Surfing Online Safety: Assertiveness and Parental Involvement in Adolescents' Attitudes Toward Cyber Grooming

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The rapid development of digital technology has increased adolescents' exposure to various online risks, yet limited studies have examined protective psychosocial factors against cyber grooming. While previous research has mainly focused on the prevalence and psychological impacts of cyber grooming, less attention has been given to the roles of individual skills such as assertiveness and contextual factors like parental involvement. Addressing this gap, the present study aims to investigate how assertiveness and parental involvement shape adolescents' attitudes toward cyber grooming. A quantitative approach was employed with a sample of 394 female adolescents aged 13–18 years who accessed social media for at least five hours per day. Multiple linear regression analysis revealed that assertiveness and parental involvement had a highly significant role in adolescents' attitudes toward cyber grooming, accounting for 55.1% of the variance. These findings underscore the importance of strengthening both individual and family-based protective factors to build adolescents' resilience against online exploitation.

INTRODUCTION

The development of digital technology has had a profound impact on various aspects of human life, including patterns of communication, education, and social interaction. One of the groups most affected by this advancement is adolescents. Adolescents are particularly influenced by the digital transformation because they are in a developmental stage characterized by exploration and identity seeking (Pérez-Torres, 2024). They enjoy accessing social media for several reasons, including gaining recognition from others, seeking entertainment, developing personal interests, finding role models, expressing emotions, expanding friendships, attaining popularity, and finding sources of motivation (Suminta & Sa'adati, 2024). Numerous cases have shown that chronological age is not directly associated with readiness to use social media. Compared to children, adolescents tend to have a stronger need for respect and recognition of their autonomy (Calvete et al., 2021). This condition can increase the risk of cyber grooming.

Cyber grooming is a form of psychological manipulation carried out by perpetrators on social media with the aim of emotionally or sexually exploiting victims (Chiu & Quayle, 2022). This process involves carefully planned communication through digital platforms, in which perpetrators build a trusting relationship with the victim before exploitation takes place. Cyber grooming is often reciprocal in nature, where once the perpetrator fulfils the victim's requests, they then demand sexual photos or videos in return. Social media has introduced new societal standards, such as beauty ideals, body care, and lifestyle trends. Adolescents who lack gratitude and compassion are more susceptible to excessive online interactions (Hanifah et al., 2024). Adolescents, who are in a

stage of psychosocial development and have a strong need for social acceptance, often become primary targets in this process. Moreover, social norms in the digital sphere surrounding beauty, popularity, and lifestyle encourage adolescents to be more open to risky online interactions.

Female adolescents are significantly more at risk of becoming victims of cyber grooming compared to males (Schittenhelm et al., 2025). A survey by the Indonesian Child Protection Commission (KPAI) in 2002 revealed that 53.7% of adolescents admitted not knowing the appropriate response when receiving private invitations or inappropriate images from strangers online. Around 24.5% of them chose to do nothing and simply ignore the situation, indicating low responsiveness toward the threat of digital exploitation. Research by Espelage et al. (2020) further shows that adolescents' attitudes toward cyber grooming are shaped by the internalization of values, risk perception, and prior digital experiences. Without support from their environment, such as family and school, adolescents tend to underestimate the risks and feel hesitant to refuse or report such interactions. Therefore, it is crucial to examine not only their knowledge but also their attitudes as an indicator of psychosocial readiness to face online exploitation.

Attitude consists of three main dimensions: the cognitive dimension, which reflects an individual's understanding of potential dangers; the affective dimension, which relates to emotional responses to threats; and the conative dimension, which indicates the drive or intention to take specific actions (Pasaribu et al., 2022). When these three aspects are not balanced, an ideal protective attitude cannot be formed. In the case of cyber grooming, female adolescents who already have a basic understanding of the dangers of online interactions may still fall into manipulative situations if they lack assertiveness and adequate family support. Varona et al. (2022) found that adolescents' attitudes toward cyber grooming are strongly influenced by their level of education, self-confidence, prior experiences, and environmental support. A negative attitude toward suspicious online interactions is significantly associated with preventive actions, such as blocking perpetrators, refusing invitations, or reporting to adults (Ramljak et al., 2025).

