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Parents' Awareness on Online Predators: Cyber Grooming Deterrence

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Abstract

The rapid increase of information and communications technology is manifested by its tremendous positive outcomes on the economy, business, and society. However, online application use by adolescents, especially mobile technology, has caused uneasiness among parents owing to cyber grooming incidents. This study reflects on the current cyber grooming situation. Investigating the current state of online grooming and the means through which parents can ensure the online safety of their adolescents from adults offering "candy" or wanting to start a relationship is necessary. Teen behavior related scholars believe that parents play a vital role in building safe environments. We conducted a qualitative study by interviewing 19 parents with children between the ages of 13 and 17 years in an urban setting to determine the level of the parents' awareness. Interviews were conducted based on five key components, namely, social media, unknown friends, sex education, private chats, and family time. The results present the actual situations of the parents and highlight related challenges as well as adolescents' ignorance and vulnerability to cyber grooming. Results are mapped to three main determinants of cyber grooming, namely, parental factors, self-efficacy, and self-regulation. We conclude with insights and recommendations for parents, schools, and the government to be vigilant for online predators by increasing awareness of cyber grooming.

Keywords

awareness, cyber grooming, cybersecurity parents, privacy, general qualitative inquiry, self-efficacy, adolescents

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Keywords: awareness, cyber grooming, cybersecurity parents, privacy, general qualitative inquiry, self-efficacy, adolescents

Introduction

The danger of adolescents falling victim to cyber grooming is alarming (David, 2017). This issue is not surprising, as adolescents spend at least six to seven hours online (MCMC, 2018). According to UNICEF (2017), one third of the world's Internet users are below the age

of 18 years (UNICEF, 2017). The Online Grooming of Children for Sexual Purposes: Model Legislation & Global Review (2017) reported that an estimated 750,000 sexual predators are online at any given moment (International Centre for Missing & Exploited Children, 2017). Teen sexting is alarming and raise concerns among various stakeholders (Anastassiou, 2017). Grooming describes the efforts of an adult to build a relationship with adolescents to gain their trust for sexual or trafficking purposes (Schoeps et al., 2020). Adults who gain the trust of children and adolescents and engage in sexual activities through an online platform are called online predators. Predators, or groomers, use online platforms to search for their victims, which is called cyber or online grooming. The cyber grooming of children by predators for sexual abuse is a global problem that requires continuous awareness through research and practice (Whittle et al., 2013). Owing to increasing awareness and the need to evaluate its status, researchers are focusing on adolescents and sexual abuse through cyber grooming. Sociopsychology scholars are interested in how parents incorporate interpersonal strategies to mitigate the negative effects of the Internet and mobile technology on their children (Clark, 2011; Nikken & Graaf, 2013). Clark (2011) suggested that interactions between parents and children require rethinking. In addition, Clark called for scholars to evaluate parental mediation theory that posits three types of techniques, namely, active, restrictive, and co-viewing strategies, as parental mediation strategies. Such strategies can be used to consider the emerging participation learning strategy that involves the interaction of parents and children through digital media (Clark, 2011).

Predators, or groomers, can interact easily with children and adolescents through the Internet, chat platforms, and smartphones. Parents give children and adolescents smartphones with 24/7 Internet connection for various reasons. Thus, adolescents can spend tremendous amounts of time playing online games. Game platforms with private messaging tools pose considerable dangers to teenage girls and boys. Minecraft, which is a popular virtual environment-building game among adolescents, is a clear example of how online games can be used by online predators to initiate conversation with potential victims. Adam Isaac, a 23-year-old Minecraft player, admitted to using the game not as a virtual playground to expand the imagination but as a platform to lure adolescents to engage in sexual conversation. Isaac was jailed in 2015 after being found guilty of persuading and asking sexual questions to two boys, aged 12 and 14 years, as well as requesting indecent photographs (Herd, 2017). Parents give their adolescents smartphones to contact them after school or to manage subject-related chats. However, evidence on whether parents are au courant with information on tools and techniques that can prevent online predators from establishing relationships with their adolescents is lacking.

