



Examining how children experience, interpret, and respond to incidents of online grooming and solicitation: Results from an Australian study

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ABSTRACT

Background: Child sex offenders employ specific strategies to groom children online for sexual abuse, often involving covert use of deception and emotional manipulation to build trust. Research often narrowly focuses on children's experiences of unwanted solicitation from adults, but misses experiences of covert grooming strategies and those where offenders pose as children—which may be difficult to identify and potentially increases risk of abuse.

Objective: This study examined the extent to which Australian children encounter a range of grooming and solicitation strategies from strangers online, and assessed their interpretations, responses and risk factors.

Participants and setting: Participants ($N = 304$) aged 10–17, proportionally representing the broader Australian population, took part in an online survey.

Methods: The survey measured communication experiences related to 12 grooming and solicitation strategies from strangers, including comfort levels, perceived communicator age, and responses. It also assessed relationships with individual factors, digital engagements and safety practices.

Results: Nearly 66% experienced grooming-related communication, and 31% experienced solicitation. Experiences of specific strategies ranged from 15% (external enticements) to 54% (risk assessment). Participants mostly perceived this communication as neither comfortable nor uncomfortable, coming from another child, and responded by doing nothing or restricting the communicator. Increased digital engagement, especially posting media, was strongly linked to experiences of grooming and solicitation communication (η_p^2 up to .157). No link was found with implementing digital safety practices, including parental mediation and privacy measures.

Conclusions: Findings highlight the high prevalence of grooming and solicitation-related communications received by Australian children online. Implications for educational interventions are discussed.

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1. Introduction

The proliferation of networked digital technologies—including messaging, social media and gaming platforms—has enabled child sex offenders to meet and chat anonymously with numerous children simultaneously, unconstrained by geography or time (de Santisteban et al., 2018), resulting in a diverse risk environment. In these chats, offenders may engage in online grooming; a process of manipulation in which an individual (predominantly an adult) uses digital technologies to build a deceptive and trusting relationship with a child, with the intent of exploiting that trust for sexual purposes (Webster et al., 2012; Whittle et al., 2013; Winters et al., 2017). This process typically involves an offender deploying deception and emotional manipulation tactics to lower the child's defenses and gain compliance, and may result in the creation and sharing of child sexual abuse material (CSAM) or arranging in-person meetings for sexual abuse (de Santisteban et al., 2018; Ringenberg et al., 2022; Wachs et al., 2020). During these chats, offenders may directly request sexual information, conversation or images from a child, a process referred to as solicitation (Finkelhor et al., 2024). However, there is considerable variation in the length of time before these requests are made, with some occurring within minutes, and others across a prolonged period (Baldwin, 2016).

A growing body of research has established patterns in the strategies used by offenders to groom and solicit children online through analyses of victim-offender chats (Powell et al., 2021; Ringenberg et al., 2022). Pivotal, recent evidence suggests that some offenders share their methodologies with one another online to assist others in grooming children (INHOPE, n.d.). While several studies have examined children's experiences of *overt* online solicitation strategies (e.g., Seto et al., 2024; Walsh et al., 2025), there is a lack of research examining children's experiences and navigation of such online grooming strategies. This is, at least in part, attributable to some grooming strategies being more *covert*, meaning they may not be immediately recognizable by children as harmful despite escalating the likelihood of the abuse (Chiu & Quayle, 2022). This may pose some difficulty for researchers in capturing this information via survey questions. However, how children perceive and respond to a range of identified grooming strategies, as well as direct solicitation, is crucial to understanding their experiences, and therefore also developing intervention strategies prior to escalation to sexual victimization. The current research will address these gaps.

1.1. Online grooming strategies used by offenders

Child sex offenders deploy a range of strategies to groom child victims online for exploitation and abuse. Over 50 years of research has shown that this involves grooming strategies unique to online environments, as well as in-person strategies that have been adapted for use online. More specifically, various studies have identified these strategies primarily by examining real victim-, decoy- or undercover law enforcement-offender chat logs (e.g., Black et al., 2015; Chiu et al., 2018; de Santisteban et al., 2018). A recent scoping review (see Ringenberg et al., 2022) has comprehensively brought this body of work together and identified 12 grooming strategies that are employed by child sex offenders online. This includes (1) enticements, where offenders use care, compliments, gifts, and exclusivity to build rapport; (2) risk assessment, involving checking for detection risks and assessing a child's vulnerability; (3) trust, developed through shared interests and personal disclosure to encourage reciprocity; (4) sexualization, where conversations shift toward sexual topics, experiences, and requests; (5) fantasy, involving role-play or explicit sexual scenarios online; (6) secrecy, encouraging victims to keep the relationship hidden to increase intimacy; (7) isolation, promoting emotional or physical distance from others to strengthen dependency; (8) meeting, discussing or arranging in-person encounters for sexual or relational purposes; (9) media progression, moving communication across platforms to deepen engagement and reduce detection; (10) deception, where offenders misrepresent their identity or interests; (11) repetition, persistently repeating messages or topics to elicit responses; and (12) coercion, applying pressure or guilt to get the victim to engage in an activity, though this is less common online compared to other manipulative techniques.

The use of these strategies appears dependent on an offender's goals and responses from the victim (Berens et al., 2023; Soldino & Seigfried-Spellar, 2024; van Gijn-Grosvenor & Lamb, 2021) and may be differentially employed across various stages of the grooming process (Ringenberg et al., 2022). Additionally, as noted in the description of the sexualization and meeting grooming strategies, they may involve aspects of solicitation featuring a direct request for sexual information, material, or activity. Further, an important consideration in the literature is that interactions involving minors, decoys, and undercover law enforcement officers may elicit different responses to offender grooming strategies (Ringenberg et al., 2024). For example, undercover law enforcement officers posing as minors are constrained by legal and investigative protocols that limit how they can respond to offender grooming strategies. Consequently, although offenders may employ similar categories of grooming strategies across contexts, the ways in which these strategies are expressed, responded to, and reinforced may differ, influencing their timing within the grooming process, as well as their prevalence and intensity (Ringenberg et al., 2024).

1.2. Prevalence of online grooming and solicitation victimization during childhood

Estimating the prevalence of online grooming and solicitation experiences during childhood has not been straightforward, with research tending not to focus on specific grooming strategies experienced during victimization. A recent systematic literature review found that most studies (of the 34 considered) reported a childhood victimization rate of around 10%, with a range from 5.4 to 31.1% (Schittenhelm et al., 2024). These prevalence rates varied depending on the type of strategy that occurred—with a small number of studies measuring more specific forms of grooming demonstrating the following prevalence: sexual solicitation (11.3–30.2%), sexual interaction (4.8–18.9%), personal communication not necessarily sexual (40.5%), deception (16.5%), gift giving (7.9%), risk assessment (18.2%), sexualization (11.1%), and aggression (7.2%). To date, the Multi-dimensional Online Grooming Questionnaire

(MOGQ; Gámez-Guadix et al., 2021) is the most comprehensive survey instrument measuring grooming victimization, measuring the experience of five grooming strategies in the context of communication perceived to be sent by an adult: (1) deception, (2) gift giving, (3) risk assessment, (4) sexualization, (5) aggression. This instrument has been used in two studies, which found that, among 12–15-year-old Spanish adolescents, the prevalence of experiencing any one grooming strategy from a perceived adult ranged from approximately 7 to 18% (Gámez-Guadix et al., 2021, 2023).