Groomers exploit these vulnerabilities by manipulating victims' hobbies and age, showing interest in their lives, or offering material goods such as money, vehicles, and gadgets (Ringenberg et al., 2022). Adolescents are also more likely to trust individuals with attractive appearances, knowledgeability, and openness about their personal lives (Forni et al., 2020). The accumulation of these factors creates manipulation opportunities for groomers. The increasing number of cyber grooming cases involving female adolescents indicates that both emotional and sexual abuse now frequently occur through online platforms. In facing this challenge, parental involvement plays a crucial protective role in safeguarding adolescents from the risks and threats of online grooming behavior (Dorasamy et al., 2021).

Several factors heighten the vulnerability of female adolescents to grooming, including social isolation, poor family communication, lack of sexuality education, and non-heterosexual orientation which may increase the likelihood of seeking emotional connections online, making them more susceptible to exploitation (Sheinov et al., 2022). Parents play a role in providing supervision, education, and emotional support to adolescents. Those who are aware of the risks of social media, communicate clear boundaries for social media use, and educate their children on online relationships can help prevent them from being lured by malicious strangers (Vossen et al., 2024). Conversely, low parental involvement increases the risk of adolescents becoming victims of grooming (Allison et al., 2024).

Assertiveness is essential because online communication often lacks non-verbal cues, such as facial expressions or vocal intonation that typically help individuals assess the intentions of others (Ruben et al., 2021). Adolescents with high assertiveness are more likely to set clear digital boundaries, refuse suspicious personal requests, and actively avoid or terminate interactions leading to exploitation. Malandraki (2023) found that assertiveness is negatively correlated with vulnerability to online sexual abuse. Adolescents who demonstrate assertive behavior are better

prepared to handle risky social situations, as they have a higher sense of self-control and are less likely to succumb to pressure or persuasion. Assertiveness is also associated with emotional regulation skills, which involve recognizing, managing, and expressing emotions in a healthy manner (Kumar & Ramadass, 2019). Non-assertive adolescents tend to internalize discomfort or confusion in online interactions, making them more vulnerable to manipulative relationships (Nikel, 2025).

Assertiveness is a result of social learning processes that can be nurtured through supportive environments, particularly from family and school. In his social learning theory, Bandura (1968) emphasized that assertive behavior can be learned through observing behavioral models, such as parents, teachers, or peers. Adolescents with assertiveness skills are able to establish clear boundaries in online interactions, firmly reject suspicious requests, and communicate discomfort effectively (Karmakar et al., 2020). Assertiveness also enhances self-awareness and confidence, making adolescents more alert to grooming signals and more capable of maintaining self-worth. Developing assertive skills can serve as an effective preventive measure, preparing adolescents to face risky online situations (Fakkel et al., 2024). Thus, assertiveness not only protects adolescents from cyber grooming but also strengthens their ability to communicate clearly and maintain personal safety in online interactions.

Adolescents often feel uncomfortable refusing others' invitations for fear of being perceived as rude, impolite, or losing social relationships. This fear is often exacerbated by peer pressure and digital social norms that tend to normalize intimate online interactions (Angelini & Gini, 2025). Such situations create confusion that can be addressed through strong attitude formation and assertiveness skills. Therefore, assertiveness education is not only essential for character development but also serves as a protective instrument in the context of digital literacy. Assertiveness should not be seen merely as a basic social competence, but as a psychological resilience mechanism enabling adolescents to navigate and act independently in complex and risky digital situations (Moreno & Jurado, 2024).

In addition to personal factors such as assertiveness, parental involvement plays an important role in shaping adolescents' attitudes toward online risks, including cyber grooming. The family is the closest environment with a direct influence on the formation of values, attitudes, and behaviors. Parental involvement not only concerns monitoring children's online behavior but also includes ongoing communication, education, and emotional support (Willems et al., 2023). In this study, parental involvement is examined through the concept of parent mediation, which refers to the ways in which parents mediate their children's media experiences through various active or passive strategies to shape their understanding and behavior in digital interactions (Nagy et al., 2023). A report by Misrohatun (2025) in IDN Times Indonesia notes that adolescents often feel afraid or uncomfortable sharing online experiences with their parents, preferring instead to seek solutions from online creators or influencers. Good communication between parents and adolescents about internet use can reduce the risks of addiction and deviant online behaviors (Khurana et al., 2015).

