

# Assessing sexual-abuse prevention knowledge and related factors among adolescent girls with intellectual disabilities in Padang: a cross-sectional study

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Contributions: the study was designed and conceptualized by the entire team, with ARM leading the effort; MN and LF were responsible for identifying the study's population and managing the recruitment process; IMS translated and adapted the Illustrated Scale Measuring the Sexual Abuse Prevention Knowledge questionnaire; YH ensured its validity; MF obtained ethical approvals and permissions for the study; PDR led the data collection process; ARM and MN performed univariate and bivariate analyses. The manuscript was drafted by all authors, with ARM leading the writing and YH and MF reviewing and finalizing it for submission. All the authors have read and approved the final version of the manuscript and agreed to be held accountable for all aspects of the work.

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Informed consent: for participants under 18, parental assent was obtained, while those 18 and older provided informed consent themselves, unless legally incapable due to intellectual disabilities. This approach respects the autonomy of adolescents and adheres to ethical standards in human research.

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## Abstract

Sexual abuse among adolescents With Intellectual Disabilities (ID) has been significantly under-researched despite their high vulnerability. This study aimed to assess the sexual abuse prevention knowledge of adolescent girls with ID in Padang and explore how various respondents' characteristics relate to the risk of sexual abuse. Findings from this study may inform future prevention strategies and support services. A descriptive cross-sectional approach was utilized, and involved 50 adolescent girls from five special education schools in Padang. Respondents were assessed using the Illustrated Scale Measuring Sexual Abuse Prevention Knowledge, which covered five key domains. The study analyzed the risk of sexual abuse and related factors. The findings revealed significant knowledge disparities, especially in identifying abusive situations, with notably low scores. Statistical analysis showed a strong correlation between the disability category and additional mental or physical conditions, indicating an increased risk of sexual abuse. The results emphasize the urgent need for customized educational programs to address the specific challenges faced by adolescents with ID. Enhancing sexual abuse prevention knowledge is crucial for reducing their victimization risk. The study recommends comprehensive educational strategies and supportive interventions tailored to their cognitive and physical profiles.

## Introduction

The prevalence of sexual abuse among adolescent girls with Intellectual Disabilities (ID) is alarmingly high. Estimates indicate that 14% to 32% of these individuals experience abuse, which is 4 to 8 times higher than the rates among their peers without disabilities. This disparity underscores their significantly increased vulnerability to sexual victimization.<sup>1</sup> Additionally, studies reveal that one in three adults with ID has experienced sexual abuse, often perpetrated by other individuals with ID.<sup>2,3</sup> The vulnerability of this population is highlighted by prevalence rates: 32.9% of adults with ID in the UK experience sexual abuse, compared to 15.2% in the USA.<sup>4</sup> In a specific study, 2.67% of girls with mild ID were reported to have been abused.<sup>5</sup> In Padang, Indonesia, the population of children with disabilities in 2020 was recorded at 1,625.<sup>6</sup> This city has seen a concerning rise in cases of sexual abuse among children, particularly those with ID, with cases increasing from 57 in 2016 to 78 in 2017.<sup>7</sup> Adolescent girls with ID in Padang are especially vulnerable due to their impaired cognitive and adaptive functioning, which limits their ability to recognize and respond to abuse.

ID is characterized by significant limitations in cognitive and adaptive functioning, and is classified into four levels - mild, mod-

erate, severe, and profound - based on these functional limitations.<sup>8</sup> It involves impairments in various aspects of intelligence, including socialization, knowledge, speech, and motor function, affecting social, motor, and practical skills.<sup>9,10</sup> The diverse nature of ID is influenced by environmental factors, genetic mutations, or chromosome aberrations.<sup>11</sup> In Padang, these disabilities range from mild to moderate, with most affected children falling into these categories. Several factors contribute to the increased risk of sexual abuse among girls with ID, including lack of adequate training, irrational reactions from families and communities, and the girls' own inadequate responses.<sup>5</sup> Familial risk factors include low education levels of parents, economic problems, early marriage of parents, and broken families.<sup>12</sup> Children with ID are at heightened risk due to lower sexual knowledge levels and inadequate sexual education.<sup>13</sup> They also face communication barriers that hinder their ability to report abuse effectively, further exacerbating their vulnerability.<sup>14</sup> Additionally, familial factors such as poverty, low parental education levels, and maternal unawareness limit the family's capacity to provide adequate protection and support.<sup>15</sup> In Padang, there are 44 special schools (SLB) in Sumatera Barat, with two (4.55%) being government-owned and the remaining 37 (84.09%) privately owned.<sup>16</sup> Most students are enrolled in the public SLBs and the three private SLBs used for this research. These special needs schools focus on enhancing various aspects of children's development, including cognitive skills, vocational training, adaptive behavior, and physical activity.<sup>17-19</sup>