Across the 34 studies identified in the systematic review, there were methodological differences in samples, reporting period (e.g., retrospective, past year, whole childhood), and definitions of online grooming. Regarding the latter point, Schittenhelm et al. (2024) argue that, because 14 studies employed a questionnaire focusing on sexual solicitation (Gámez-Guadix et al., 2018) instead of manipulative grooming, they had in fact *overestimated* the prevalence of grooming among their samples. However, in addition to the limited delineation between online grooming and sexual solicitation, we argue that it is possible that conceptual and methodological issues lead prior research to *underestimate* the prevalence of online grooming.

Several studies raised the threshold for grooming behavior to ask only about experiences of ‘unwanted’ communication, with many studies not investigating how the communication was perceived by participants. As discussed, many grooming strategies involve seemingly innocuous, comfortable, relationship-forming behaviors, rather than overtly sexual or manipulative tactics (Ringenberg et al., 2022). It is therefore possible that young people may not perceive those communication strategies from an offender as negative or unwanted and may view their relationship as a genuine friendship or romantic, leading to underreporting within existing online grooming research. As a result, scholars suggest that wanted, neutral and unwanted forms of communication should be captured within such research (e.g., Finkelhor et al., 2024).

In addition to these conceptual issues, most studies asked about communication received from adults or did not distinguish age. Historically, online grooming was primarily understood as a behavior perpetrated by adults against minors (Wolak et al., 2004; Wolak et al., 2008). Although recent studies have highlighted the prevalence of peer-to-peer grooming and interactions involving individuals whose age and gender cannot be verified (Hunt et al., 2024; McNeish & Scott, 2023), other research continues to identify adults as perpetrators in a substantial proportion of cases—though this varies across studies (Sutton & Finkelhor, 2024). These discrepancies likely reflect differences in data sources, such as police records and self-report surveys, as well as variation in how online grooming is defined and operationalized. Thus, these factors should be considered when interpreting findings of prevalence and victim perceptions of grooming by adult, peer, and unidentified perpetrators. Additionally, deception regarding age is a common grooming strategy, often manifesting as pretending to be another child similar in age to the victim (Ringenberg et al., 2022). Given the anonymous online context, children may not be certain of a communicator's age or may have been tricked into believing it was another child. Online grooming research asking about adult-only interactions will therefore miss this pivotal group. Regardless of the actual age of the communicator, capturing all available grooming strategies is pivotal to understanding children's interpretations of, and responses to, these risky forms of communication that could lead to abuse.

1.3. Risk factors associated with online grooming and solicitation victimization

It is important to understand the factors that place children at increased risk of online grooming and solicitation victimization to assist in identifying children who may be most vulnerable and develop effective safety strategies to prevent such victimization from occurring. Recent research has begun to identify correlates of risk for online grooming and solicitation victimization (Schittenhelm et al., 2024). These have included: (1) individual sociodemographic factors (e.g., female gender, older adolescence); digital behavior patterns relating to (2) digital engagements (e.g., increased time online, disclosure of personal information online, use of adult chat platforms); and (3) digital safety practices (e.g., parental mediation); (4) risk-seeking behavior (e.g., low self-control, risky online and offline behavior); (5) personality traits (e.g., neuroticism, extraversion); (6) mental wellbeing (e.g., depression and anxiety symptoms); (7) other forms of victimization (e.g., cyber- and offline-bullying and abuse); (8) deviant behavior (e.g., cyber- and offline-bullying and abuse); and (9) sexual behavior (e.g., sexting and pornography consumption). However, most studies included in this systematic review featured cross-sectional designs ($n = 27$), meaning the relationship between many ‘risk’ factors and online grooming or solicitation victimization were correlational. Additionally, many of these factors themselves are linked and overlapping. For example, among young people, low self-control is consistently related to increased time spent online and engagement in offline and online deviance (Brewer et al., 2023; Whitten et al., 2024). Notably, there was limited consideration of how specific digital behaviors contributed to participants' likelihood of online grooming or solicitation victimization. For example, Wachs et al. (2020) examined general digital behaviors, including sharing of personal information online and digital safety practices (parental internet mediation). However, they did so without specifying the types of platforms, social contexts, or specific digital privacy or restriction measures being utilized. Given digital behavior patterns and privacy measures have been a strong focus of many interventions designed to protect children online, it is important that research better understand their role in potentially driving or protecting children from online sexual victimization.

1.4. Disclosures and help-seeking responses to online grooming and solicitation

Another key focus of existing online safety interventions is to encourage children to disclose their experiences to other people they trust, namely parents or caregivers. However, none of the studies included in the systematic review by Schittenhelm et al. (2024) examined how children *responded* to grooming strategies beyond a measure of continuing communication with the offender. In general, research exploring responses to, and disclosures of, online child sexual exploitation and abuse is limited. Three recent studies (published since the systematic review) have explored responses to online sexual solicitation victimization: suggesting that

approximately 60% of children disclose their experiences (Mathews et al., 2025), they are more likely to disclose their experiences to a peer rather than a parent (Gemara et al., 2025; Mathews et al., 2025), and increased education about online sexual abuse and certain parental strategies were reported as potential facilitating factors to increase disclosure (Joleby et al., 2024). Similar disclosure patterns were found in a qualitative cross-cultural study exploring how children aged 8 to 18 manage online grooming communication from strangers that was considered unwanted or inappropriate, with children reporting they would be more likely to tell a friend than an authority or online platform (Third et al., 2024). However, the degree to which children respond in different ways—including disclosure to others (e.g., parents, peers, police), in addition to seeking out support services or resources, taking technological measures to restrict the offender, or continuing to communicate—has not been examined quantitatively. Previous studies have also not explored whether those responses depend on the type of grooming strategy experienced, with certain strategies perceived as riskier and more uncomfortable potentially leading to a higher likelihood of disclosure. For instance, while Third et al. (2024) reported that most children preferred ignoring unwanted contact online rather than blocking an individual, these responses were not examined in comparison to different types of grooming strategies.

Understanding children's response patterns to different grooming strategies is important in elucidating the scope of online grooming and its potential impact on children. Moreover, more nuanced understanding of these aspects has immense utility with respect to developing intervention strategies—enabling safe and effective ways for responding to these forms of communication.

1.5. The current study

This study surveyed a sample of children aged 10–17 to examine the prevalence of Australian children experiencing eight different forms of online grooming strategies (consolidated from the 12 strategies identified by Ringenberg et al., 2022), four forms of online solicitation, and the digital behaviors that may relate to those experiences. Further, across grooming strategies, we assessed degrees of comfort with the communication, perceived age of the communicator, and how they were responding with various technological or support-seeking measures. The current study focuses on these experiences in the context of communication received from a stranger they first encountered while online. While children can be sexually victimized online by people already known to them offline (Sutton & Finkelhor, 2024), recent data demonstrates that Australian children are most likely to receive online sexual solicitation communication from an adult unknown to them (Walsh et al., 2025). Moreover, it is possible that interpretations and responses to received communication may be shaped by contextual factors, including whether they were previously known to the victim (Mathews et al., 2024). This was beyond the scope of the current study to consider.