Adolescents are among the most vulnerable groups aged between 10-19 years old. Moreover, teenage years are characterized by hormonal changes, new academic levels, exposure to social changes, emotion volatility, and peer pressure. Adolescents are tempted to explore new things but experience increasing parental supervision. In addition, adolescents often feel overwhelmed with such changes and are prone to external communication and relationships that may pose dangers. The proliferation of information and communications technology (ICT) enables adolescents to spend long periods of time in the cyber world, thereby exposing themselves to cyber threats. Scholars claim that the dark side of the cyber world is increasing owing to ease of access of predators to children and adolescents. Online grooming predators target girls and boys. Research on children and adolescents in Malaysia confirms that such groups are vulnerable to cyberbullying (Balakrishnan, 2015, 2017; Yusuf et al., 2018a; Yusuf et al., 2018b) and cyber trafficking (Leng et al., 2014). Hence, protecting adolescents from the undesirable consequences of interacting with and meeting online predators is crucial.

Parents are seemingly alarmed by cyber grooming, and several have learned to use the Internet to study how the pattern works. In 2016, more than 7 out of 10 parents sought or

received information or advice on how to help their children avoid online risks (Ofcom, 2016). However, despite parents monitoring their children's activities on smartphones, predators continue to lurk in social media or chat application platforms to interact with adolescents. Predators target children undergoing puberty when they are most vulnerable and tend to explore. Predators take advantage of children in this phase by first gaining their trust then later initiating physical contact. In the UK, Russell Myers, who is a chief investigative reporter, stated that reports of children being groomed on the Internet have increased fivefold in the past four years (Myers, 2017). The total number of reported cases across England and Wales increased from 182 in 2012 to 1,005 in 2016 (Myers, 2017).

Given the dark side of ICT, the Council of the Association for Information Systems has introduced a grand vision, that is, the ICT-enabled bright society, to prevent undesirable activities on the Internet. This current study is an extension of this initiative. We expect to create au courant parents who can provide adolescents with a safe platform that is free from risks from online predators.

Current initiatives in the Malaysian education system indicate that schools are actively integrating ICT in teaching and learning. Although this initiative will undeniably improve adolescents' ICT competency and thinking ability, the dark side involves the emergence of ignorance toward cybersecurity and privacy among children and parents. Hence, online grooming cases in Malaysia have increased as parents allow their adolescents or eldest children to use mobile devices for this purpose. A 2015 survey of school children in Malaysia (David, 2017) revealed the following statistics:

- 1 in 10 children has been asked to upload intimate photos or videos of themselves on the Internet.
- A 300% increase in Internet-initiated rape cases was recorded in the country between 2010 and 2015.
- Nearly 80% of reported rape cases by predators in Malaysia in the past two years involved Internet acquaintances, and most of the victims was below 18 years of age.

Against this background, this study aims to investigate parents' awareness of cyber grooming, specifically pertaining to adolescents, to identify factors that can reduce cyber grooming and evaluate possible solutions for parents to play a role in building a bright society. The study reviews the literature on cyber grooming in Malaysia, factors influencing cyber grooming, and existing prevention methods. This paper provides a brief outline of the method used to collect data and detailed information. Findings from 19 interviews are presented through various graphical representations. Finally, we conclude with recommendations on how to build a bright society in Malaysia.

Malaysian Chapter

Recent statistics show that children comprise 9.3 million (28.5%) of the total Malaysian population, which is 32.6 million (Department of Statistics Malaysia, 2019). The total child population comprises 4.8 million boys and 4.5 million girls. In 2018, approximately 1.3% (28.7 million) of Internet users in Malaysia were from the age group of below 20 years (2018 Internet users survey by Malaysian Communication and Multimedia Commission). Users below 20 years of age reportedly used the Internet daily for an average of 6.7 hours. Smartphones (93.1%) were the main devices used to access the Internet. In addition, communication application users comprised 27.8 million. The most popular communication applications were WhatsApp (98.1%), Facebook Messenger (55.6%), WeChat (36.8%), and others, such as

Telegram, Skype, Line, and KakaoTalk. Facebook (97.3%) was the most popular social networking site (SNS), followed by Instagram (57%) and YouTube (48.3%). Furthermore, the report revealed that 62.4% of parents were aware of parental controls, whereas the remaining 37.6% were unaware of such features. Figure 1 shows the actions taken by parents to ensure their children's online safety (MCMC, 2018), the most common of which is setting rules and limits on Internet usage.