The significance of this study lies in the critical need to enhance sexual abuse prevention knowledge and strategies, particularly among high-risk groups like adolescent girls with ID in Padang. These individuals face increased vulnerability due to their cognitive limitations, underscoring the importance of tailored educational programs. By focusing on this demographic, the research aims to mitigate risks and promote safer developmental environments through informed, effective interventions. This cross-sectional study assesses the sexual abuse prevention knowledge within this group and explores how various characteristics related to their disability impact their risk of sexual abuse. Conducted in five special schools in Padang, the study offers detailed insights into the educational deficiencies these students face. The findings are intended to lay the groundwork for future strategies that address these educational gaps, thereby reducing the incidence of sexual abuse among these youths and improving their overall safety and well-being. This approach not only addresses an urgent local need but also contributes to the broader goal of protecting vulnerable populations from sexual abuse.

## Materials and Methods

### Study participants

The study population consisted of all students with ID attending five special schools in Padang. A total sampling method was employed to ensure comprehensive coverage, incorporating all eligible students with ID from these schools. The sample size for this study was 50 adolescents with ID. The inclusion criteria were adolescents with mild or moderate ID, aged 12 to 22 years, who were cooperative and willing to participate. The study focused on the critical transitional period from 12 to 22 years, examining developmental trajectories and educational outcomes in individuals with ID, aligning with developmental psychology. Exclusion criteria included: adolescents with severe ID or other co-existing disabili-

ties such as quadriplegia, deafness, blindness, autism, or those who were ill at the time of the study.

### Research instruments

The measurement tools used in this study were carefully designed to suit the intellectual abilities of participants. These included a demographic data questionnaire and the Illustrated Scale Measuring Sexual Abuse Prevention Knowledge.<sup>20</sup> The scale consists of 30 items, divided into 20 true/false items and 10 multiple-choice items, covering five main domains: Puberty Physiology (PP), Body Boundaries (BB), identification of Improper Sexual Relationships (ISR), Identification of Abusive Situations (IAS), and Coping Methods when facing abusive situations (CM). The scale assesses various aspects, such as understanding physical changes during puberty, knowledge of private body parts and the right to protect one's own body, awareness of inappropriate sexual relationships, ability to recognize abusive situations, and strategies for coping with abuse. Each correct response receives a score of 1, and each incorrect response receives a score of 0, with total possible scores ranging from 0 to 30. Higher scores indicate better knowledge of sexual abuse prevention. The internal consistency reliability of the scale was satisfactory, with Cronbach's alpha values of 0.81 for true/false items, 0.74 for multiple-choice items, and 0.84 for the entire scale. Subscale reliabilities varied: PP ( $\alpha=0.82$ ), BB ( $\alpha=0.63$ ), ISR ( $\alpha=0.92$ ), IAS ( $\alpha=0.75$ ), and CM ( $\alpha=0.54$ ). The reliability of multiple-choice items ranged from 0.51 to 0.65. The effectiveness of these adapted instruments was previously verified through a validation study involving ten children with mild ID.<sup>21</sup>

### Procedure

After securing the necessary research permits and passing ethical review, the researcher created a total sampling frame to identify and enumerate all eligible participants. This involved identifying every adolescent girl with ID across the five special schools in Padang City who met the study's inclusion criteria. The total identified population was 50 individuals. Each participant was informed about the study's objectives, and informed consent was obtained from parents for those under 18, while those 18 and older gave consent themselves, unless legally incapable due to ID. This complete enumeration ensured the sample's representativeness, allowing comprehensive data collection through subsequent questionnaire administration.