At present, due to a lack of awareness and knowledge in digital parenting, a gap exists between adolescents' use of technology and parental involvement. When adolescents feel unsupported or misunderstood by their parents, they tend to seek validation or attention from external parties, which in some cases leads to risky interactions with groomers (Aktu, 2024). Parents can take preventive steps through discussion, guidance, and open dialogue with their children about the content they access and the values that should be upheld in the digital world. This can be complemented by access restrictions and social media activity monitoring (Livingstone, 2008).

Assertiveness is reinforced as both a cognitive and social skill to actively protect oneself, while parental involvement serves as the foundation for building adolescents' emotional security. From a family psychology perspective, this helps explain the emotional bond between parents and adolescents. Good communication between parents and adolescents about internet use can reduce the risks of addiction and deviant online behavior (Wissink et al., 2025). A close parent adolescent

relationship fosters comfort in sharing experiences and offers protection from digital threats. Assertiveness remains a key skill in countering cyber grooming (Schittenhelm et al., 2025). Assertive skills developed by adolescents help form a firm stance and the ability to reject suspicious advances. The synergy between parental involvement and assertiveness is therefore key to creating effective protection against cyber grooming.

Study Aim and Hypothesis

This study aims to examine the role of assertiveness, parental involvement, and adolescent attitudes towards cyber grooming. Based on the theoretical framework and previous research, the following hypotheses were proposed, assertiveness has a significant positive role on adolescents' attitudes toward preventing cyber grooming. Parental involvement has a significant positive role on adolescents' attitudes toward preventing cyber grooming, and assertiveness and parental involvement simultaneously have a significant positive role on adolescents' attitudes toward preventing cyber grooming.

METHODS
Design

This study employed a quantitative approach with an explanatory research design. The approach aimed to explain the relationship between the independent variables assertiveness (X_1) and parental involvement (X_2) and the dependent variable, namely attitudes toward cyber grooming (Y).
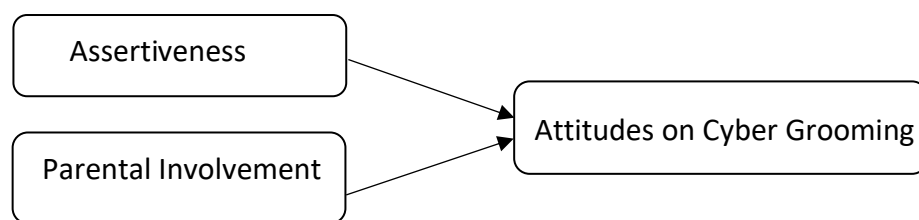

Figure 1. Conceptual Framework

Participants

The study sample comprised female adolescents aged 13–18 years who met the specific criterion of accessing social media for at least five hours per day. The sampling method employed was non-probability sampling using a purposive sampling technique. A total of 394 female adolescents participated in the study. The research strategy involved administering measurement scales distributed in junior and senior high schools across Pringsewu Regency.

Instruments

The measurement instruments used in this study were constructed by the researcher. All instruments were piloted with 130 respondents outside the main sample to ensure the validity and reliability of the scales. The pilot data were collected online through social media.

The Assertiveness Scale, developed based on the theory of Galassi and Galassi (1974), was used to measure the assertiveness variable and demonstrated a Cronbach's alpha value of 0.772, consisting of 13 items. and includes three dimensions: (1) Expressing positive feelings (e.g., I *congratulate a friend on their birthday through social media*), (2) Expressing negative feelings (e.g., *I respond to negative comments on my account without attacking the person personally*), (3) self-affirmations (e.g., *I remind others not to share my personal information without permission*).

