants by Google in line with its policies and procedures. Participants were recruited through a Facebook advertisement and a sweepstakes incentive. To maintain anonymity, both the questionnaire and the sweepstakes were hosted on a separate, independent web platform. In total, 9441 individuals completed the online survey during the data collection period. 595 responses were excluded from the sample due to exceeding the age limit of 35 or by giving unrealistic figures in their responses. All respondents who stated that they had been victims of sexual abuse were selected in the study group and all others formed the control group. In the first part of our analysis, we compared the study and the control group in terms of sociodemographic variables. In the second part, the groups were compared on physical, mental, and sexual health factors. Pearson's chi-square test was applied to analyze categorical variables, and Fisher's exact test was used when expected cell counts were low. For continuous variables, the Mann-Whitney U-test was employed. A significance level of $p < .05$ was used throughout the

analyses.

Results

Sociodemographic characteristics and family background of the respondents (Table 1)

The sociodemographic characteristics of the participants (N=8846) are described below. The mean age of the participants was 22.10 (SD=3.42). Based on self-reported biological gender, female participants (67.9%) were overrepresented in the sample compared to male participants (32.1%). In terms of residence, 9.1% of respondents lived in the capital, 16.7% were residents of major cities, 49.1% lived in smaller cities, 23.1% lived in small towns or villages, and 2% lived in remote rural areas. Regarding occupation, 37.6% of the participants were students, 35.7% were working, 22.5% were both students and employed, 3.5% were on parental leave, and only 0.6% of the respondents were unemployed. Only 16.3% of the respondents had a child at the time of answering the questionnaire. In terms of ethnicity 97.2% of the respondents considered themselves Hungarian and 2.8% were part of a non-Hungarian ethnic group. Regarding religion 71.9% of the participants reported no religious affiliation, and 27.8% identified as Christian. In summary, majority of the respondents are part of Hungarian ethnicity, female dominance is present in the sample, and most of them lived in cities, did not consider themselves religious, and were in their early twenties.

Participants' family background is summarized as follows. Regarding their childhood family structure 83.0% grew up with two family caretakers (parents, grandparents, foster parents) present, 16.5% were raised by a single parent, grandparent or other relative, and 0.5% were brought up in state foster care. In 40.4% of cases the parents had a divorce during the participants' childhood. Regarding the father's education, 10.4% stated that their father had a low level of education, 68.6% reported a medium level of education (high school or technical school), and 21.0% claimed that their father had a high level of education (college or university). In terms of the mother's education, 11.7% reported a low level of education, 60.7% reported a medium level of education, and 27.6% reported a high level of education on the mother's side. In summary, the majority of participants were raised in two-parent households, and secondary education was the most prevalent level of education among their parents.

Sexually abused study group description (Table 2)

The sociodemographic characteristics of the sexually abused group (N=897) are presented below. Among our participants 897 respondents (10.1%) stated that they had been a victim of sexual abuse throughout their lives. Most victims in our sample were sexually abused at the age of 17. The average age when the sexual abuse took place was 14.58 (SD=5.42). In most cases the perpetrator was the victim's relationship partner (32.4%). Another person known to the victim committed the

abuse in 32.2% of cases. In a significant number of cases (22.1%) a family member was the abuser, and in 13.3% of the cases the perpetrator's identity was unknown. Majority of the abuse victims (73.1%) were able to share the fact of the abuse with another person. 12.5% of the victims felt that their sexual needs exceed the average, 10.4% of abused participants described their sexual life as joyless, 7.8% experienced sexual desire but refrained from sex, 3.9% found it difficult to trust their sexual partner, 0.9% reported no sexual desire. Contrary to expectations, 61.4% of the sexually abused participants stated that they believed the abuse had no effect on their current sexual behavior.

Sociodemographic comparison of the study and the control group (Table 2)

It was found that gender is a strong differentiating factor between sexually abused and sexually non-abused groups ($\chi^2(1)=301.968$; $p<.001$; Cramer's V value: 0.185). While women made up the majority of the overall sample, they were even more overrepresented in the sexually abused group. Prevalence of sexual abuse was significantly lower among Christian participants compared to those with other or no religious affiliation ($\chi^2(2)=19.010$; $p<.001$; Cramer's V value: 0.047). Parental divorce was significantly more common in the sexually abused group compared to our control group ($\chi^2(1)=44.321$; $p<.001$; Cramer's V value: 0.071). In terms of the family structure in which the participant grew up there is also a significant difference between the sexually abused and not abused groups. Being raised by a single caretaker or in state foster care was significantly more common in the sexually abused group compared to being raised in the traditional two-parent family ($\chi^2(2)=33.286$; $p<.001$; Cramer's V value: 0.061). The difference in the father's education level is significant between the sexually abused and not abused groups ($\chi^2(2)=9.387$; $p=.009$; Cramer's V value: 0.033), the difference is also significant in the mother's education level ($\chi^2(2)=13.947$; $p<.001$; Cramer's V value: 0.040), low level of education of either parent is more common in the sexually abused group. We found no significant differences between the study and the control group in terms of ethnicity, status of employment, and place of residence. In terms of sexual orientation, we found that significantly more individuals identified as non-heterosexual in the sexually abused group compared to the control group ($\chi^2(3)=95.852$; $p<.001$; Cramer's V value: 0.104).