### Data analysis

Univariate analysis focused on the distribution of frequency for various demographic characteristics, including age, method of questionnaire completion, age at diagnosis of ID, presence of other mental or physical conditions, disability category, type of residence, access to sex education, and instances of reported sexual abuse. Data were processed using standard techniques to ensure accuracy and reliability, with variables presented in detailed tables. The five domains of the Illustrated Scale Measuring Sexual Abuse Prevention Knowledge were analyzed for central tendencies (mean, standard deviation, minimum, and maximum).

Bivariate analysis explored the relationships between demographic characteristics and sexual abuse prevention knowledge. Correlation analyses assessed the strength and significance of these relationships. Pearson correlation quantified the degree of correlation between continuous variables, identifying linear relationships between factors such as age and sexual abuse prevention knowledge. Point biserial correlation examined relationships between binary and continuous variables, analyzing the impact of binary demographic characteristics (*e.g.*, presence of other conditions) on sexual abuse

prevention knowledge. Statistical tables and figures accompanied each analysis, aiding in data interpretation. Findings were discussed in relation to p-values, with a significance level set at  $p < 0.05$ , indicating robust relationships between studied variables.

### Ethics approval

The study received ethical approval from the Ethics Commission Team of Universitas Andalas under the reference number 1098/UN.16.2/KEP-FK/2023, ensuring full adherence to ethical standards. For participants under 18, parental assent was obtained, while those 18 and older provided informed consent themselves, unless legally incapable due to ID. This approach respects the autonomy of adolescents and adheres to ethical standards in human research.

## Results

### Demographic characteristic of respondents

A total of 50 children participated in the study by filling out the research questionnaire. Table 1 presents the demographic characteristics of the respondents, detailing various attributes including age, method of questionnaire completion, age at diagnosis of ID, presence of other mental/physical conditions, disability category, residence type, access to sex education, and reported instances of sexual abuse. The majority of respondents (54%) were in late adolescence (18-22 years), and similarly, 54% of the respondents filled out the questionnaire themselves. Most respondents (74%) were diagnosed with ID between the ages of 9 and 18. A significant number (66%) reported no other mental or physical conditions. The predominant disability category was mild, with 84% of respondents falling into this group. All respondents lived with relatives or parents. Regarding sex education, 86% had received it at least once. Additionally, 4% had experienced sexual abuse reported by teachers or health workers. This data reflects a population primarily consisting of late adolescents with mild disabilities, living in supportive family environments, and having access to sex education, although a small but significant portion has encountered sexual abuse.

### Five domains of the illustrated scale measuring sexual abuse prevention knowledge

Table 2 presents the descriptive statistics analysis of the five domains measuring sexual abuse prevention knowledge among respondents: Puberty Physiology (PP), Body Boundaries (BB), identification of Improper Sexual Relationships (ISR), Identification of Abusive Situations (IAS), and Coping Methods when facing abusive situations (CM). Respondents demonstrated the highest proficiency in BB, with a mean score of 5.7, indicating

**Table 1.** Demographic characteristics of respondents.

Variable	Frequency	%
Age (years)		
Early adolescence (12-14 years)	10	20
Middle adolescence (15-17 years)	13	26
Late adolescence (18-22 years)	27	54
How was the questionnaire filled out?		
By the respondent herself	27	54
By interview	23	46
Age at diagnosis of intellectual disability		
From birth		
Between 1 and 8 years	1	2
Between 9 and 18 years	37	74
Older than 19 years	12	24
Other mental/physical conditions		
Yes	17	34
No	33	66
Disability category		
Light disability	42	84
Moderate disability	8	16
Residence type		
With relatives/parents	50	100
Sex education		
Not yet	7	14
Once	43	86
Sexual abuse (reported by teachers/health workers)	2	4

**Table 2.** Descriptive statistics of five domains measuring sexual abuse prevention knowledge.

Domain	Means (SD)	Min	Max
Puberty Physiology (BP)	4.92 (0.944)	3	6
Body Boundaries (BB)	5,7 (0.544)	4	6
Identification of Improper Sexual Relationships (ISR)	5,10 (0.678)	3	6
Identification of Abusive Situations (IAS)	3.72 (1,526)	1	6
Coping Methods when facing abusive situations (CM)	5,18 (1.304)	1	6

SD, Standard Deviation.