Figure 1
Actions of Parents to Ensure Child Online Safety (MCMC, 2018)
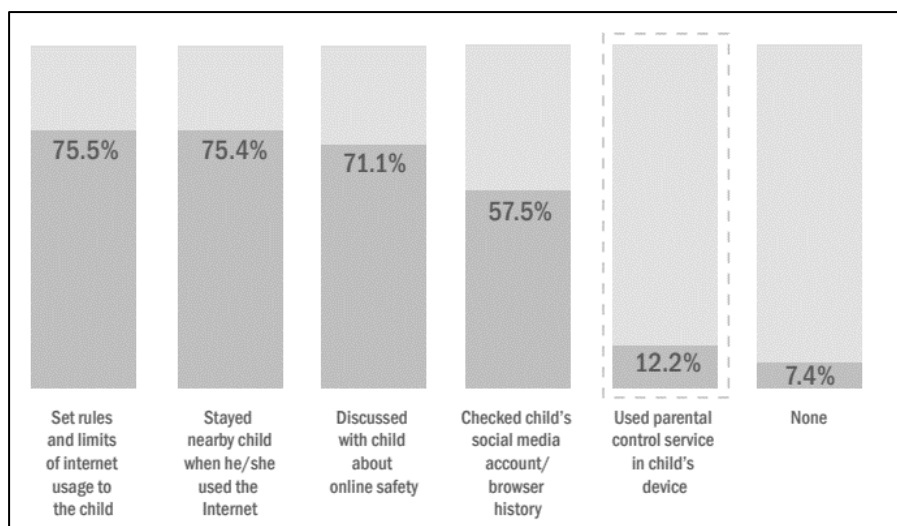
According to the 2015 Digi CyberSAFE survey, more than 90% of schoolchildren in Malaysia used the Internet, 83% of whom were susceptible to online dangers owing to poor supervision (Digi CyberSAFE, 2015). The Royal Malaysian Police (Sexual, Women and Child Investigation Unit) and 2015 Digi CyberSAFE school survey reported that 80% of victims raped by an Internet acquaintance were children between the ages of 10 and 18 years. In addition, 26% of cyberbullied schoolchildren were between the ages of 13 and 15 years (Digi CyberSAFE, 2015). An overwhelming 80% of child sexual predators searched for their victims through mobile chat applications (e.g., WeChat, Kik, BeeTalk, Facebook Messenger, and so on). UNICEF revealed that 40% of Internet users in Malaysia are children and young people under the age of 24 years (UNICEF, 2017). Predators can approach children through unprotected social media profiles, chat applications, and online gaming forums. The largest national survey on the cyber safety of schoolchildren in Malaysia showed that more than 70% of children had reported being victims of online harassment, and 26% had been cyberbullied (UNICEF, 2017). In 2008, Richard Huckle, a 30-year-old British man, focused people's attention toward rural Kuala Lumpur, Malaysia. Pretending to be a Christian community volunteer, he gained the trust of hundreds of children and their adult guardians. In 2016, Huckle was given 23 life sentences after pleading guilty to 71 counts of child offenses, his youngest victim being only 6 months old. He stated on a pedophilic website that impoverished children are easier to seduce than middle class Western children.

Cyber Grooming

Adolescents are generally at a stage in their life when they experience issues with self-esteem, and predators try to use this vulnerability to their advantage. Adolescents who experience sexual solicitation online (though not necessarily from an adult) may feel upset,

afraid, embarrassed, distressed, and stressed; be unable to stop thinking about the incident, jumpy, or irritable; lose interest in things; engage in substance misuse; and experience depressive symptomatology. Moreover, families, friends, schools, living environments, and the Internet can contribute to this issue in the following ways (Helen et al., 2014):

