

Association between Identity Dimensions and History Sexual Abuse among Rwandan adolescents: A Case-Control study

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Abstract

Background

Adolescent sexual abuse can profoundly impact psychological development, including identity formation, yet there is limited research in African contexts. This study aimed to explore how different levels of identity dimensions (low, moderate, high) are associated with the likelihood of reporting a history of sexual abuse.

Methods

A case-control study design was conducted with 746 girls aged 10-19 years, evenly divided between sexually abused (case group) and non-sexually abused adolescents (control group). Cases were selected from Isange One-Stop Centres, and controls were recruited from secondary schools in Rwanda. Data on socio-demographics and identity dimensions were collected. Group differences were analysed using Chi-Square test; and logistic regression was employed to determine independent association's predictor variables.

Results

No significant group differences were observed in socio-demographic variables ($p > 0.05$). Teen motherhood was reported exclusively in the case group (22.9%), with 1.9% of the case group pregnant and 5.4% reporting a history of abortion. Adolescents with a history of sexual abuse were more likely to score high on identity diffusion (AOR = 7.55, 95% CI: 5.11–13.92), foreclosure (AOR = 4.81, 95% CI: 2.87–7.95), and moratorium (AOR = 2.21, 95% CI: 1.30–3.93). They were also more likely to report moderate or high levels of exploration in depth, commitment making, and identification with commitment.

Conclusion

Sexual abuse is significantly associated with disruptions in identity development, including heightened diffusion, foreclosure, and altered exploration processes. Adolescents with a history of sexual abuse exhibit a premature identity characterized by commitment without sufficient exploration. These findings underscore the need for targeted interventions to support identity development and address the psychological impacts of trauma in adolescents.

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Keywords: Identity dimension, identity status, teen pregnancy, teen mother, abortion, sexual abuse.

Introduction

Child and adolescent sexual abuse (CASA) is a pervasive global issue with profound consequences for victims' physical, cognitive, developmental, and psychosocial well-being.[1] The terms "child sexual abuse (CSA)" and "adolescent sexual abuse (ASA)" refer to abuse experiences in different age groups, with CSA applying to children under 12 years and ASA to adolescents aged 10 to 19 years.[2] Globally, the prevalence of CASA is particularly high in Africa and Asia with rates of 24% among Africans under 15 years and 41% among Asians under 18 years.[3] Evidence highlights that females are disproportionately affected, with 1 in 5 girls and 1 in 13 boys reporting sexual abuse before the age of 18.[4] In Rwanda, ASA prevalence was estimated at 12% for females and 5% for males aged 13 to 17 in 2017, reflecting a significant societal burden.[5] Despite these alarming statistics, the impacts of sexual abuse on key developmental processes, such as identity formation, remain underexplored in African contexts.[4]

Adolescence is a pivotal period for identity development, as outlined by Erik Erikson's psychosocial development theory, which emphasizes the balance between role confusion and identity construction.[6] During this stage, adolescents explore personal values and commitments, influenced by both internal motivations and external societal expectations. However, exposure to trauma, such as sexual abuse, disrupts this process, leading to challenges in identity development.[7–9] Adolescents who experience trauma may struggle with self-blame, detachment, and social withdrawal, which can hinder exploration and commitment in identity formation.[10] Empirical evidence links adolescent trauma to identity problems, with studies reporting associations between exposure to domestic violence,[11] sexual abuse,[12] physical neglect,[13] as well as war,[14] and disruptions in identity statuses and dimensions.

Research on identity development often draws from Marcia's identity status model, [15] which categorizes identity into four statuses: diffusion, foreclosure, moratorium, and achievement. Diffusion represents a lack of both exploration and commitment, often associated with maladaptive behaviours and psychological distress. Foreclosure involves adopting values without exploration, while moratorium reflects active exploration without commitment. Achievement, the most adaptive status, is characterized by high exploration and commitment, fostering stability and well-being. Luyckx's model[16] complements Marcia's framework by examining identity dimensions, such as exploration in breadth, exploration in depth, commitment making, identification with commitment, and ruminative exploration. These dimensions reflect the dynamic processes of identity formation, ranging from initial information gathering (exploration in breadth) to reflective evaluations of commitments (exploration in depth) and the comfort associated with identity commitments (identification with commitment). Conversely, ruminative exploration is a maladaptive process that delays or impedes identity formation.