Our aim was to address the current gaps in knowledge regarding child experiences of online grooming and solicitation, and based on the limited existing evidence, answer the following exploratory research questions:

Table 1

Percentage (and number) of participants within each sociodemographic category compared to the broader Australian population.

Sociodemographic	Sample (N = 304)	Australia
Age		
10	12.8% (39)	
11	9.9% (30)	
12	11.8% (36)	
13	13.8% (42)	
14	13.5% (41)	
15	12.8% (39)	
16	13.5% (41)	
17	11.8% (36)	
Gender		
Female	51.6% (157)	50.7% (12,877,635)
Male	48.4% (147)	49.3% (12,545,154)
Non-binary	0.0% (0)	N/A ^a
Location		
NSW	31.6% (96)	31.8% (8,072,163)
VIC	28.3% (86)	25.6% (6,503,491)
QLD	20.1% (61)	20.3% (5,156,138)
SA	5.6% (17)	7.0% (1,781,516)
WA	9.2% (28)	10.5% (2,660,026)
TAS	3.0% (9)	2.2% (557,571)
NT	0.7% (2)	0.9% (232,605)
ACT	1.6% (5)	1.8% (454,499)
Aboriginal and/or Torres Strait Islander		
Yes	16.8% (51)	3.2% (812,728)
Socio-economic status		
1st decile (most disadvantaged)	9.9% (30)	9.9% (2,514,070)
2nd-9th decile (mid-range)	71.7% (218)	79.0% (20,087,395)
10th decile (most advantaged)	17.1% (52)	10.4% (2,648,278)
Missing	1.3% (4)	0.7% (172,886)

^a The ABS do not consider the data from the 2021 non-binary sex category to be of sufficient quality for practical use, see further ABS, 2022c.

1. What proportion of children report experiencing online communications from strangers that are associated with different grooming and solicitation strategies?
2. How do children's interpretations of these communications—in terms of perceived age of the communicator and their own comfort level—and responses vary across different grooming and solicitation strategies?
3. What potential risk and protective factors—across individual characteristics, patterns of digital engagement, and digital safety practices—are associated with experiencing different forms of online grooming and solicitation?

This research offers more nuanced insights into experiences of online grooming and solicitation, and produces a novel empirical evidence base for understanding victimization trends and response patterns.

2. Methods

2.1. Sample and procedures

Cross sectional data was collected from child participants through an online survey deployed by the Qualtrics panel platform (Provo, UT) via an institutional license. In view of prior research finding weak to moderate relationships between risk factors and grooming experiences (Schittenhelm et al., 2024), an a priori power analysis was undertaken (G*Power 3; Faul et al., 2007) indicating a target sample size of approximately 264 child participants at an adjusted alpha level ($\alpha = .006$) for multiple comparisons and power = 90%. A sample of at least this size will allow for detection of weak effects regarding the relationship between grooming and solicitation experiences, and the nine digital behavior risk factors.

Child participants were recruited through Qualtrics' online survey panel. Qualtrics advertised the study to parents and guardians of prospective child participants, who provided consent for their child's participation. Parents/guardians then provided the device to their child for assent to be obtained, after which children were granted access to participate in the survey. Proportional quota-based sampling was employed, ensuring an even number of participants from each age, and that the distribution of sociodemographic characteristics closely adhered to the broader Australian population—though noting the proportion of participants reporting Aboriginal and Torres Strait Islander status in our sample was elevated compared to the broader Australian population (see Table 1; Australian Bureau of Statistics [ABS], 2022a,b). A total of 411 Australian children aged 10–17 participated in the online survey deployed across November and December 2024. Rigorous data cleaning was undertaken to ensure quality of responses, resulting in the removal of $n = 107$ participants for reasons including survey duplication ($n = 70$), suspicious patterned flat-lining or straight-lining responses ($n = 34$), nonsense responses to the text-entry questions ($n = 10$), not residing in Australia ($n = 2$), and speeding through the survey compared to average participant completion time ($n = 2$). The final sample for analysis featured $N = 304$ participants aged 10–17 ($M = 13.57$, $SD = 2.26$). Since the study included minors, participants reported whether they completed the survey with the help ($n = 67$) or presence in the room ($n = 116$) of a parent or guardian. The average survey completion time was 6.03 min ($SD = 4.67$) for participants who did not receive the Grooming Strategies Questionnaire due to skip logic, and 12.32 min ($SD = 15.67$) for those who did.

The study received human research ethics approval from Adelaide University, and participants were assured of anonymity, their right to withdraw at any time, and ability to skip any uncomfortable items. Surveys could be completed alone or with a parent/guardian. Participants were provided state-based phone and online resources for support or further information on online safety, including materials tailored for Aboriginal and Torres Strait Islander individuals. Participants were reimbursed for their time according to the database their parent/guardian was recruited from.

2.2. Measures

The study measured a series of variables (see Supplementary Materials S1 for final survey items), including several items developed for the current study. Content validity was established through a review of current literature, consultation with academic and government experts in the field, and strengthened by cognitive pilot testing with children. This process ensured that, given the novelty of the measures and young age of participants, all items were understood and interpreted as intended. This cognitive testing was undertaken across the first half of 2024 and took the form of in-depth 60-minute interviews with 10 adolescents aged 10–16 (see Supplementary Materials S2 for full pilot details). The below details the final items included in the survey following any necessary revisions from the cognitive pilot testing.

2.2.1. Online communication partners

As an initial measure of whether participants had experienced any contact from a stranger online, participants were asked how often in the last 12 months they received messages, comments, posts, chats or calls from: (a) “someone or some people you didn't already know in real life” (*strangers*), and (b) “family, friends, or other people you already knew in real life” (*known people*), with response items on a 6-point Likert scale from (0) “Never” to (5) “A few times a day”. These two items were dichotomized so that a score of (0) “Never” was maintained, and a score of 1–5 was re-coded as (1) “Less than weekly or more”. Participants who responded 0 “Never” to experiencing communication from strangers online were not presented with the below Exposure to Grooming and Solicitation measures.

2.2.2. Exposure to grooming and solicitation

We developed a new measure to assess children's experiences of grooming and solicitation (see Supplementary Materials S3 for all items). Exposure to grooming-related communication was assessed using items that were grouped into eight separate composite binary indicators, each representing a distinct grooming strategy (personal enticements, external enticements, risk assessment, trust, sexualization, secrecy and isolation, deception, aggression). Similarly, exposure to solicitation-related communication was assessed through four separate composite binary indicators, each corresponding to a distinct solicitation strategy (content requests, sexual requests, content received, meeting requests). Several items across these strategies were adapted from established instruments—the MOGQ (Gámez-Guadix et al., 2021) and Questionnaire for Online Sexual Solicitation and Interaction of Minors with Adults (QOS-SIA; Gámez-Guadix et al., 2018)—excluding items that measured children's engagement in sexual behaviors as this was beyond the scope of the current study. Where items from these existing instruments were included, the wording was adapted to improve comprehension for children as young as 10, in line with feedback from the cognitive pilot testing. Adaptations included broadening terminology to ask about less serious and non-sexual forms of the behaviors in the first instance (in conjunction with adding skip logic) to avoid asking about unexperienced events, adding behavioral examples, and ensuring each item measured a single strategy to reduce confusion. We also developed new items to extend the existing measures, informed by evidence on contemporary offender strategies (e. g., Borj et al., 2023; Ringenberg et al., 2022). This included the addition of distinct personal enticements and secrecy and isolation strategies, as well as new items across the other strategies to capture exposure to additional forms of communication identified in recent literature as being used by offenders as part of those strategies (see Supplementary Materials S3 for further information on all new and adapted items).