**Table 3.** Correlation between demographic characteristics of children with Intellectual Disabilities (ID) and sexual abuse prevention knowledge.

Demographic characteristic variables	Correlation coefficient (r)	p-value
Age	0.084	0.562
Age at diagnosis of Intellectual Disability	0.053	0.716
Other mental/physical conditions	0.326	0.021*
Disability category	-0.279	0.05*

The significance level for the p-value is set at  $< 0.05$ .

strong and consistent knowledge. They also scored highly in Identification of ISR and CM, reflecting good understanding, although there was some variability, particularly in coping methods. PP showed moderate knowledge with more variation in responses. IAS had the lowest mean score of 3.72 and the highest standard deviation, highlighting significant discrepancies in respondents' ability to recognize abusive situations. These findings suggest that while knowledge is generally strong in some areas, there are critical gaps, particularly in identifying abusive situations, that need to be addressed through targeted educational interventions to ensure a comprehensive understanding of sexual abuse prevention.

### Factors related to sexual abuse prevention knowledge among adolescent girls with intellectual disabilities

The analysis revealed that the presence of other mental/physical conditions had a statistically significant moderate positive correlation ( $r=0.326$ ,  $p=0.021$ ) with sexual abuse prevention knowledge, suggesting that as the number of other mental/physical conditions increases, the level of knowledge also increases (Table 3). Conversely, the disability category showed a statistically significant moderate negative correlation ( $r=-0.279$ ,  $p=0.05$ ), implying that different disability categories are associated with variations in knowledge, with certain categories potentially linked to a decrease in knowledge levels. These findings indicate the need for tailored educational interventions that address the specific needs of different disability categories to improve sexual abuse prevention knowledge among adolescent girls with ID.

## Discussion

This study's univariate analysis of the central tendency of the five domains of sexual abuse prevention knowledge reveals significant insights into the vulnerabilities faced by adolescent girls with ID. The mean scores for the five dimensions - PP (4.92), BB (5.7), ISR (5.1), IAS (3.72), and CM (5.18) - highlight critical areas of concern. The most concerning area is IAS, which has the lowest mean score (3.72) and the highest Standard Deviation (SD), indicating significant discrepancies in respondents' ability to recognize abusive situations.

These findings align with previous research, which underscores the heightened vulnerability of intellectually disabled adolescents to abusive situations. Factors such as delays in cognitive skills, difficulty recognizing bad intentions, challenges in self-defense, and a lack of knowledge and skills regarding relationships and sexuality contribute to this vulnerability.<sup>22,23</sup> Additionally, personal and family risk factors create an imbalance of power, increasing the likelihood of becoming victims of sexual abuse.<sup>24</sup> Studies have shown that adolescents with ID are more likely to be sexually abused by family members, caregivers, and others in the community.<sup>25</sup> Impaired social skills also make individuals with ID more susceptible to abuse.<sup>26</sup> The lack of research, information, and education on the sexuality of people with ID further contributes to their vulnerability.<sup>27</sup>

The study contributes novel insights into the specific need for education on identifying abusive situations. Respondents exhibited the lowest mean score in this domain, indicating an urgent need for targeted educational interventions to enhance knowledge and awareness. By focusing on this area, interventions can directly address the most pronounced deficiencies, ensuring a comprehen-

sive understanding of sexual abuse prevention among the respondents. Educational interventions that empower individuals to recognize abuse situations, particularly in group settings, can be effective in enhancing knowledge and awareness.<sup>28</sup> An educational intervention using an information package was effective in improving parents' knowledge regarding Child Sexual Abuse (CSA).<sup>29</sup> A digital application designed to refresh knowledge of abuse for individuals with ID showed promising results in reinforcing understanding and confidence in reporting abuse over the long term.<sup>30</sup> Programs involving film screenings and interactive discussions can enhance protective decision-making capabilities for adolescent girls with ID.<sup>31</sup>