- Self: Having low self-esteem, feeling lonely, and hitting a low point in life
- Family: Being from a reconstituted family, experiencing fights at home, having parents who are separated, being distant from family, experiencing illness within the family, lack of discussions between parents and children regarding online safety
- Friends: Bullying and fighting with friends
- School: Lack of information on online safety
- Living area: Being bored with living environments
- Internet use: Speaking to strangers online, owning an Internet-enabled device, spending long periods online, and using the Internet in the bedroom

Although the effect of offline sexual abuse on a young person has been studied widely and the potential consequences of child sexual abuse have been identified, the effect of online grooming on each victim is unique. Numerous victims display considerable toughness when dealing with the effects of sexual abuse. The following excerpt from Whittle, Hamilton-Giachritsis, and Beech (2013) explains it well:

> Whether a victim experiences a particular problem or not is a result of complex interactions between a number of factors; including how the individual victim makes sense of the abuse, the nature of the abuse, and the reactions and support given to the victim following abuse and other life experiences. (Whittle et al., 2013, p. 59)

Past research on online grooming highlights five key contexts that can contribute to building a safe society and creating au courant parents, which are described in Table 1.

Table 1
Context of Cyber Grooming

Variables	Descriptions	Sources
Family Time	Family time enhances family capital in terms of relationship, bonding and trust between each member. When there is trust and bonding between children, children will be less likely to be online grooming victims.	Hoffman et al., 2006; Taani et al., 2017
Social Media	Social media as the tool to get connectedness with children and adolescents to establish relationship by online sex predators. Sexual aggression is intended towards minors. The victims often agree to the persuasion of the predators to meet face to face with the goal towards sexual victimization.	Albert & Salam, 2012; Barber & Bertez, 2014; Briggs et al., 2011; Craven et al., 2007
Internet Time	Using Internet for a specific time allocated. Children who spend more time with their mother have higher level of perceived support and less inclined to be a victim. Younger Internet users are prone to use longer time on Internet.	Gunuc & Dogan (2013); Morgan & Ravindran (2013); Mubarak & Mani (2015); Taani et al. (2017)

Share Secrets	Parents can be unaware of children's activities online or chat apps. For some reasons, children may keep secret about their new friends who communicate about relationship or sexual behavior. Disclosing private information to new friends can lead to online grooming	De Souza & Dick, 2008; Light et al., 2008; Wisniewski et al., 2013
Sex Education	The importance of parents' role and skills in giving sex-related education within family. Giving the right knowledge of healthy sexual behavior coupled with cultural values will reduce teenage pregnancy and online grooming victimization.	Shtarkshall et al., 2007; Walker, 2004
Unknown or New Friends	Motivation to join social media is to make new friends online or fortify existing offline friends. Once registered, children usually receive pokes, friend requests, and invitations from news feeds. The online friends-making extends to accepting friend requests even from unknown people. There is also the possibility of befriending non-human objects or fictitious characters.	Barber & Bertez, 2014; Brandtzaeg et al., 2010; Light et al., 2008
Chat Apps	Online sex predators use various tools to establish connection with children and arrange for a meeting. This includes chat room and popular chat apps.	Light et al., 2008; The World Bank, & The International Centre for Missing & Exploited Children, 2015

Determinants of Cyber Grooming Deterrence

The literature on the role of parents in deterring cyber grooming identifies three main factors. The conceptual framework of this study on adolescent online safety is derived from Mubarak and Mani (2015). Mubarak and Mani (2015) they studied the correlation between adolescent cyber safety and parental awareness, adolescents' self-efficacy, and self-regulation. A survey was conducted on 340 adolescents between the ages of 12 and 17 years from two high schools in metropolitan South Australia. The study revealed that parental restriction, guidance, and monitoring; self-efficacy; and self-regulation significantly influence adolescents' Internet use. Moreover, the study was based on social cognitive theory by Bandura (1989). Hsiao et al. (2007) explored parents' awareness of laws and technologies for privacy protection. The authors emphasized that parental awareness is key for children's online safety. Parents who are unaware of laws on privacy protection and technologies protecting online privacy risk exposing their children to cyber threats (Hsiao et al., 2007). According to Machimbarrena, Calvete, González, Bardón-Fernández, and Cabrera (2018), cyber grooming co-exists with other activities, such as cyberbullying and sexting. The authors highlighted the importance of evaluating accompanying risks when analyzing primary ones (Machimbarrena et al., 2018). Adolescents who engage in online sexual discourse with a stranger expose themselves to other risks. The authors stressed further that sexualized risk behavior, along with grooming and sexting, scored higher than other risks.