Despite these theoretical frameworks, few studies have explored how sexual abuse influences both identity statuses and dimensions in adolescents. This gap is particularly evident in African contexts, where the interplay between trauma and identity development remains underexamined. The current study addresses this gap by investigating the associations between identity statuses and dimensions and a history of sexual abuse in Rwandan adolescents. Specifically, it examines how identity processes differ between adolescents exposed to sexual abuse (case group) and their non-exposed peers (control group). Based on prior evidence and theoretical models, we hypothesized that the group of Adolescents exposed to sexual abuse would exhibit higher levels of identity diffusion, foreclosure, and ruminative exploration, alongside lower levels of exploration in breadth, exploration in depth,

and identity achievement, compared to non-exposed adolescents. This study seeks to provide valuable insights into the developmental impacts of sexual abuse, informing targeted interventions and policies to support the identity development and psychological well-being of sexually abused adolescents in Rwanda.

Method

Study design and setting

A case-control study was conducted to examine whether adolescent sexual abuse leads to identity problems. The study covered the whole country through a representative sample of cases and controls.

Study population and sample size

The study participants were both the abused (cases) and non-abused (controls) adolescents. For the cases, the sampling frame was based on the data provided by Rwanda Health Management Information System (HMIS).[17] The HMIS indicated that 5,792 adolescents had been sexually abused in Rwanda: 3,196 in 2020 and 2,596 in 2021. Among those, 266 were no longer aged 19 years at the time of data collection, and therefore they were not eligible. Accordingly, the study target population was 5,526 sexually abused adolescents. Yamane’s formula,[18] was applied to get a representative sample from the population as follows:

$$n = \frac{N}{1+N(e)^2} = \frac{5526}{1+5526(0.05)^2} = 373$$

abused adolescents, where n is the sample size, N is the population size and e is the level of precision or margin of error (0.05). Consequently, sample size of 373 sexually abused adolescents was drawn from the population from 44 Isange One Stop Centres (IOSCs) located across the country. IOSCs were specifically selected because they are a pioneering initiative in Rwanda that provides holistic services to victims of gender-based violence, including sexual abuse. These centres are strategically located within hospitals across the country,

making them accessible and a primary point of contact for adolescents seeking help after experiencing sexual abuse. On the other hand, the control group of 373 non-sexually abused adolescents were obtained from five secondary schools located in 4 provinces of Rwanda and Kigali City.

Sampling procedures, inclusion and exclusion criteria

The inclusion criteria were being an adolescent victim of sexual abuse, aged from 10 to 19 years, and being able to complete the questionnaire. The participants were excluded if they had serious mental health problems. Practically, randomization was conducted only at the Isange One Stop Centres (IOSCs). From each of the 44 IOSCs, a list of eligible adolescents who had accessed services was compiled. Using this list, 8–9 participants were randomly selected from each centre. Randomization was implemented in Excel, where each individual was assigned a random number using the =RAND() function. The list was then sorted in ascending order based on these random numbers, and the required number of participants for each centre was selected sequentially from the top of the list. This method ensured that the selection process was unbiased and adhered to the principle of random sampling.

For the control group, students from secondary schools were selected using a matching approach. The sociodemographic characteristics of the cases such as age category and education level were used as criteria for matching. From the five selected schools, eligible students within the same age range and educational levels as the cases were identified. This process ensured that the control group closely matched the cases in key sociodemographic variables, minimizing potential confounding effects. Randomization was not applied for the controls, as matching took precedence to ensure comparability between the groups. Hence, the total sample size for the study was 746 adolescents, divided into two the groups. By combining random selection for the cases at the IOSCs with

sociodemographic matching for the controls in secondary schools, the study achieved a balanced and representative sample.

Data collection tools

Extended Objective Measure of Ego-Identity Status II (EOM-EIS-II)

EOM-EIS-II was developed by Adams et al., [19] to measure the formation of identity based on Marcia's Theory through the four types of identity status "identity achievement, identity moratorium, identity foreclosure and identity diffusion". EOM-EIS-II has 64 questions and is ideal for our study as it offers a comprehensive assessment of identity formation, spanning ideological (personal identity) and interpersonal domains (social identity), essential for understanding the complex identity development in adolescents. The ideology domain has eight items connected to employment (8 items), religion (8 items), politics (8 items), and life philosophy (8 items), whereas the interpersonal domain contains eight items related to friendship (8 items), recreation (8 items), dating (8 items), and gender roles (8 items). Identity achievement, identity moratorium, identity foreclosure, and identity diffusion are all items in both domains that measure the four identity statuses proposed by Marcia. Each domain contains 32 entries and four sub-categories. This instrument also employs a six-point Likert Scale to assess respondents' identification status, with responses ranging from strongly disagree (1) to strongly agree (6). The internal consistency for each domain ranges from 0.6 to 0.86 in the current study and is comparable to the prior study.[20]

The Dimensions of Identity Development Scale (DIDS)

The DIDS was composed of 25 items to evaluate five subscales corresponding to 5 dimensions of identity according to Luyckx.[21] The DIDS is particularly suited for this study as it offers a more nuanced exploration of the identity formation process by distinguishing between different types of exploration and commitment, which are central to understanding the dynamics of identity development.