Parental Involvement Scale, designed to measure parental involvement, was constructed based on the parent mediation theory by Livingstone and Helsper (2008) and demonstrated a

Cronbach's alpha value of 0.908, consisting of 25 items and comprises four aspects: (1) Establishing rules for social media use that apply not only to children but also to parents (e.g., *My parents and I discuss the risks of interacting with strangers on social media*); (2) Providing knowledge and instilling attitudes in children (e.g., *My parents teach me to be cautious when befriending strangers on social media*); (3) Restricting social media use (e.g., *I feel that the rules regarding social media use make my life more productive*); and (4) Regulating social media use in a contextual and non-extreme manner (e.g., *My parents set appropriate times for social media use without being overly restrictive*)**.**

Attitude Toward Cyber Grooming Scale, developed based on the online grooming theory by Gámez-Guadix et al. (2022), was used to measure attitudes toward cyber grooming. The scale consists of 17 items with a Cronbach's alpha value of 0.791, and encompasses five aspects: (1) Use of deception (e.g., *I believe that fake identities are often used to emotionally manipulate adolescents*), (2) Gift giving (e.g., *In my opinion, sending personal photos to strangers can be exciting because it may lead to receiving gifts*), (3) Interest in the victim's environment (e.g., *I enjoy when friends on social media ask about my daily activities*), (4) Sexualization (e.g., *It is normal if friends on social media ask about my relationship status, whether single or in a relationship*), and (5) Aggression (e.g., *I think it is acceptable if friends on social media forbid us from interacting with family members*).

Data Analysis

Hypothesis testing was conducted using the multiple linear regression method. The first step involved performing classical assumption tests, namely normality, linearity, multicollinearity, and heteroscedasticity tests, as prerequisites. In the second step, once the prerequisite tests were satisfied, hypothesis testing was carried out. The scales used in this study had been tested for validity and reliability prior to use. Data were processed using IBM SPSS Statistics 25 for Windows.

RESULTS AND DISCUSSION
Results

This study involved female adolescents from several junior high schools (SMP) and senior high schools (SMA) in Pringsewu Regency. The sample consisted of 179 junior high school students (45.4%) and 215 senior high school students (54.6%). Based on the normality test, the One-Sample Kolmogorov–Smirnov Test on the unstandardized residual values indicated a significance value (Asymp. Sig. 2-tailed) of 0.200 (p > 0.05). Therefore, it can be concluded that the regression model residuals were normally distributed, as the significance value exceeded 0.05. This result indicates no significant deviation from a normal distribution.

Table 1. Linearity Test Results Between Variables

Variable	F	p
Attitude Toward Cyber Grooming and Assertiveness	0,301	0,000
Attitude Toward Cyber Grooming and Parental Involvement	0,075	0,000

Based on the results of the linearity test presented in Table 1, it can be concluded that there is a linear relationship between assertiveness and parental involvement with attitudes toward cyber grooming. The test results indicate that the significance value for Linearity in the relationship between attitudes toward cyber grooming and assertiveness is 0.000 (< 0.05), and for Deviation from Linearity is 0.301 (> 0.05). This indicates that the relationship between these two variables is linear, with no significant deviation from linearity. Meanwhile, the significance value for Linearity in the relationship between attitudes toward cyber grooming and parental involvement is 0.000 (< 0.05), and for Deviation from Linearity is 0.075 (> 0.05). Thus, the relationship between these two variables can also be considered linear, with no significant deviation from linearity.

Table 2. Multicollinearity Test Results

Variable	Tolerance	VIF value
Assertiveness	0,727	1,376
Parental Involvement	0,727	1,376

Based on Table 2 above, the assertiveness variable has a VIF value of 1.376 and a tolerance value of 0.727, while the parental involvement variable has a VIF value of 1.376 and a tolerance value of 0.727. Therefore, it can be concluded that there is no multicollinearity.

Table 3. Heteroscedasticity Test Results

Variable	p
Assertiveness	0,230
Parental Involvement	0,415

Based on the results in Table 3 above, the significance value (Sig.) for the assertiveness variable is 0.230 and for the parental involvement variable is 0.415. Since all significance values are greater than the significance threshold of 0.05, it can be concluded that there is no significant effect of the independent variables on the magnitude of the residuals. Thus, no symptoms of heteroscedasticity were found in this regression model, and the model meets the classical assumption of residual variance homogeneity (homoscedasticity). The hypothesis testing results (in Table 5) using multiple linear regression analysis show that the simultaneous hypothesis is accepted, as indicated by an F value of 239.782 with a significance of 0.000 ($p < 0.01$). Based on this analysis, it can be concluded that the proposed hypothesis is accepted, meaning that assertiveness and parental involvement have a highly significant role in adolescents' attitudes toward cyber grooming.