Based on the discussion, we include "techniques" as an indicator of parental factors. Techniques refer to non-computer-related methods that give parents a certain level of control over their children's online activities and privacy, such as open communication, outdoor activities, and family time (Hsiao et al., 2007). The definitions and sources of all the variables are taken from Mubarak and Mani (2015) and Hsiao et al (2017), as described in Table 2. Based on the literature, we determine several determinants and measures that may influence cyber grooming deterrence (Table 2).

Table 2
Determinants of Cyber Grooming Deterrence

Determinants	Measures	Definition	Sources
Parental Factors Parental monitoring, restriction and guiding factors are posited to lead to cyber grooming deterrence	Restriction	Restriction software and rules used by parents, internet service provider, and caregivers. How they control what their children do online and what tools they use to protect their privacy	Ericson 2001; Patterson & Stouthamer-Loeber 1984; Pettit et al. 2001; Steinberg, 2000; Ybarra & Mitchell, 2004; Wang et al., 2005
	Monitoring	Parents be friends of their child in SNS, check screen when child is online, and monitor SNS, chat sites, and emails.	Livingstone & Helsper, 2008; Valcke et al., 2010; Wang et al. 2005
	Guiding	Parents guide online surfing / activities and discuss harmful activities	
	Parental Techniques	Techniques that are not computer-related to have some level of control over their children's activities and privacy online such as open communication, and family time	Hsiao et al., 2007
Self-Efficacy "Self-efficacy beliefs affect the quality of human functioning through cognitive, motivational, affective and decisional processes" (Bandura, 2012, p. 13).	Legal awareness	Parents know the law related to online activities, where to report	Bandura, 1997; Hsiao et al., 2007; Pajares, 1997; Vancouver et al., 2018.
	Tools and Technology Awareness	Parents know how to use security measures such as password, virus, web cam, and scam emails, etc. Parents know about setting privacy in SNS	
	Online Activity Awareness	Regarding what children do online, most parents admit to knowing only some of the site's children go to.	Hsiao et al., 2007
Self-Regulation Self-regulation refers to the degree to which learners are cognitively, motivationally, and behaviourally active in their learning (Schunk & Ertmer, 2000)	Contact Avoidance	Establishing contacts with strangers/predators online	Bandura, 1991; Kanfer, 1970, 1971; Schunk & Ertmer, 2000
			Hsiao et al., 2007
	Limited Use	Limited use of chat rooms, online messengers, people nearby, online games, and social networking for only a limited time and people that parents and child know	

The final concept model is shown below:

Figure 3

Conceptual Framework of Cyber Grooming Deterrence
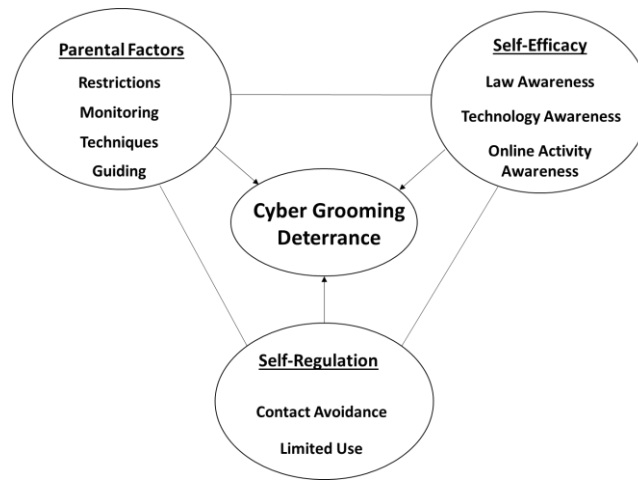
Based on literatures, the conceptual framework presented above highlights three major determinants cyber grooming deterrence. In the context of parents and adolescents in Malaysia, we posit that these determinants can shed light to the current situation.