Participants were asked if, in the last 12 months, they had experienced communication relating to different grooming or solicitation strategies from a stranger online, answering “Yes”, “No”, “I don't know” or “I don't want to say” to each item. If respondents experienced any of the items within a strategy, they were aggregated into the ‘Experienced’ category. Among the remaining respondents, if they selected “No” or “I don't know” for at least half of the items, they were aggregated into the ‘Not Experienced’ category, and if they responded, “I don't want to say” for more than half of the items, they were allocated to the third category—‘No Answer’. Given that only three participants fell into this third category, these responses were removed and considered missing from further inferential analyses including these strategies. Display logic was applied for the related items within each strategy to ensure participants were not asked further about experiences that they had not encountered (see Supplementary Materials S3 for all display logic).

2.2.3. Interpretation and responses to grooming and solicitation

Where participants answered “Yes” to any items grouped within a strategy, they were also asked three follow-up questions relating to their interpretation and responses to the communication(s) they experienced as part of that strategy (with the solicitation strategies collapsed).

2.2.3.1. Perceived age of communicator(s). Participants nominated their perception of whether the other person (or people) initiating the communication across any of their experiences within that strategy was: (1) younger, (2) similar age, (3) older (but not an adult), (4) adult, and (5) unsure—with the option to select multiple ages as it may pertain to multiple experiences.

2.2.3.2. Comfort level when receiving the communication. Participants rated their average comfort level with the communication(s) they experienced within that strategy on a 5-point Likert scale from (1) “very comfortable” to (5) “very uncomfortable”.

2.2.3.3. Response to the communications. Participants were asked to indicate all the ways in which they responded to the communication(s) experienced within that strategy, categorized as: (1) did nothing, (2) requested to stop, (3) restricted the communicator, (4) withdrew from platform, (5) sought support, and (6) made an official report. These response options were based on prior measures of children's responses to risky online behavior (eSafety, 2021a, 2024).

2.2.4. Risk and protective factors

2.2.4.1. Individual sociodemographic characteristics. Participants reported their age (10–17), gender (boy, girl, or non-binary), and Aboriginal and/or Torres Strait Islander origin (yes, no, or unsure). Participants entered their residential state/territory and their postcode, which was used to calculate their residential socioeconomic advantage and disadvantage based on the Socio-Economic Indexes for Areas (SEIFA; ABS, 2023). The SEIFA indexes the average income and employment status for each residential postcode in Australia, with postcodes coded as a decile ranging from 1 to 10—lower scores indicating greater socio-economic disadvantage, and higher scores indicating greater relative advantage.

2.2.4.2. Digital engagements. Participants were asked how often in the last 12 months they spent engaged in six digital behaviors across apps, websites and video games, with responses measured on a 6-point Likert scale from (0) “Never” to (5) “A few times a day”. Given the rapid emergence of new platforms and varying popularity, we did not focus on these engagements in relation to specific online platforms. Instead, we captured the digital behaviors carried out across platforms, including (a) *sending messages*, (b) *video chatting*, (c) *audio chatting*, (d) *posting content*, (e) *posting information*, and (f) *playing video games*.

2.2.4.3. Digital safety practices. Participants were asked how often in the last 12 months they engaged in 12 digital behaviors to stay

safe online. This was a new scale, which incorporated relevant items from prior research measuring safety strategies used by Australian children while online gaming (eSafety, 2024) and resources for how to stay safe online (eSafety, 2023; see Supplementary Materials S4). Existing items were adapted for the current research to remove their gaming-specific focus, with wording adjusted based on feedback from the cognitive pilot testing to ensure suitability for children as young as 10 and to incorporate relevant behavioral examples to enhance comprehension.

Responses to these items were collected using a 5-point Likert scale from (0) “Never” to (4) “Always”, with the option to select “I do not have an answer for this”. These items were categorized as the following three safety strategies: (a) *instructional parental mediation* (items 1–5, $\alpha = .85$), (b) *restricted access* (items 6–10, $\alpha = .81$), and (c) *age-appropriateness* (items 11–12, $\alpha = .71$). Given the respective alpha scores, composite scores were created by averaging the items within each category, with these scores ranging from 0 to 4, and higher scores indicated a greater mean frequency of each respective online safety strategy. Where participants selected “I do not have an answer for this” for less than half of the items within a category, their composite score was calculated based on those items that did have a response. Where they selected “I do not have an answer for this” for more than half items, a composite score was not calculated, and their response was considered missing for that scale (this included at most $n = 7$ participants for each scale).

2.3. Analytic strategy

To comprehensively address each of the research questions, we adopted a multi-stage analytic approach. To address RQ1, descriptive measures were used to examine the prevalence of participants who received communication from strangers online, and prevalence who experienced grooming and solicitation strategies from those strangers—with correlation coefficients used to assess the likelihood of experiencing multiple strategies together. In line with prior reasoning, we analyzed grooming and solicitation experiences regardless of the estimated age of communicators. However, for an added degree of certainty, we computed an unsupervised clustering model to assess whether there were any unforeseen biases, or latent subgroups within the data, contingent upon the age of communicators (see Supplementary Materials S5). This additional analysis returned a weak average silhouette coefficient of .178, meaning that the data could not be clustered with any confidence (Kaufman, 1990), thus supporting the analysis of the data in aggregate. These findings align with the Finkelhor et al. (2024) assertion that child sex offenders may, at times, pose as children, meaning ages estimated by respondents may not always be accurate. We therefore proceeded by aggregating the groups for remaining analyses.

To address RQ2 and understand children's interpretations and responses to those grooming and solicitation strategies—we used descriptive measures to examine the perceived communicator(s) ages, the mean comfort level of respondents, and the percentage of different responses among those participants who experienced each strategy. This included follow-up analyses using a series of paired samples *t*-tests to examine differences in reported comfort levels depending on the form of grooming and solicitation strategy experienced.

Table 2

Prevalence and interpretation of experienced grooming and solicitation communication.

Strategy	Experienced prevalence (% of total sample (n))	Comfort Mean (SD)	Perceived age (% of experienced prevalence (n))				
			Younger	Similar	Older child	Adult	Unsure
Grooming (any)	65.5% (199)	2.92 (0.97)	26.6% (53)	84.4% (168)	49.7% (99)	23.1% (46)	11.6% (23)
Personal enticements	44.4% (135)	3.13 (1.09)	14.1% (19)	72.6% (98)	37.8% (51)	12.6% (17)	4.4% (6)
External enticements	14.5% (44)	2.73 (1.44)	34.1% (15)	54.5% (24)	47.7% (21)	31.8% (14)	4.5% (2)
Risk assessment	52.6% (160)	2.96 (1.04)	19.4% (31)	74.4% (119)	44.4% (71)	17.5% (28)	6.3% (10)
Trust	53.6% (163)	3.17 (1.05)	14.4% (23)	81.0% (132)	28.8% (47)	8.6% (14)	4.3% (7)
Sexualization	19.4% (59)	2.37 (1.34)	30.5% (18)	45.8% (27)	47.5% (28)	28.8% (17)	3.4% (2)
Secrecy/isolation	25.3% (77)	2.97 (1.37)	28.6% (22)	51.9% (40)	41.6% (32)	16.9% (13)	5.2% (4)
Deception	21.4% (65)	2.28 (1.28)	27.7% (18)	36.9% (24)	38.5% (25)	29.2% (19)	7.7% (5)
Aggression	23.4% (71)	2.36 (1.38)	23.9% (17)	43.7% (31)	53.5% (38)	22.5% (16)	7.0% (5)
Solicitation (any)	30.9% (94)	2.43 (1.20)	11.7% (11)	51.1% (48)	45.7% (43)	24.5% (23)	6.4% (6)
Content requests	21.1% (64)						
Sexual requests	14.8% (45)						
Content received	22.7% (69)						
Meeting requests	19.1% (58)						

Note. Participants' interpretation of communication was gathered collectively rather than by specific strategy for solicitation experiences, thus interpretation data are presented for experiences of any form of solicitation.