The findings reiterate the necessity for robust prevention strategies and policies tailored to the needs of adolescents with ID. Comprehensive sexual health education aimed at improving self-image, self-confidence, and empowering individuals to make informed choices can help protect them from exploitation.<sup>25,32</sup> Effective prevention strategies may include education on boundaries, relationships, and sexuality tailored to cognitive abilities, promoting self-advocacy skills, and providing access to support services.<sup>33</sup> Providing inclusive Healthy and Respectful Relationship (HRR) education may help reduce the risk of sexual abuse and address health disparities affecting youth with disabilities.<sup>34</sup> This study highlights the statistically significant relationship between the presence of additional mental or physical conditions and the risk of sexual abuse ( $p=0.021$ ). Our findings align with previous research, which indicates that co-occurring conditions exacerbate the vulnerability of children with ID to sexual abuse.<sup>35</sup> Other research supports this by demonstrating that ID, communication disorders, and behavioral disorders contribute to high-risk levels, with multiple disabilities further increasing susceptibility.<sup>14</sup>

Our findings are consistent with those of Amborski *et al.*<sup>36</sup> in reporting that individuals with disabilities are at a significantly higher risk of sexual victimization, with sensory impairments posing the highest risk. These vulnerabilities predispose individuals not only to immediate harm but also to long-term mental health issues and a perpetuated cycle of abuse, as noted by Bates *et al.*<sup>37</sup> The urgent need for specialized protective measures and interventions is further highlighted by Amelink.<sup>22</sup> Reflecting the critical importance of ensuring tailored support and protection for adolescents with ID to safeguard their rights to safety and informed agency in personal health decisions. This study contributes to the field by emphasizing the need for a nuanced understanding and targeted interventions to address the heightened risk of sexual abuse in individuals with multiple disabilities.

This study also explored the association between ID categories (mild or moderate) and the risk of sexual abuse. The findings indicate a significant moderate negative correlation ( $r=-0.279$ ,  $p=0.05$ ), suggesting that different disability categories are associated with variations in the risk of sexual abuse. Individuals with mild ID are at higher risk of becoming victims and more vulnerable to the disruptive effects of sexual abuse.<sup>34</sup> This is consistent with findings that individuals with mild or borderline intellectual functioning face an increased risk of sexual abuse compared to those with moderate or severe ID.<sup>38</sup> Furthermore, Tomsa *et al.* reported that the prevalence of sexual abuse increases from mild to severe levels of ID and decreases at profound levels.<sup>4</sup> This pattern is reflected in our study, where the correlation suggests that as the severity of ID increases, the risk of sexual abuse decreases, particularly at the profound level.

This study offers a detailed examination of the risk of sexual abuse among individuals with mild and moderate ID, providing a nuanced understanding crucial for developing tailored interven-

tions. It identifies a moderate negative correlation between disability category and risk, quantifying this relationship and offering insights valuable for policymakers and practitioners. Additionally, the study highlights the need for focused protective measures and educational programs for individuals with mild ID, emphasizing targeted interventions to prevent abuse and mitigate its effects.

### Study limitations

The study's reliance on self-reported data for assessing knowledge and coping strategies among adolescent girls with ID could introduce inaccuracies due to potential cognitive biases or misunderstandings inherent to this population. Additionally, the cross-sectional design limits the ability to determine causality and observe long-term effects of interventions, necessitating longitudinal studies for more definitive conclusions. These limitations highlight the need for enhanced methodological approaches in future research to ensure more accurate and applicable findings.

### Conclusions

This study reveals a complex relationship between ID, the presence of other mental or physical conditions, and the risk of sexual abuse among adolescent girls. It highlights significant disparities in sexual abuse prevention knowledge, particularly in recognizing abusive situations, underscoring the urgent need for tailored educational programs to address these unique challenges.

The findings emphasize the critical importance of comprehensive sexual education and targeted prevention strategies for adolescent girls with ID. Ongoing support and the development of intervention strategies are essential to mitigate the risks of sexual abuse. Policymakers, educators, and healthcare providers must ensure these adolescents receive the necessary protection and education to navigate their vulnerabilities safely and effectively.

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