Method

In this study, we adopted an interpretive research paradigm and employed a generic qualitative inquiry research method (Caelli et al., 2003). This method is suitable for study that has no philosophical assumptions compared to other specific qualitative methodologies (Caelli et al., 2003). This choice of method was appropriate for this study as the topic is sensitive in nature, parents' unwillingness to share about their children, and inability of this research to offer change to solve problem faced by parents as in other qualitative methods such as action research. The following Figure 4 shows a stepwise procedure that was used in this study informing the objective and outcome of each stage:

Figure 4

Steps in Research Process
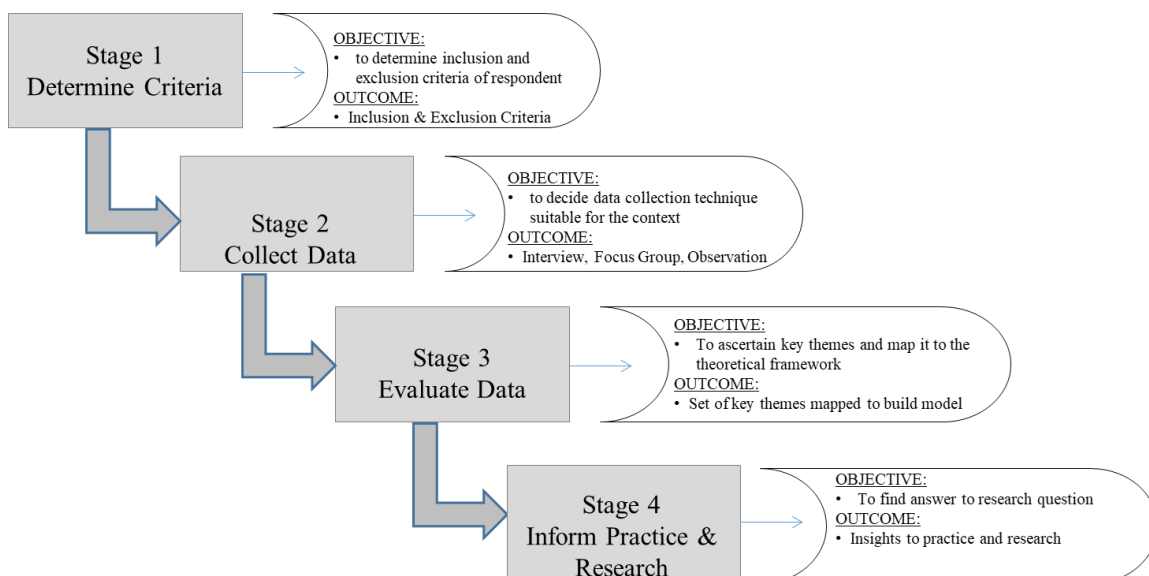
In stage 1, we determine criteria of inclusion and exclusion of respondents. This is followed by data collection in stage 2. At this stage, suitable data collection technique was decided. We chose interview as the suitable technique using flash card method. In Stage 3, data collected was evaluated using NVivo software to extract themes emerged from interviews by questions and keywords. Finally in stage 4, we attempt to answer the research questions, and provide insights to practice and research.

Individual parents were the unit of analysis sampled for the interviews. To delineate the sample universe, inclusion and exclusion criteria were specified. The inclusion criteria included parents of at least one child in the adolescence years. Adolescence years range from 13 to 19 years. The parents should have lived in Malaysia for more than two years, regardless of ethnicity and nationality. Single, working, or unemployed parents were included in the inclusion criteria. The exclusion criteria included parents with working or adult children above 19 years old. Next, we devised a sample strategy using convenience sampling to specify inclusion categories for the sample and ensure respondent heterogeneity. This sampling method is used in social research (Robinson, 2014). Demographic heterogeneity was emphasized, as the respondents were selected from different gender, ethnic, and socio-economic groups. The sample size for this study was n = 19 participants. Based on the guidelines by Smith, Flowers, and Larkin (2009), this sample size is sufficient in scope for developing cross-case generalities. We identified nearby locations for potential participants based on proximity and their willingness to participate in the study (i.e., parents waiting at schools or shopping malls). We interviewed individuals who met the criteria on a first-come-first-served basis until the sample size quotient was reached.