To examine the risk and protective factors related to experiences of grooming and solicitation to address RQ3, *t*-test and chi-square analyses were used to examine whether individual sociodemographic characteristics were related to participants' experience of specific strategies, before a series of one-way ANCOVA tests were used to examine whether digital engagements and digital safety practices held a relationship with experiencing grooming and solicitation strategies, controlling for age as a covariate. While correlation analyses showed strong relationships between most digital engagements (see Supplementary Materials S6), each factor represents a unique online activity and thus warranted separate ANCOVA analyses to understand the activities that may relate to young people being targeted. Age was included as a covariate in these ANCOVAs due to a significant, albeit weak, relationship between age and several digital engagements and safety practices (see Supplementary Materials S7). Levene's test returned significant findings across several ANCOVA analyses, indicating the possible violation of homogeneity of variance. Instead of interpreting transformed scores, we applied a more stringent α level of .01 (Tabachnick & Fidell, 2007), which was adjusted to .001 in line with the application of Bonferroni corrections due to multiple comparisons occurring across the nine digital behavior patterns.

3. Results

3.1. Prevalence, interpretation, and responses to grooming and solicitation experiences

Most participants reported communicating with family, friends, or people known to them (95.1%, $n = 289$); many also reported communicating with strangers (75.7%, $n = 230$). Table 2 displays the prevalence of the total sample ($N = 304$) who reported receiving communication related to each grooming and solicitation strategy from strangers online, as well as their reported level of comfort with the experienced communication, and perceived age of the communicator(s).

Overall, 65.5% of the sample experienced at least one form of online communication related to grooming in the past 12 months, with individual strategies ranging from 14.5% (external enticements) to 53.6% (risk assessment), while 30.9% experienced at least one form of solicitation. Of those who reported experiencing either grooming or solicitation-related communication, up to 49.7% reported perceiving that the communicator was older, but still under 18, and up to 24.5% reported suspecting that the communicator was an adult. Alternatively, we note that a large proportion of participants perceived the communicator to be a child similar in age to them (up to 84.4%), and a smaller proportion perceiving a younger child (up to 26.6%). However, due to these data reflecting perceptions of the respondent rather than objective measures (with related logic and analysis detailed in the Analytic Strategy section), the following analyses include all participants who reported experiences of grooming and solicitation communication and are not broken down by perceived age.

Across these grooming and solicitation experiences, the strategies carrying more overt risk—external enticements, sexualization, deception, aggression, secrecy and isolation, and solicitation—were less common, experienced by 14.5% to under a third of participants. In parallel, the more covert grooming strategies—personal enticements, risk assessment, and trust building—were more common, experienced by approximately half of the participants. Experiences of these strategies were correlated, with those who experienced one strategy likely to experience another (r_ϕ ranging from .267 to .810, but with most .300 to .600 and indicating no multicollinearity issues—see full results in Supplementary Materials S8). Mean level of comfort associated with each of the grooming strategies, and solicitation, ranged from 2.28 to 3.17, suggesting that participants felt neutral about the communication—with more covert strategies associated with higher mean comfort (see Supplementary Materials S9 for subsample comparisons).

Across each strategy, participants primarily responded by doing nothing (Table 3; 26.2 to 66.3%) or by restricting the communicator's access to them online (46.6 to 76.1%). Approximately half of the participants who experienced each strategy reported that they sought support or told friends, family, or educators about the communication (43.2 to 57.7%), with about a quarter requesting that the communicator stop sending that type of communication (20.2 to 36.6%). A smaller proportion responded by withdrawing from the platform where they received the communication (8.1 to 25.0%) or making an official report to the platform or authorities (5.6 to 27%). However, given that participants were more likely to respond by doing nothing to strategies identified as more covert, these responses may be influenced by the detectability of each grooming strategy.

Table 3
Responses to experienced grooming and solicitation communication.

Strategy	Response (% of experienced prevalence (n))					
	Did nothing	Requested to stop	Restricted	Withdrew	Sought support	Official report
Personal enticements	61.5% (83)	20.7% (28)	51.1% (69)	8.1% (11)	48.1% (65)	6.7% (9)
External enticements	38.6% (17)	22.7% (10)	59.1% (26)	25.0% (11)	43.2% (19)	27.0% (12)
Risk assessment	65.0% (104)	25.0% (40)	56.3% (90)	10.0% (16)	45.6% (73)	5.6% (9)
Trust	66.3% (108)	20.2% (33)	46.6% (76)	9.8% (16)	55.2% (90)	9.2% (15)
Sexualization	33.9% (20)	35.6% (21)	71.2% (42)	18.6% (11)	54.2% (32)	16.9% (10)
Secrecy/isolation	45.5% (35)	28.6% (22)	58.4% (45)	11.7% (9)	50.6% (39)	10.4% (8)
Deception	26.2% (17)	35.4% (23)	69.2% (45)	15.4% (10)	55.4% (36)	12.3% (8)
Aggression	32.4% (23)	36.6% (26)	76.1% (54)	12.7% (9)	57.7% (41)	23.9% (17)
Solicitation (any)	38.3% (36)	23.4% (22)	61.7% (58)	10.6% (10)	44.7% (42)	23.4% (22)

3.2. Factors associated with grooming and solicitation experiences

3.2.1. Individual characteristics

There was a significant relationship between gender and experiences of deception and meeting requests, with females more likely to receive both strategies compared to males (Table 4; see Supplementary Materials S10 for inferential statistics). There was no relationship between SES and the likelihood of experiencing any of the grooming or solicitation strategies, while older participants were significantly more likely to experience personal enticements, risk assessment, trust building, and secrecy and isolation.

3.2.2. Digital engagements and digital safety practices

Tables 5 and 6 display the descriptive ANCOVA results (and indicate those significant effects) for the relationship between experiences of grooming and solicitation with digital engagements, and digital safety practices, respectively (see Supplementary Materials S11 and S12 for the full ANCOVA results including effect size indices). For digital engagements, participants who experienced grooming and solicitation-related communication reported more frequent engagement across all forms of digital engagement (Table 5). More frequently posting media content was most strongly associated with experiences of grooming and solicitation-related communication, with significant effects across all strategies and effect sizes almost double that (η_p^2 up to .157) of other forms of digital engagement. This was followed by strong effects for posting text content (η_p^2 up to .136) and video chatting (η_p^2 up to .096). Alternatively, more frequently sending messages was only significantly associated with experiencing two forms of grooming strategy, with weaker effects (η_p^2 up to .053).