Table 4. Assertiveness and Parental Involvement Toward Attitudes on Cyber Grooming

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	10011,568	2	5005,784	239,782	0,000
Residual	8162,679	391	20,876		
Total	18174,246	393			

Table 5. Results of the Partial Hypothesis Test

Model	B	SE	Beta	t	Sig.
(Constant)	73,038	1,870		39,050	0,000
Assertiveness	0,462	0,048	0,379	9,543	0,000
Parental Involvement	0,291	0,025	0,470	11,811	0,000

Based on Table 5 above, the regression coefficient for the assertiveness variable is 0.379, with a t-value of 9.543 and a significance value of 0.000 < 0.01. Thus, assertiveness has a positive and highly significant effect on attitudes toward cyber grooming. This means that the higher the assertiveness, the higher the attitude toward cyber grooming. The regression coefficient for the parental involvement variable is 0.470, with a t-value of 11.811 and a significance value of 0.000 < 0.01. Thus, parental involvement has a positive and highly significant effect on attitudes toward cyber grooming. This means that the higher the parental involvement, the higher the attitude toward cyber grooming.

Table 6. Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error of the Estimate
0,742	0,551	0,549	4,569

Based on Table 6 above, the coefficient of determination or the effective contribution of the assertiveness variable and the parental involvement variable is 0.551. This indicates that

assertiveness and parental involvement account for 55.1% of adolescents' attitudes toward cyber grooming, while the remaining 44.9% is influenced by other variables not examined in this study.

Table 7. Research Categorization

Variable	Low n (%)	Medium n (%)	High n (%)
Assertiveness	34 (8.63%)	300 (76.14%)	60 (15.23%)
Parental Involvement	54 (13.71%)	267 (67.77%)	73 (18.25%)
Attitude Toward Cyber Grooming	34 (8.63%)	338 (85.80%)	22 (5.58%)

Based on the categorization results presented in Table 7, for the assertiveness variable, out of a total of 394 respondents, it was found that most adolescents fell into the medium category, amounting to 300 individuals or 76.14%. For the parental involvement variable, out of a total of 394 respondents, most adolescents were in the medium category, with 267 individuals or 67.77%. For the attitude toward cyber grooming variable, out of a total of 394 respondents, the majority of adolescents were also in the medium category, amounting to 338 individuals or 85.80%.

Discussion

The research findings indicate that assertiveness and parental involvement play significant roles in shaping adolescents' attitudes toward cyber grooming. These findings underscore that both variables are critical factors contributing to the mental readiness and behavioral responses of adolescents when facing potential threats in digital spaces. Adolescents with higher assertiveness tend to demonstrate more decisive, vigilant, and courageous responses in rejecting suspicious invitations or interactions from strangers online (Throuvala et al., 2021). Assertiveness enables adolescents to maintain personal boundaries, refuse inappropriate requests, and clearly communicate their feelings or disagreement (Yosep et al., 2024). Therefore, assertiveness serves as a key protective skill in dealing with manipulative situations such as cyber grooming.

Similarly, parental involvement was also found to influence adolescents' attitudes toward cyber grooming. Adolescents' attitudes toward cyber grooming reflect their awareness of risks, discomfort toward grooming behaviors, and intentions to avoid or report such incidents (Schittenhelm et al., 2025). These attitudes are shaped by experience, social learning, and the values instilled by their environment. Ajzen's (1991) Theory of Planned Behavior explains that attitudes toward a behavior are influenced by three main factors: attitudes toward the behavior itself, subjective norms, and perceived behavioral control. Assertiveness is closely linked to perceived behavioral control the ability to act in accordance with personal beliefs while parental involvement is related to subjective norms, namely the perceived social support.