The participants rated each item on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). The internal consistency for exploration in Breadth subscale, Commitment Making, Exploration in Depth, Identification with Commitment and Ruminative Exploration subscales were respectively $\alpha=0.77$, $\alpha=0.85$, $\alpha=0.62$, $\alpha=0.80$, and $\alpha=0.84$. This tool's reliability was comparable to that of a prior study.[22]

Data Analysis

The data were analysed using SPSS version 28 to explore the association between identity dimensions and history of sexual abuse in a case-control framework. Identity dimensions, initially measured as continuous variables, were categorized into three levels (low, moderate, high) based on percentile cut-offs: scores below the 33rd percentile were classified as low, those between the 33rd and 66th percentiles as moderate, and those above the 66th percentile as high. This allowed for meaningful comparisons between the case (history of sexual abuse) and control (no history of sexual abuse) groups.

Crosstabs were used to explore the distribution of identity dimensions across the case and control groups, with Pearson Chi-Square tests employed to assess statistical significance ($p < 0.05$). Logistic regression analysis was conducted to quantify the relationship between identity dimensions and the likelihood of being in the case group. Unadjusted Odds Ratios (UORs) were calculated to measure crude associations, while Adjusted Odds Ratios (AORs) accounted for potential confounders such as age and socioeconomic status. The dependent variable, history of sexual abuse (1 = case, 0 = control), was analysed in relation to identity dimensions (independent variables), with the low category serving as the reference group. Odds ratios and 95% confidence intervals were used to interpret results, examining how different identity dimensions are associated with the likelihood of reporting history of sexual abuse.

Statistical assumptions, including model fit and multicollinearity, were evaluated to ensure the robustness of the findings.

Ethical considerations

Ethical clearance for the study was issued by the Institutional Review Board of the College of Medicine and Health Sciences (CMHS/IRB/367/2021). Written informed consent was secured from the parents or guardians of all adolescent participants, in line with ethical guidelines for research involving minors. Additionally, adolescents aged below 18 years (i.e., 10-17 years) signed an assent form to affirm their active agreement to participate in the study, ensuring that their autonomy was respected while maintaining parental or guardian oversight. Consent was also granted by parents or guardians of the adolescents. Participation in the study was entirely voluntary, and all participants were informed of their right to withdraw from the research at any time without consequences or impacts on their access to services. Confidentiality and anonymity were strictly upheld, with all data securely stored to prevent unauthorized access.

Results

Sample characteristics

The study participants were 746 girls composed of two groups, sexually abused adolescents (373, 50.0%) and non-sexually abused (373, 50.0%). Although most of the girls in the case group were in the age category of late adolescents (25%) and middle adolescents in the control groups (41.8%), there was no significant difference in the age category between the groups (p=0.085). Regardless of the group, most of the respondents were in the age group of middle adolescents (65.0%) and the minority were from the early adolescent group (5.0%). All the teen mothers accounted for 22.9% of the total study sample and they were all from the case group. Likewise, 1.9% of the study sample from among the cases, were still pregnant at the time of the study. Notably, it was found that 5.4% of adolescents had a history of abortion and were all from the case group (Table 1).

Table 1. Cross-tabulation of socio-demographic variables between case and control group (N=746)

Variables		Case	Control
		n (%)	n (%)
Adolescent sub-stage	Early Adolescent	13(1.7)	24(3.2)
	Middle Adolescent	173(23.2)	312(41.8)
	Late Adolescent	187(25.0)	37 (5.0)
Teen Mother	No	202(27.1)	373(50.0)
	Yes	171(22.9)	0 (0.0)
History of abortion	No	333(44.6)	373(50.0)
	Yes	40(5.4)	0(0.0)
Teen pregnancy	No	359(48.1)	373(50.0)
	Yes	14(1.9)	0(0.0)

Distribution of identity-related variables among participants with and without a history of sexual abuse

Table 2 presents the distribution of identity-related variables among participants with and without a history of sexual abuse. Significant associations with sexual abuse were observed across all measured identity dimensions (p < 0.001).