As shown in Table 6, with respect to the deployment of digital safety practices, results indicated no significant relationship between those who practiced digital safety more frequently (i.e., restricted others from accessing information about the participant, limited internet use to age-appropriate platforms, were subject to instructive parental mediation) and the likelihood of experiencing grooming and solicitation-related communication or not.

4. Discussion

The current study found that experiences of grooming and solicitation-related communication from online strangers were common among Australian children. In answering RQ1 we found that over half of participants reported experiencing communication related to at least one grooming strategy (65.5%), while nearly one-third reported communication related to solicitation (30.9%). More covert grooming strategies, particularly risk assessment, trust-building, and personal enticements, were more prevalent (44.4 to 53.6%) than overtly sexual or aggressive forms of communication (14.5 to 25.3%). In answering RQ2, we found that participants generally reported feeling neutral about these interactions and frequently perceived the communicator to be a peer or similarly aged individual. In addition, we found that responses varied by strategy, with communication related to more covert strategies more likely to be ignored, and more overt strategies more likely to prompt protective actions such as restricting the communicator or seeking support. Finally, in answering RQ3 we found that digital engagement behaviors, particularly posting media and text content online, were consistently associated with experiences of grooming and solicitation-related communication, whereas digital safety practices and most individual sociodemographic characteristics demonstrated limited relationships with experiencing those forms of communication. These findings provide important insight into how children experience, interpret, and respond to potentially harmful online interactions.

Table 4

Descriptive statistics and significance of the relationship between individual sociodemographic factors and experiencing a grooming or solicitation strategy.

Strategy	Sociodemographic factors					
	Gender (% (n))		SES (M (SD))		Age (M (SD))	
	Males experienced	Females experienced	Experienced	Not experienced	Experienced	Not experienced
Personal enticements	48.1% (65)	51.9% (70)	3.41 (1.55)	3.37 (1.48)	14.02 (2.16)**	13.17 (2.27)
External enticements	50.0% (22)	50.0% (22)	3.80 (1.41)	3.34 (1.52)	13.75 (2.19)	13.52 (2.28)
Risk assessment	51.9% (83)	48.1% (77)	3.45 (1.54)	3.32 (1.48)	14.02 (2.11)***	13.02 (2.31)
Trust	52.8% (86)	47.2% (77)	3.39 (1.55)	3.40 (1.47)	13.91 (2.11)**	13.14 (2.36)
Sexualization	49.2% (29)	50.8% (30)	3.71 (1.49)	3.33 (1.51)	13.85 (2.08)	13.50 (2.31)
Secrecy/isolation	42.9% (33)	57.1% (44)	3.29 (1.53)	3.44 (1.50)	14.06 (2.23)*	13.38 (2.25)
Deception	40.0% (26)*	60.0% (39)	3.58 (1.56)	3.35 (1.50)	13.82 (2.15)	13.48 (2.29)
Aggression	56.3% (40)	43.7% (31)	3.66 (1.44)	3.31 (1.52)	13.61 (2.00)	13.56 (2.34)
Content requests	43.8% (28)	56.3% (36)	3.58 (1.59)	3.34 (1.49)	13.89 (2.17)	13.89 (2.17)
Sexual requests	40.0% (18)	60.0% (27)	3.64 (1.58)	3.35 (1.50)	14.04 (2.02)	13.48 (2.30)
Content received	42.0% (29)	58.0% (40)	3.46 (1.57)	3.37 (1.49)	13.88 (2.11)	13.48 (2.30)
Meeting requests	37.9% (22)*	62.1% (36)	3.52 (1.50)	3.37 (1.51)	14.03 (2.08)	13.46 (2.30)
Total N significant	2		0		4	

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 5

Mean (and standard deviation) frequency of digital engagements for participants who experienced a grooming or solicitation strategy or not.

Strategy	Digital engagements					
	Send messages		Video chat		Audio chat	
	Experience	None	Experience	None	Experience	None
Personal enticements	3.76 (1.23)	3.14 (1.66)	3.23 (1.35)*	2.28 (1.60)	3.42 (1.38)*	2.50 (1.70)
External enticements	3.93 (1.28)	3.34 (1.53)	3.55 (1.37)*	2.58 (1.56)	3.82 (1.21)*	2.77 (1.63)
Risk assessment	3.76 (1.26)*	3.04 (1.68)	3.19 (1.37)*	2.16 (1.60)	3.39 (1.39)*	2.37 (1.70)
Trust	3.79 (1.24)*	3.01 (1.67)	3.11 (1.44)*	2.24 (1.56)	3.39 (1.38)*	2.34 (1.71)
Sexualization	3.69 (1.39)	3.35 (1.53)	3.44 (1.38)*	2.53 (1.55)	3.64 (1.27)*	2.72 (1.65)
Secrecy/isolation	3.77 (1.32)	3.30 (1.56)	3.36 (1.33)*	2.49 (1.59)	3.56 (1.31)*	2.70 (1.66)
Deception	3.68 (1.40)	3.35 (1.54)	3.42 (1.36)*	2.52 (1.57)	3.42 (1.52)	2.78 (1.63)
Aggression	3.72 (1.26)	3.33 (1.57)	3.27 (1.42)*	2.55 (1.57)	3.51 (1.37)*	2.72 (1.66)
Content requests	3.87 (1.31)	3.35 (1.52)	3.47 (1.38)*	2.59 (1.56)	3.53 (1.44)*	2.81 (1.64)
Sexual requests	3.94 (1.24)	3.26 (1.55)	3.58 (1.40)*	2.46 (1.52)	3.71 (1.36)	2.66 (1.63)
Content received	3.76 (1.36)	3.34 (1.53)	3.60 (1.15)*	2.51 (1.58)	3.53 (1.26)*	2.76 (1.67)
Meeting requests	3.76 (1.23)	3.14 (1.66)	3.23 (1.35)*	2.28 (1.60)	3.42 (1.38)	2.50 (1.70)
Total N significant	2		12		9	

Strategy	Digital engagements					
	Post media content		Post text content		Play video games	
	Experience	None	Experience	None	Experience	None
Personal enticements	2.93 (1.60)*	1.70 (1.52)	2.60 (1.62)*	1.47 (1.53)	3.44 (1.35)*	2.75 (1.59)
External enticements	3.41 (1.42)*	2.08 (1.65)	3.07 (1.63)*	1.80 (1.62)	3.70 (1.34)	2.98 (1.53)
Risk assessment	2.91 (1.53)*	1.53 (1.54)	2.53 (1.61)*	1.35 (1.51)	3.34 (1.44)*	2.76 (1.56)
Trust	2.90 (1.57)*	1.49 (1.46)	2.58 (1.60)*	1.26 (1.46)	3.40 (1.40)*	2.66 (1.55)
Sexualization	3.22 (1.44)*	2.02 (1.65)	3.07 (1.65)*	1.74 (1.59)	3.54 (1.41)	2.96 (1.54)
Secrecy/isolation	3.17 (1.46)*	1.96 (1.65)	2.90 (1.63)*	1.67 (1.58)	3.57 (1.39)*	2.91 (1.54)
Deception	3.17 (1.54)*	2.00 (1.63)	2.75 (1.71)*	1.77 (1.60)	3.54 (1.35)	2.93 (1.55)
Aggression	3.27 (1.47)*	1.96 (1.62)	2.90 (1.69)*	1.72 (1.58)	3.48 (1.38)	2.94 (1.55)
Content requests	3.36 (1.48)*	2.08 (1.65)	2.93 (1.67)*	1.83 (1.64)	3.67 (1.38)*	2.97 (1.53)
Sexual requests	3.23 (1.55)*	1.98 (1.61)	2.84 (1.74)*	1.74 (1.58)	3.67 (1.37)	2.89 (1.53)
Content received	3.26 (1.41)*	2.03 (1.66)	3.07 (1.47)*	1.74 (1.63)	3.57 (1.24)*	2.96 (1.56)
Meeting requests	2.93 (1.60)*	1.70 (1.52)	2.60 (1.62)*	1.47 (1.53)	3.44 (1.35)	2.75 (1.59)
Total N significant	12		12		6	