Comparing the somatic and mental health status of the sexually abused and sexually non-abused groups (Table 3)

It was found that STDs were significantly more common among sexually abused victims compared to the control group ($\chi^2(1)=43.025$; $p<.001$; Cramer's V value: 0.070). High-risk HPV infection was also significantly more common among the sexually abused participants ($\chi^2(1)=23.317$; $p<.001$; Cramer's V value: 0.056). Even though non-heterosexuals were overrepresented in the sexually abused group, no statistically significant difference could be detected in terms of dissatisfaction with

one's sexual orientation among non-heterosexual abused and non-abused respondents. A significantly higher rate of gender incongruence — defined as a mismatch between gender identity and biological sex — was found among sexually abused participants ($\chi^2(1)=30.885$; $p<.001$; Cramer's V value: 0.059). Sexually abused participants reported talking significantly more about their sex life than non-abused respondents ($\chi^2(1)=4.387$; $p=.036$; Cramer's V value: 0.022). There was also a significant difference in the age of the first sexual intercourse between the sexually abused and non-abused groups ($U=2547676$; $p<.001$). On average, individuals with a history of sexual abuse initiated sexual activity at the age of 15.97 years ($SD=2.09$) while those without such history became sexually active at 16.60 years ($SD=2.08$). The first sexual experience was also rated as significantly more positive by the non-abused participants ($U=2311954$; $p<.001$). Relationship infidelity had a significantly higher prevalence in the sexually abused group compared to the control group ($\chi^2(3)=93.299$; $p<.001$; Cramer's V value: 0.103) as well as casual (short-term) sexual encounters were also more frequent among sexually abused individuals ($\chi^2(1)=47.667$; $p<.001$; Cramer's V value: 0.076). Regarding the number of sexual intercourse per month there was a significant difference between sexually abused and non-abused participants. In the sexually abused group, the number of sexual intercourse events per month was higher compared to the control group ($U=3798735$; $p<.001$). The sexually abused group reported a significantly higher number in terms of the number of casual sexual partners in the past year ($U=3782038$; $p<.001$). Unplanned pregnancy was also significantly more frequent among sexually abused women compared to the control group ($\chi^2(1)=82.507$; $p<.001$; Cramer's V value: 0.122). Sexually abused people were significantly less satisfied with their own sexual attractiveness ($U=3361941$; $p=.005$), body ($U=2999290.5$; $p<.001$), and genitals ($U=3222438.5$; $p<.001$). No statistically significant difference could be detected between the sexually abused and non-abused groups in terms of how easy people find to connect with others (both for friendship and relationship purposes), having an abortion and overall satisfaction with current sexual life and the age of first porn exposure.

Comparing the sexual health of the sexually abused and non-abused groups (Table 4)

We present the differences in sexual health and the prevalence of sexual dysfunctions and paraphilic interests in the sexually abused and non-abused groups. First, the incidence of sexual dysfunction in aggregated terms is to be analyzed, then the data is to be broken down into male and female sexual dysfunctions. We found that sexual dysfunctions were significantly more common in the sexually abused group ($\chi^2(1)=101.805$; $p<.001$; Cramer's V value: 0.107; OR=2.10; 95% CI [1.79-2.38]; $p<.001$). In other words, there is a 2.1 higher likelihood of sexual dysfunction among sexually abused people. No significant difference could be identified in terms of paraphilic interest between

the study and the control groups.

Comparing the sexual health of the sexually abused and sexually non-abused female groups (Table 5)

The prevalence of any sexual dysfunction was significantly higher among sexually abused female participants compared to sexually non-abused counterparts ($\chi^2(1)=43.410$; $p<.001$; Cramer's V value: 0.088; OR=1.66; 95% CI [1.42-1.93]; $p<.001$) indicating a 1.6-fold increase in the odds of sexual dysfunction. Frequency of masturbation was significantly lower in the sexually abused group ($\chi^2(3)=25.183$; $p<.001$; Cramer's V value: 0.073). Hypoactive sexual desire was also more common among sexually abused women ($\chi^2(1)=13.723$; $p<.001$; Cramer's V value: 0.048; OR=1.58; 95% CI [1.24-2.01]; $p<.001$) indicating a 60% increase in odds. The prevalence of vaginismus was significantly higher as well ($\chi^2(1)=41.010$; $p<.001$; Cramer's V value: 0.086; OR=1.89; 95% CI [1.53-2.25]; $p<.001$), suggesting nearly twice the odds of experiencing vaginismus symptoms. Orgasmic dysfunction was more frequent in abused women ($\chi^2(1)=22.329$, $p<.001$, OR=1.49; 95% CI [1.26-1.76]; $p<.001$).