Table 2. Distribution of identity-related variables among participants with and without a history of sexual abuse

Identity-related variables	Score Level	History of Sexual Abuse				Chi-square	P-value
		Case group	%	Control group	%		
Identity diffusion	Low	41	16.7	205	83.3	180.05	p<0.001
	Moderate	153	57.7	112	42.3		
	High	179	76.2	56	23.8		
Identity foreclosure	Low	63	24.5	194	75.5	121.21	p<0.001
	Moderate	131	53.5	114	46.5		
	High	179	73.4	65	26.6		
Identity Moratorium	Low	54	22.9	182	77.1	103.74	p<0.001
	Moderate	148	59.2	102	40.8		
	High	171	65.8	89	34.2		
Identity Achievement	Low	64	27.4	170	72.6	70.03	p<0.001
	Moderate	153	59.8	103	40.2		
	High	156	60.9	100	39.1		
Exploration in Breadth	Low	101	37.3	170	62.7	30.54	p<0.001
	Moderate	133	61.6	83	38.4		
	High	139	53.7	120	46.3		
Commitment Making	Low	77	30.4	176	69.6	81.07	p<0.001
	Moderate	177	70.5	74	29.5		
	High	119	49.2	123	50.8		
Exploration in Depth	Low	93	35.2	171	64.8	63.41	p<0.001
	Moderate	181	69.1	81	30.9		
	High	99	45.0	121	55.0		
Identification with commitment	Low	67	29.0	164	71.0	59.87	p<0.001
	Moderate	174	61.3	110	38.7		
	High	132	57.1	99	42.9		
Ruminative Exploration	Low	94	34.8	176	65.2	39.12	p<0.001
	Moderate	110	59.5	75	40.5		
	High	169	58.1	122	41.9		

The association between identity statuses or dimensions and the history of sexual abuse

Logistic regression analyses further explored the association between identity dimensions and the history of sexual abuse, and both unadjusted Odds Ratio (UOR) and adjusted odds ratios (AOR) are presented in Table 3. Participants scoring high on Identity Diffusion were significantly more likely to report a history of sexual abuse compared to those scoring low (AOR = 8.44, 95% CI: 5.11, 13.92, $p < 0.001$).

Similarly, high scores on Identity Foreclosure were associated with increased odds of reporting sexual abuse (AOR = 4.81, 95% CI: 2.87, 7.95, $p < 0.001$).

For Identity Moratorium, high scorers had over twice the odds of reporting a history of sexual abuse compared to low scorers (AOR = 2.26, $p \leq 0.01$). Moderate scorers on Identity Achievement had higher odds of reporting a history of abuse (AOR = 1.35), although this was not statistically significant, and high scorers showed no significant association.

Associations with Exploration in Breadth and Commitment Making were weaker after adjustment. Participants scoring high on Commitment Making were not more likely to report a history of sexual abuse (AOR = .96, 95% CI: 0.58–1.71). However, moderate scorers on Identification with Commitment demonstrated slightly

increased odds (AOR = 1.69, 95% CI: 1.01–2.81, $p \leq 0.05$), and high scorers had even higher odds (AOR = 1.94, $p \leq 0.05$). Finally, although high scores on Ruminative Exploration were initially associated with increased odds of reporting a history of sexual abuse (UOR = 2.59, $p \leq 0.001$), this relationship was not significant after adjustment (AOR = 0.913, 95% CI: 0.54–1.53).

Table 3. Logistic regression analysis of the association between identity dimensions and history of sexual abuse