* $p < .001$ for significant ANCOVA effect.**Table 6**

Mean (and standard deviation) frequency of digital safety practices for participants who experienced a grooming or solicitation strategy or not.

Strategy	Safety strategies					
	Instructive parental mediation		Restricted access		Age-appropriateness	
	Experience	None	Experience	None	Experience	None
Personal enticements	2.32 (1.04)	2.04 (1.13)	2.65 (0.92)	2.56 (1.09)	2.73 (1.01)	2.67 (1.20)
External enticements	2.35 (1.12)	2.13 (1.10)	2.80 (0.97)	2.58 (1.02)	2.70 (1.02)	2.70 (1.14)
Risk assessment	2.23 (1.06)	2.08 (1.14)	2.60 (0.89)	2.61 (1.13)	2.72 (0.99)	2.67 (1.24)
Trust	2.24 (1.04)	2.07 (1.17)	2.60 (0.98)	2.61 (1.06)	2.71 (1.03)	2.69 (1.22)
Sexualization	2.29 (1.06)	2.14 (1.11)	2.67 (0.93)	2.58 (1.04)	2.68 (1.05)	2.70 (1.14)
Secrecy/isolation	2.46 (1.07)	2.06 (1.09)	2.69 (0.95)	2.58 (1.03)	2.80 (1.06)	2.67 (1.14)
Deception	2.39 (1.01)	2.11 (1.12)	2.75 (0.94)	2.56 (1.03)	2.79 (1.06)	2.68 (1.13)
Aggression	2.41 (1.08)	2.09 (1.10)	2.68 (0.98)	2.57 (1.02)	2.68 (1.08)	2.70 (1.13)
Content requests	2.43 (1.10)	2.09 (1.09)	2.83 (0.88)	2.54 (1.04)	2.90 (1.04)	2.65 (1.13)
Sexual requests	2.28 (1.08)	2.14 (1.11)	2.75 (0.89)	2.58 (1.03)	2.63 (1.05)	2.72 (1.13)
Content received	2.31 (1.11)	2.12 (1.09)	2.70 (0.93)	2.57 (1.04)	2.76 (1.01)	2.68 (1.15)
Meeting requests	2.43 (1.06)	2.10 (1.10)	2.87 (0.87)	2.54 (1.04)	2.82 (1.12)	2.67 (1.13)
Total N significant	0		0		0	

4.1. Prevalence of online grooming and solicitation-related communication

The prevalence rates observed in our study were higher than those reported in previous child survey research. Previous studies typically only focused on *communication from a perceived adult*, with prevalence of specific grooming strategies ranging from 7% to 18%, or they conceptualized grooming more broadly as sexual solicitation or narrowly as unwanted communication, reporting rates between 5.4% and 31.1% (Schittenhelm et al., 2024). Given our survey was framed in the context of communication received from *any*

online stranger, neither the research team, nor the participants, were in a position to validate the communicator's age. Children regularly meet, interact, and form friendships with others their own age online (Subrahmanyam & Greenfield, 2008), and these interactions often include age-appropriate conversations about their personal life, relationships, and identity. Thus, while the communication experiences, and resulting behaviors captured in our survey align with grooming and solicitation-related communication, it is possible that they comprised of typical peer-to-peer relationship building conversations. While it is important to acknowledge this possibility, we do not believe this to be the case.

Given age deception is so common among offenders in the anonymous online context (Ringenberg et al., 2022), it was possible that a higher proportion of communication was in fact being sent by adults than was captured in our sample's age perceptions, especially given the experiences of the sample that we have analyzed. Certainly, the findings of our data validation and clustering testing suggest this to be the case. Therefore, while we acknowledge that not all the experiences in our samples' 65.5% grooming and 30.9% solicitation-related communication prevalence rates may have had the intent to lead to sexual exploitation and abuse, compared to prior research, our results more clearly show the extent of the potential for victimization among young people.

4.2. Interpretation and responses to online grooming and solicitation-related communication

Our findings suggest that participants were more likely to take no action when communication was aligned with more covert grooming strategies (i.e., friendship forming) which were more often perceived as coming from a child, whereas more overt grooming and solicitation strategies (i.e., sexual and aggressive) which were more often perceived as originating from an adult, elicited greater protective or safety-seeking responses.

These findings are consistent with recent qualitative research showing that children make nuanced assessments of online interactions with strangers and may be more likely to employ protective strategies when they perceive clear indicators of risk, or 'red flags' (Third et al., 2024). Third et al. (2024) also found that children often view interactions with unknown others as a normal and potentially beneficial aspect of online engagement, and actively evaluate the trustworthiness and intentions of those they encounter online. Consistent with this, participants in the current study reported generally neutral levels of comfort across each of the grooming and solicitation strategies examined, suggesting that many interactions were not immediately perceived as threatening or inappropriate. However, while participants were more likely to take no action in response to strategies we have characterized as more covert, these findings should not be interpreted as direct evidence that such strategies are less detectable by children as harmful behavior. Our categorization of grooming strategies as more covert or overt is drawn from prior literature, some of which is based on offender interactions with decoys or law enforcement personnel rather than children (Chiu & Quayle, 2022; Ringenberg et al., 2022). Future research should directly examine children's ability to recognize and identify different grooming strategies as potentially harmful.

In line with the disclosure findings reported by Mathews et al. (2025), between 43.2% and 57.7% of participants in the current study indicated that they told someone else about their experience of the communication. Participants were also more likely to disclose the interaction to another person than to make a formal report to an authority or online platform, consistent with the findings of Mathews et al. (2025) and Third et al. (2024). Although a substantial proportion of participants reported that they took no action in response to the grooming and solicitation-related communication, for most strategies a greater proportion indicated that they took steps to restrict further contact from the communicator. This differs from the qualitative findings of Third et al. (2024), in which ignoring the contact was the favored response by children over declining or blocking the communicator. However, the present study extends this literature by examining children's responses to specific grooming and solicitation strategies, providing an understanding of how behavioral responses may vary according to the nature of the communication.