Comparing the sexual health of the sexually abused and sexually non-abused male groups (Table 6)

Examining the prevalence of any sexual dysfunction among sexually abused male participants it was found that there is no significant difference between the sexually abused and non-abused groups in terms of sexual dysfunctions such as erectile disorder, male hypoactive sexual disorder, premature ejaculation, and in terms of masturbation frequency. Notably, male participants were underrepresented, which limited our power to detect significant differences in that subgroup.

Effect of age at abuse, identity of perpetrator and sharing the trauma on the severity of psychological and physical consequences (Table 7)

We examined how key characteristics of the abuse influence the severity of its consequences. Gender incongruence was found to be significantly more common among sexually abused participants who did not disclose their trauma, compared to sexually abused respondents who talk about their trauma ($\chi^2(1)=12.228$; $p<.001$; Cramer's V value: 0.116). Unplanned pregnancies are also significantly more common among sexually abused people who do not talk about their trauma ($\chi^2(1)=6.194$; $p=.013$; Cramer's V value: 0.087). There were no significant differences in the prevalence of any sexual dysfunction and abortion between the two groups. Similarly, no significant differences in age at the time of abuse were found between the following subgroups of sexually abused participants: those with and without gender incongruence; those with and without sexual dysfunction; women with and without unplanned pregnancy; and women who had an abortion compared to those who did not.

Discussion and Conclusions

When viewed in the context of international literature, our findings are broadly consistent with global evidence linking SA to adverse sexual and mental health outcomes, while contributing data from large, non-clinical, Central and Eastern European sample. Meta-analyses and large-scale population-based studies from North America, Western Europe, and Australia typically include total samples of several hundred to a few thousand participants with SA survivor subsamples often numbering fewer than 500 [10, 21, 22]. In our study, the SA subgroup comprised 897 survivors, providing greater statistical power for subgroup analyses- such as exploring gender differences, the role of disclosure, and associations with gender incongruence- which are rarely investigated simultaneously in large-scale surveys.

Our results are consistent with the international literature: among women with a history of sexual abuse (SA), decreased sexual desire, orgasmic difficulties, and genito-pelvic pain were significantly more common, with odds ratios ranging from 1.5 to 1.9, in line with previous large-scale reviews [21, 7, 22]. The specific contribution of our study lies in demonstrating the same pattern in a large, non-clinical, Central and Eastern European sample (N=8846; SA n=897), which is rare in the region. In men, our survey did not find significant increase in sexual dysfunction. This likely reflects both underrepresentation of male participants and the tendency toward underreporting, as has been noted in earlier work [8]. The lack of data on male survivors highlights the persistent challenge of stigma and the importance of more inclusive sampling strategies, particularly given evidence that similar long-term consequences can be expected as among female survivors [9].

Novel Findings: Gender Identity and Trauma Disclosure

Beyond confirming previously observed associations, this study highlights two underexplored dimensions in SA research: gender identity distress and the impact of trauma disclosure.

We found a significantly higher prevalence of gender incongruence among survivors – particularly those who had never disclosed their trauma. While previous research has connected sexual trauma to identity confusion [24, 11], our study is among the first to identify disclosure as a potential moderating factor. This suggests that secrecy may intensify internal conflict about gender identity, potentially contributing to dysphoria in some survivors. Our findings on gender incongruence and its link to non-disclosure are particularly novel when situated against global evidence as few large-scale studies have been able to quantify this relationship in a general population sample, especially outside of clinical contexts.

Trauma disclosure also appeared to serve a protective role. Survivors who shared their experiences were less likely to report gender incongruence and unplanned pregnancies. These results support theories highlighting the buffering effect of social support in reducing the psychological burden of

trauma [7]. Our findings address a gap in the international literature, which to date has demonstrated associations only between negative social reactions and poorer psychological outcomes, without identifying positive social reactions as protective factors [25]. The implications for trauma-informed care are clear: fostering safe, non-judgmental environments that facilitate verbalization of abuse may help mitigate long-term psychological harm [26].

Risk Factors: Family Instability and Religiosity

Our findings indicate that individuals from non-traditional family backgrounds – particularly those who experienced parental divorce or grew up in single-parent households or foster care – are more likely to have been abused. While causality cannot be inferred, family instability likely heightens vulnerability through reduced supervision and weakened protective boundaries [16].