Wefers et al. (2024) found that adolescents who hold negative attitudes toward inappropriate online communication tend to take preventive measures more promptly, such as blocking perpetrators, avoiding contact, or seeking assistance from adults. Such attitudes develop through the internalization of values and skills acquired from education, experience, and relationships with parents or educators (Anikiej-Wiczenbach et al., 2024). However, knowledge alone is insufficient to form protective attitudes if it is not supported by enabling factors such as a responsive family environment and assertive skills. Therefore, cyber grooming prevention programs should holistically target attitude formation by addressing risk perception, moral values, and confidence to act (Wachs et al., 2016; Calvete et al., 2022). Adolescents' attitudes toward cyber grooming can be considered indicators of their psychosocial readiness to face digital challenges. The stronger the protective attitude, the greater the likelihood of taking firm action against potential online exploitation (Pan et al., 2024). Strengthening such attitudes serves as a strategic first step in psychosocial-based child protection efforts. Fostering positive attitudes toward self-protection in online spaces is an essential foundation for effective cyber grooming prevention strategies.

Adolescents are in a developmental stage characterized by identity exploration, increasing independence, and social engagement, which require holistic support (Puhakka & Hakoköngäs, 2024). Online grooming is also associated with sextortion, where perpetrators manipulate and coerce victims into engaging in actions that benefit them or other adults (Howard et al., 2023; Schoeps et al., 2020). Based on the categorization results, most adolescents demonstrated moderate levels of assertiveness. This indicates that female adolescents are relatively capable of expressing their thoughts, feelings, and opinions openly, but are not yet consistently able to assert their rights and personal boundaries firmly. Nevertheless, a small proportion of respondents fell into the low category, suggesting that some female adolescents still experience difficulties in self-expression or tend to be passive in social interactions. In adolescent psychosocial development, assertiveness is an essential interpersonal skill, especially when facing increasing social pressures and complex relational demands (Papalia et al., 2021). Assertive adolescents are able to establish healthy personal boundaries, including in online interactions that can be ambiguous and manipulative.

Assertiveness is an expression of healthy identity development. Assertive abilities in the digital realm are essential because the online world increases the likelihood of risky communication, such as requests for personal information, flattery, or subtle sexual invitations. Such situations require adolescents to be able to say "no" firmly, end unhealthy conversations, and report suspicious activities. Assertiveness serves as a psychological defense tool against potential exploitation (Malandraki, 2022). Assertiveness is also part of self-regulation skills involving self-awareness, emotional control, and communication competence (Shouhani et al., 2022). Adolescents with high levels of assertiveness tend to have a lower risk of abuse or exploitation because they can maintain personal integrity in interpersonal relationships (Łosiak-Pilch et al., 2022). Thus, assertiveness is not only important as a social skill but also as a form of protection against the dangers of cyber grooming.

Adolescents with high assertiveness demonstrate emotional and social maturity that enables them to maintain personal boundaries, even in risky situations such as unhealthy online interactions (Piccerillo & Digennaro, 2025). Assertive adolescents are known to be more resilient to peer pressure and more aware of potential online exploitation (Sulistiawati et al., 2024; Oghounu, 2025). This is consistent with the findings of Paciello et al. (2023), who emphasized that adolescents with strong assertiveness skills are less likely to become victims of online grooming. Adolescent assertiveness develops through social learning experiences, beginning with modeling assertive behavior, observing role models who demonstrate assertiveness, internalizing knowledge through positive assertive experiences, and reinforcing assertive behaviors through environmental responses (Goel et al., 2024). Research by Avşar and Alkaya (2017) shows that experiential-based assertiveness training programs can enhance adolescents' ability to cope with online social pressure. Assertiveness thus becomes a vital self-protection mechanism.

Parental involvement refers to the active engagement of parents in their children's lives through consistent supervision, communication, and support (Jeynes, 2022). In the digital era, this involvement includes monitoring children's online activities, providing education on digital safety, and creating open communication spaces to discuss potential online risks (Helsper et al., 2024). The higher the parental involvement, the greater the likelihood that children will develop awareness and protective attitudes toward online threats. Bronfenbrenner's (1979) ecological systems theory positions the family as a microsystem with a direct influence on individual development. When parents are actively present in their children's digital lives, they act not only as supervisors but also as role models, sources of education, and providers of emotional protection. A supportive family environment strengthens children's capacity to navigate the digital world safely (Morales-Álvarez et al., 2025).