4.3. Potential risk and protective factors for experiencing online grooming and solicitation-related communication

We examined both *individual* and *digital* risk/protective factors associated with young people's experiences of grooming and solicitation-related communication. *Individual factors* were only found to be weakly related. Being older was significantly related to the likelihood of experiencing half of the grooming strategies; however, this effect was not significant for more overt forms (i.e., external enticements, sexualization, deception, aggression and solicitation). While the effect size was small, with a larger sample size, further age-related effects may emerge and align with the majority of prior research based on the patterns of the descriptive statistics (Schittenhelm et al., 2024). A similar finding emerged for gender. Although no statistically significant effects were found, patterns suggest that with greater power, females may be more likely to experience most strategies compared to males—consistent with prior research (Schittenhelm et al., 2024). Lastly, our findings indicated no significant effect of SES—with our measure of SES representing the income, education, employment and housing characteristics associated with participants' residential location. This is in contrast to prior research which has demonstrated public versus private school attendance and lower parental education level to be associated with greater risk of online grooming victimization (Schittenhelm et al., 2024).

With respect to *digital factors*, the results demonstrated strong effects for the relationship between grooming and solicitation experiences and many of the digital engagement patterns. In particular, participants who more frequently posted media or text content were most likely to receive grooming and solicitation-related communication. This is perhaps unsurprising, as increased visibility could make them a greater target (Wachs et al., 2020), consistent with the role of opportunity emphasized in the criminological routine activity theory (Cohen & Felson, 1979) and in other cybercrime contexts (e.g., Holt et al., 2021; Turner et al., 2022). However, on the other hand, increased use of digital safety practices related to guardianship, such as parental internet mediation, implementing privacy and restriction measures, or engaging in age-appropriate online spaces, were not significantly related to participants' likelihood of experiencing grooming and solicitation communication.

4.4. Practical implications

The current study provides new empirical insights into emerging victimization patterns and behavioral responses among young people targeted by potential grooming or solicitation attempts from strangers online. This evidence is vital for informing the development of effective interventions to prevent online child sexual exploitation and abuse. Such interventions must be situated within a shared-responsibility, ecologically integrated framework that recognizes the roles of multiple actors and environments in protecting children, including online platforms, policy systems, communities and caregivers (Baines, 2019; Martinello, 2020). Within this broader context, online safety education represents a key component of these prevention efforts (eSafety, 2021b; WeProtect Global Alliance, 2025), reflecting the need to equip and empower children with developmentally appropriate knowledge and skills to recognize and respond to potentially harmful interactions *before they are sexually exploited and abused*. Consistent with this, children across diverse countries and contexts have identified accessible online safety education as a critical resource for helping them recognize and respond effectively to online grooming risks (Third et al., 2024). By directly examining children's interpretations and responses to these forms of online communications, the current research provides evidence to guide the design of effective educational interventions.

Our prevalence results offer insights into how often grooming and solicitation-related communications are perceived to originate from other children—whether legitimate or not—and highlight the critical need to educate young people about the potential for adults to impersonate their peers. While noting that our findings emerge from descriptive data, the results for interpretations and responses to the communication suggest that a holistic approach, moving beyond teaching children to identify risky communication based on comfort level or whether it comes from an adult, may have utility. That is, educational interventions should also focus on situations where children may feel comfortable, because they do not perceive any harm, while emphasizing that caution should be taken in responding to communication from anyone online. This is particularly important if risky communication is recognized by young people only as contact from an unknown adult, given that a common grooming and solicitation tactic involves adults posing as children to initiate online interactions.

Regarding individual risks factors, our findings suggest that interventions should be targeting young people across the socioeconomic spectrum, but with patterns suggesting girls and older adolescents may benefit from more targeted support. Finally, for digital risk factors, while our findings may suggest that educational intervention strategies might be best directed toward teaching young people to identify risky online communication, rather than relying on digital tools to protect them from it, we note that we cannot determine causal pathways with our analytical method. Indeed, the lack of group difference in adopting protective digital safety practices may be due to those participants experiencing grooming and solicitation and improving their digital hygiene in response. Therefore, we suggest future research examines these effects longitudinally to determine causation.

4.5. Limitations and future directions

This study provides new insight into the extent of online grooming and solicitation experiences among Australian children. Importantly, the size of our sample did not allow for enough power to generalize our conclusions on a national level. It is, therefore, a logical next step for future research to recruit a larger, more representative sample, allowing for further inferential analyses. Particular focus should be given to understanding the factors driving response patterns to improve the evidence base for the development of intervention strategies. For example, insights into how characteristics of the communication and digital behaviors predict response patterns to the grooming and solicitation communication may be pivotal. Additionally, a large proportion of our sample (38%) reported the presence of a parent or guardian during their completion of the survey, which may have led some participants to withhold reporting certain experiences. It may be useful for future research to consider and compare location of respondent alongside behaviors reported. A further important consideration relates to the psychometric evaluation of the newly developed measurement instruments, including measures of grooming and solicitation exposure and use of online safety strategies. Content validity was established through drawing on existing measures, contemporary research, and consultation with experts, alongside rigorous procedures to ensure clarity, relevance, and age-appropriate interpretation, providing a strong foundation for their use in this study. However, comprehensive psychometric testing was not undertaken, and findings derived from these measures should be interpreted with some caution, particularly with respect to their reliability and extent to which they consistently reflect the underlying constructs. Future research should conduct more extensive psychometric evaluations to confirm this.

To the authors' knowledge, no prior research has directly engaged children to assess their ability to actively detect a range of risky grooming and solicitation strategies. However, the degree to which these strategies are detectable by children, and the factors contributing to detection, is likely crucial for the design of educational interventions. In the current study, these threats were framed as various types of online communication from strangers. Participants were neither primed nor assessed on whether they recognized these grooming and solicitation communications as risky or associated with sexual exploitation and abuse. Two recent studies have shown promising effects of brief educational interventions in enhancing children's *knowledge* of online grooming and solicitation risks (Alderman et al., 2024; Calvete et al., 2022). Thus, we recommend that future research explore children's capacity to *detect* grooming and solicitation tactics in immersive, real-world contexts (cf. Fietta et al., 2024), and how this may be enhanced by educational interventions. Further, although participants in the current study generally reported feeling neither comfortable nor uncomfortable when receiving these communications, future research should examine the longer-term psychological impacts of exposure to online grooming communication. This represents an important gap in the literature, with a small number of existing studies—largely conducted in offline contexts—demonstrating that grooming experiences may have significant and enduring consequences into adulthood (Winters & Jeglic, 2022).

CRedit authorship contribution statement

Katie Logos: Writing – review & editing, Writing – original draft, Resources, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Russell Brewer:** Writing – review & editing, Resources, Methodology, Conceptualization. **Kathryn C. Seigfried-Spellar:** Writing – review & editing, Resources, Methodology, Conceptualization. **Edward Palmer:** Writing – review & editing, Resources, Methodology, Conceptualization. **Sarah Napier:** Writing – review & editing, Resources, Methodology, Conceptualization. **Mariesa Nicholas:** Writing – review & editing, Resources, Methodology, Conceptualization. **Bryce Westlake:** Writing – review & editing, Resources, Methodology, Conceptualization. **Timothy I.C. Cubitt:** Writing – review & editing, Resources, Methodology, Formal analysis, Conceptualization.

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Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Mariesa Nicholas reports a relationship with Office of the eSafety Commissioner that includes: employment. Sarah Napier reports a relationship with Australian Institute of Criminology that includes: employment. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.chiabu.2026.108291>.

Data availability

Data files are lodged on the Open Science Framework at <https://osf.io/sb78e>.

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