We also found lower rates of religiosity among survivors. This finding should be interpreted with caution, as multiple explanations are possible. Religious communities may, in some cases, provide protective social structures or discourage certain risk behaviours [27]. Conversely, some survivors may distance themselves from religion, particularly if the abuse occurred within a religious setting or was associated with moral conflict or guilt [28]. Religious norms may also discourage disclosure, prolonging psychological distress [29]. These complex and context-dependent dynamics warrant further study.

Methodological Contributions

This study is among the largest of its kind conducted in Central and Eastern Europe and the first to examine SA in depth within a Hungarian population, thereby addressing a geographical gap in the literature. Using an anonymous online format allowed the collection of sensitive information from over 8800 young adults -including not only abuse and dysfunction but also on less frequently studied domains such as genital satisfaction, frequency of masturbation, and gender incongruence.

Our broad inclusion criteria and population-based sampling offer a nuanced view of how sexual abuse impacts not just clinical patients but the wider public. The integrative approach – considering mental, physical, and sexual health in a single analysis – offers insights that complement existing research.

Limitations

The study has some inherent limitations. Most notably, the sample was predominantly female, limiting the ability to detect statistically robust patterns among male survivors. As in all self-report studies, bias may arise from underreporting or misunderstanding of terms. The cross-sectional design prevents causal inferences, particularly regarding the links between abuse, identity, and health outcomes.

Cultural factors specific to Hungary, such as limited sex education and extremely low rape prosecution rates [18], may also influence the generalizability of the findings. Despite this, the patterns observed align with broader global trends, suggesting their relevance beyond the national context.

Implications for Practice and Research

The findings underline the urgent need for more trauma-informed sexual and mental health services in Hungary and similar regions. Practitioners should be alert not only to overt dysfunctions but also to more subtle indicators of trauma, such as dissatisfaction with genital appearance or identity confusion.

Clinicians should also proactively encourage trauma disclosure in safe settings, recognizing that verbalization may reduce distress and protect against further harm. Special attention is warranted for patients reporting gender incongruence, as these may indicate an unspoken history of sexual abuse. Care must be taken, however, not to imply a direct causal link between abuse and gender incongruence, as many individuals with non-normative identities have not experienced trauma [30].

Survivors frequently report body dissatisfaction, including with their genitals – factors that may drive interest in cosmetic interventions [31]. This suggests that trauma-informed screening could be a useful addition in aesthetic or reconstructive surgical settings.

From a public health perspective, the study's identification of risk markers – early sexual debut, multiple partners, unplanned pregnancies, STDs, and family instability – can help clinicians screen for potential abuse histories and intervene earlier.

Finally, male victims remain significantly underrepresented in both research and clinical care. Proactive efforts to support disclosure and participation among men are essential. Similarly, the complex role of religion in both risk and recovery deserves deeper exploration.

Future Directions

To build on these findings, future research should aim for more gender-balanced samples and longitudinal designs that clarify the developmental pathways linking SA to long-term outcomes. Qualitative studies could provide deeper insights into how survivors make sense of their identities, bodies, and relationships after trauma, especially in cultural contexts where such topics remain stigmatized.

Longitudinal cohort studies following survivors from adolescence into adulthood would help specify the timing, activating triggers, and potential mediating factors of both sexual and psychological outcomes. Such designs could also explore whether certain protective factors – such as early disclosure, access to trauma-informed care, or supportive peer networks – moderate the severity of

adverse effects.

Future work should also address male survivors more systematically. This includes the development of recruitment processes specifically targeting male survivors and examination of potential gendered differences in coping styles, disclosure willingness and help-seeking strategies. Studies should be attentive to non-binary and transgender survivors in order to make it possible to understand unique relations that are not yet well understood.

Given the novel observation of the association between non-disclosure and gender incongruence, it would be ideal to use qualitative interview techniques to map the psychological mechanisms involved, such as internalized stigma, identity concealment, or altered body schema. Intervention-based studies could test whether structured disclosure opportunities – such as peer support groups or anonymous online platforms – improve mental health outcomes, reduce body dissatisfaction, or support identity integration.

Cross-cultural comparisons would also be valuable, especially between countries with differing levels of sex education, legal protections, and cultural attitudes toward sexuality and abuse. Such studies could determine whether patterns observed in Hungary are universal, regional-specific or country-dependent, and could help refine prevention strategies for different communities across Europe.

Finally, expanding research beyond the health sector to include education, criminal justice, and religious institutions could reveal structural factors that either aggravate harm or facilitate recovery. Interdisciplinary collaborations – linking psychology, sociology, public health, law, and education – may be essential in generating integrated, survivor-centered policy recommendations.

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Supplementary Files

Multimedia Appendixes

All tables.

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