Parental involvement can take the form of active mediation strategies, such as discussing online content, setting screen time limits, and accompanying children while online (Ren & Zhu, 2022). Research by Livingstone and Helsper (2008) found that active mediation is more effective in preventing exposure to risky content than restrictive mediation that is purely technical. This is because active involvement shapes children's understanding and skills rather than simply controlling behavior. In addition, parental involvement contributes to the formation of subjective norms and perceptions of safety (Achuthan et al., 2022). Odgers (2021) states that adolescents who feel emotionally connected to their parents are more likely to engage in open discussions about online experiences, including when encountering distressing content. Connectedness (emotional closeness with adults) has a positive effect on adolescent resilience (Blum et al., 2022). Shin and Lwin (2022) explain that active parental mediation enhances adolescent girls' critical awareness of online information, while also building trust and a sense of safety. This is crucial for preventing cyber grooming, making it more difficult for perpetrators to exploit children's emotional vulnerabilities and feelings of isolation.

Adolescent girls who perceive parental concern for digital safety tend to internalize these values and act more cautiously in online interactions (Zhu et al., 2023). This condition serves as a protective buffer that can reduce vulnerability to online sexual exploitation. Based on the categorization results for the parental involvement variable, out of a total of 394 respondents, the majority of adolescents were in the moderate category. This finding indicates that, according to the perceptions of adolescent girls, most parents demonstrate a reasonable level of involvement in their children's lives. Such involvement includes communication, emotional support, and supervision of daily activities, including the use of digital technology. Nevertheless, this level of involvement has not yet reached its full potential or consistency in preventing the risk of deviant behaviors that may emerge in digital spaces.

Adolescent girls with secure attachment to their parents generally possess greater self-confidence and emotional regulation, enabling them to think critically about suspicious invitations or interactions, including those in the online realm (Rogers et al., 2022). Conversely, low parental involvement may foster insecure attachment patterns, which can lead adolescents to seek validation and closeness from external sources, including cyber grooming perpetrators (Flykt et al., 2021). Therefore, parental involvement should be positioned not merely as a complementary factor, but as a core component of child protection strategies within the digital ecosystem.

Implications

The findings of this study have important implications in the fields of educational psychology, developmental psychology, social psychology, and digital literacy. The identified role of assertiveness in shaping adolescents' attitudes toward cyber grooming indicates that strengthening interpersonal skills particularly the ability to express opinions, reject risky invitations, and maintain personal boundaries should be an integral part of character education curricula and digital literacy programs in schools. Second, the significant role of parental involvement underscores the importance of implementing effective parental mediation in children's online activities. Parents should not only monitor internet use but also communicate openly and build relationships that make children feel safe to report when encountering risky situations. Third, these findings can serve as a basis for policymakers, educators, and school counsellors in developing holistic cybercrime prevention programs that combine individual-based interventions (assertiveness training) with family-based interventions (enhancing parental involvement). Theoretically, this study reinforces the understanding that the formation of preventive attitudes toward cyber grooming is influenced not only by internal individual factors but also by external support from the family environment. Therefore, effective interventions must integrate both aspects in a unified approach.

Limitations and Further Research

The limitations of this study include the fact that the respondents came from an adolescent group with specific demographic characteristics, so the findings cannot yet be generalized to all age groups or socio-cultural backgrounds. The data were obtained through research scales using the self-report method, which is prone to social desirability bias; thus, respondents may have provided answers that were perceived as more socially acceptable rather than reflecting their actual conditions. This study focused only on two independent variables, namely assertiveness and parental involvement. Therefore, future researchers may explore other variables such as digital literacy, peer support, religiosity, and self-control.

CONCLUSION

This study highlights the significant role of assertiveness and parental involvement in shaping adolescents' attitudes toward cyber grooming, showing that assertiveness fosters resilience through boundary setting and open communication, while parental involvement provides emotional support, social control, and protective values within the family. Most adolescents were categorized at a moderate level in both aspects, indicating the need to strengthen these capacities through family-based interventions, assertiveness training, and digital literacy programs for parents. Preventing cyber grooming therefore requires a comprehensive approach that integrates schools, families, child protection agencies, and digital service providers to build adolescents' resilience and protection in the digital world.

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AUTHOR CONTRIBUTIONS STATEMENT

All authors contributed substantially to this research, from conceptualization and data collection to analysis and manuscript preparation. Each author has read and approved the final manuscript and is responsible for its overall content.

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