Variables	Score	Cases n (%)	Controls n (%)	UOR	95%CI	AOR	95%CI
Identity diffusion	Low	41 (16.7)	205 (83.3)	Ref		Ref	
	Moderate	153 (57.7)	112 (42.3)	6.83***	[4.51-10.34]	4.17***	[3.04-7.68]
	High	179 (76.2)	56 (23.8)	15.98***	[10.19-25.06]	7.55***	[5.11-13.92]
Identity foreclosure	Low	63 (24.5)	194 (75.5)	Ref		Ref	
	Moderate	131 (53.5)	114 (46.5)	3.53***	[2.42-5.17]	2.26***	[1.48-3.68]
	High	179 (73.4)	65 (26.6)	8.48***	[5.67-12.67]	4.81***	[2.87-7.95]
Identity moratorium	Low	54 (22.9)	182 (77.1)	Ref		Ref	
	Moderate	148 (59.2)	102 (40.8)	4.89***	[3.29-7.26]	2.50***	[1.58-4.24]
	High	171 (65.8)	89 (34.2)	6.50***	[4.35-9.63]	2.21**	[1.30-3.93]
Identity achievement	Low	64 (27.4)	170 (72.6)	Ref		Ref	
	Moderate	153 (59.8)	103 (40.2)	3.95***	[2.70-5.77]	1.28	[.81-2.25]
	High	156 (60.9)	100 (39.1)	4.14***	[2.83-6.07]	0.912	[.51-1.62]
Exploration in breadth	Low	101 (37.3)	170 (62.7)	Ref		Ref	
	Moderate	133 (61.6)	83 (38.4)	2.69***	[1.86-3.89]	1.00	[0.59-1.64]
	High	139 (53.7)	120 (46.3)	1.95***	[1.37-2.76]	0.913	[0.53-1.38]
Commitment making	Low	77 (30.4)	176 (69.6)	Ref		Ref	
	Moderate	177 (70.5)	74 (29.5)	5.46***	[3.73-8.04]	2.35***	[1.50-4.08]
	High	119 (49.2)	123 (50.8)	2.21***	[1.53-3.19]	0.96	[0.58-1.71]
Exploration in depth	Low	93 (35.2)	171 (64.8)	Ref		Ref	
	Moderate	181 (69.1)	81 (30.9)	4.11***	[2.85-5.91]	2.19***	[1.40-3.50]
	High	99 (45.0)	121 (55.0)	1.51*	[1.04-2.17]	0.95	[0.58-1.54]
Identification with commitment	Low	67 (29.0)	164 (71.0)	Ref		Ref	
	Moderate	174 (61.3)	110 (38.7)	3.87***	[2.67-5.61]	1.61	[1.01-2.81]
	High	132 (57.1)	99 (42.9)	3.26***	[2.22-4.79]	1.82*	[1.08-3.47]
Ruminative exploration	Low	94 (34.8)	176 (65.2)	Ref		Ref	
	Moderate	110 (59.5)	75 (40.5)	2.75***	[1.87-4.04]	1.16	[0.65-1.82]
	High	169 (58.1)	122 (41.9)	2.59***	[1.84-3.65]	0.94	[0.54-1.53]

Key: UOR = Unadjusted Odds Ratio; AOR = Adjusted Odds Ratio; CI = Confidence interval

Discussion

This study explored the association between identity dimensions and the history of sexual abuse among adolescents, providing important insights into how trauma affects identity development. Our findings demonstrate that sexual abuse is significantly associated with disruptions in identity dimensions, including diffusion, foreclosure, moratorium, exploration (in breadth and depth), commitment making, identification with commitment, and ruminative exploration. These results contribute to the limited body of research examining the interplay between identity formation and trauma, particularly in the context of sexual abuse.

Consistent with previous research,[11,23] our findings show a strong association between sexual abuse and heightened levels of identity diffusion and foreclosure. Adolescents with a history of sexual abuse were significantly more likely to report moderate and high levels of diffusion and foreclosure compared to their non-abused peers. These results align with studies that have linked childhood maltreatment to identity diffusion,[11,23] The overwhelming psychological burden of abuse may disrupt the integration of personal values, leaving adolescents with fragmented or prematurely rigid identities. Identity diffusion, characterised by a lack of direction and poorly integrated personal values, is often linked to emotional dysregulation and difficulties in decision-making,[24, 25] Sexual abuse exacerbates these challenges by overwhelming adolescents with feelings of shame, confusion, and betrayal, hindering the development of a stable and cohesive identity.[26, 27] Adolescents with a history of sexual abuse were significantly more likely to report moderate and high levels of diffusion and foreclosure compared to their non-abused peers. These results align with studies that have linked childhood maltreatment to identity diffusion,[11,23] The overwhelming psychological burden of abuse may disrupt the integration of

personal values, leaving adolescents with fragmented or prematurely rigid identities. Identity diffusion, characterised by a lack of direction and poorly integrated personal values, is often linked to emotional dysregulation and difficulties in decision-making,[24, 25] Sexual abuse exacerbates these challenges by overwhelming adolescents with feelings of shame, confusion, and betrayal, hindering the development of a stable and cohesive identity.[26, 27]

Similarly, the heightened levels of identity foreclosure observed in adolescents with a history of sexual abuse may reflect a defensive coping strategy. These adolescents may prematurely adopt externally imposed commitments, such as early marriage, teen motherhood, or rigid societal roles, as a means of regaining a sense of control and stability in their lives[28, 29] While these commitments may provide temporary relief, they often lack the self-determined exploration necessary for healthy identity development. This aligns with findings by Bailey et al.,[30] who observed similar patterns among adolescent mothers with a history of maltreatment.

One of the novel contributions of this study is the examination of “in-depth” identity exploration. Adolescents with a history of sexual abuse were significantly more likely to report moderate levels of exploration in depth, suggesting that they engage in some degree of self-reflection. However, this process may be constrained or maladaptive, as their exploration is often limited to roles imposed by external circumstances, such as caregiving or motherhood, rather than being autonomous or broad. Interestingly, high levels of exploration in depth were not statistically significantly different between groups suggesting that those able to engage in more extensive exploration may have access to additional resources or social support that buffer the impact of trauma. Exploration in breadth, defined as considering a wide range of identity possibilities, was not statistically significantly associated with sexual abuse after adjustment (AOR = 1.00 for moderate, 0.913 for high levels).

This finding contrasts with studies, such as Guler's[31] which reported that war exposure negatively influenced identity development in adolescent refugees. The non-statistically significant association in our study may indicate that exploration in breadth is less directly affected by trauma or may be overshadowed by more immediate survival concerns, such as social stigma and external pressures.

The strong association between sexual abuse and ruminative exploration aligns with existing research linking trauma to maladaptive cognitive processes. Adolescents with a history of sexual abuse were statistically significantly more likely to report high levels of ruminative exploration in the unadjusted model (UOR = 2.59), but this association was not statistically significant after adjustment (AOR = 0.94). Ruminative exploration, characterized by repetitive and self-critical thinking about one's identity, may reflect the emotional distress caused by sexual abuse. This maladaptive pattern reinforces feelings of confusion and self-doubt, further disrupting identity development. These findings are consistent with research highlighting the role of trauma in fostering intrusive and repetitive thoughts about the self, which are often linked to mental health challenges such as depression and anxiety[30] This suggests that while rumination may be a common response to trauma, its relationship with identity development may depend on other factors, such as psychological distress or the availability of social support. Contrary to expectations, identity achievement did not show statistically significant associations with sexual abuse. This suggests that while some adolescents may display early achievement in response to trauma, this is not a consistent pattern. Similarly, the association between sexual abuse and identity moratorium, which reflects active exploration without commitment, was attenuated in the adjusted model. These results highlight the complex and context-dependent nature of identity development in trauma-exposed adolescents.[14,12]

Overall, our findings suggest that exposure to sexual abuse may considerably disturb the normal trajectory of identity development in adolescents. Sexual abuse often imposes adult responsibilities prematurely, particularly in cases of teen pregnancy or early motherhood. These adolescents may also face societal stigma and social blame due to abortion or pregnancy, which can further constrain their identity development and push them into early marriage as a coping mechanism.

Strengths and Limitations

The study's strengths include its robust case-control design and the use of a nationwide sample of adolescents. However, the exclusive focus on female participants limits the generalizability of the findings. Additionally, the cross-sectional nature of the study precludes causal inferences.

Conclusion

Our findings highlight the critical role of sexual abuse in shaping identity dimensions among adolescents. Sexual abuse is associated with disrupted identity processes, including heightened diffusion, foreclosure, and ruminative exploration, alongside altered exploratory processes and premature commitments. From a theoretical perspective, these findings underscore the need to integrate trauma models into frameworks of identity development, particularly for adolescents navigating the aftermath of abuse. Practically, these findings highlight the importance of interventions tailored to support identity development in trauma-exposed adolescents. Such programs should focus on fostering healthy exploratory behaviours, reducing maladaptive patterns such as ruminative exploration, and promoting self-determined commitments. Interventions must also address the broader psychosocial challenges faced by these adolescents, including stigma, social isolation, and limited access to supportive environments. Future longitudinal studies are needed to examine the trajectories of identity dimensions

over time and explore the interplay between trauma, exploration processes, and psychological outcomes in both genders.

Authors 'contributions

MSS, CUK, SGS, JM contributed to the study design, conceptualization, data curation. EM and UE contributed to the data collection and data curation. JN, FN and LU contribute to the writing of the first draft of the manuscript and correct the English grammar. JN, LU, MSS, and JM contributed to the data analysis. All authors reviewed and approved the manuscript final version.

Conflict of interest declaration

The authors declare that there is no conflict of interest.

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