In terms of qualitative research trustworthiness and validity, this study enhanced contexts, rigor, transparency, coherence, impact, and importance, as suggested by Yardley (2000).

Table 3
Qualitative Research Validity

Validity Components	Validity for this study
Context	Contextualized sample prevents unwarranted generalization. Hence, the sample for this study are based on contextual richness by location. In this case, school and shopping malls are seen as common place to identify participants who might possess all the inclusion criteria
Rigour	Rigour is about the adequacy of the sample in providing right information for this study. In this study, the inclusion criteria were met for all the respondents interviewed. Overall, the sample fit to the research objectives.
Transparency	Transparency aims to remove any conflict of interests or possible bias. In this study, the participants were conveniently chosen based on first-come-first serve without any preference to races, ethnic or age.
Coherence	Coherence is maximized by fitting the research aims, methods, sampling and analysis supported by literature and theories. We believe that this study has reasonable coherence to all the important components of a research.
Impact and Importance	The relevance of this study clears towards practice and theory.

Interviews were conducted for two months in three shopping malls at Klang Valley (the economic hub of Malaysia) on weekdays and weekends. Respondents were randomly approached to inquire if they are willing to participate in this research. Mainly, we approached parents who were seated in coffee shops and common lobby of the malls. One of the reason the

parents agreed for participate was the flash card method of data collection. We used the flash card method to prompt the parents to share experiences and thoughts based on eight keywords. A card prompted a parent to share anything that came to mind relating to a keyword. A set of questions was used to guide the respondents as shown in Table 4.

Table 4
Interview Keywords and Interview Direction

Key Words	Direction of Interview
Family Time	• Do parents have family time? • How does the family spend their time together? • How do parents feel about the family time?
Social Media	• Do their teens use social media with their permission? • Do parents become friend with their teens on social media to know all their postings? • Do parents check their social media presence?
Internet Time	• Do parents provide specific Internet time at home? • Can parents freely use the Internet at home or only given during break time after school (6-8 pm)? • Do teens have data plan in their smartphones?
Share Secrets:	• Do the teens share secrets with parents? • Do parents think that their children are keeping secrets by way of hiding themselves in room while using smartphone? • Do teens hide what they are doing with their gadgets when parents pass by? • Do they sense that their children are keeping secret?
Sex Education	• Do the parents teach teens about sexual education at home? • Or do they rely on school to do so? If yes, what hinders parents from discussion on sex education to their children? • Do parents think it is important for their teens to know about sex at this age?
Unknown Friends	• Is there any possible friends do their teens have that their parents are unaware of? • Do parents check teens' friends in social media and discuss on this with their teens? • Is it important for parents to know all their teens' friends?
Chat Apps	• Do parents allow free communication in chat apps using children's smart phone? • Do parents check the purpose of each communication of their teens via chat apps such as WhatsApp? • Do parents allow different types of chat apps such as snapchat, WeChat and so on? If yes, how many chat apps are allowed? • Do parents know any risk involved in the chat apps? • Do parents inform teens not to communicate with unknown friends who introduce themselves in chat apps via people around function?
Online Grooming	• Have parents heard about this term? • If yes, do parents understand what about online grooming is • If no, would they like to know what it is? • What is their possible recommendation to reduce online grooming incidents in Malaysia? • How do they plan to implement it in their family?

Data generation from the interviews conducted was based on focusing for keywords in table 4, noting the key points indicating the existence of practice, concept and understanding, selecting the key themes, eliminate unrelated themes to extract key themes (using NVivo software), and capturing data relevant to theory and practice (Goldkuhl, 2019). Data generated is described in the data flow (Figure 5) as suggested by Goldkuhl (2019). Every life reality of parents about their adolescent were extracted for data generation using flash card related to keywords by researcher to parents. Data generated were documented as answers for each of the keywords in notes and recording format.

Figure 5
Data Generation through Interview (adapted based on Goldkuhl, 2019)
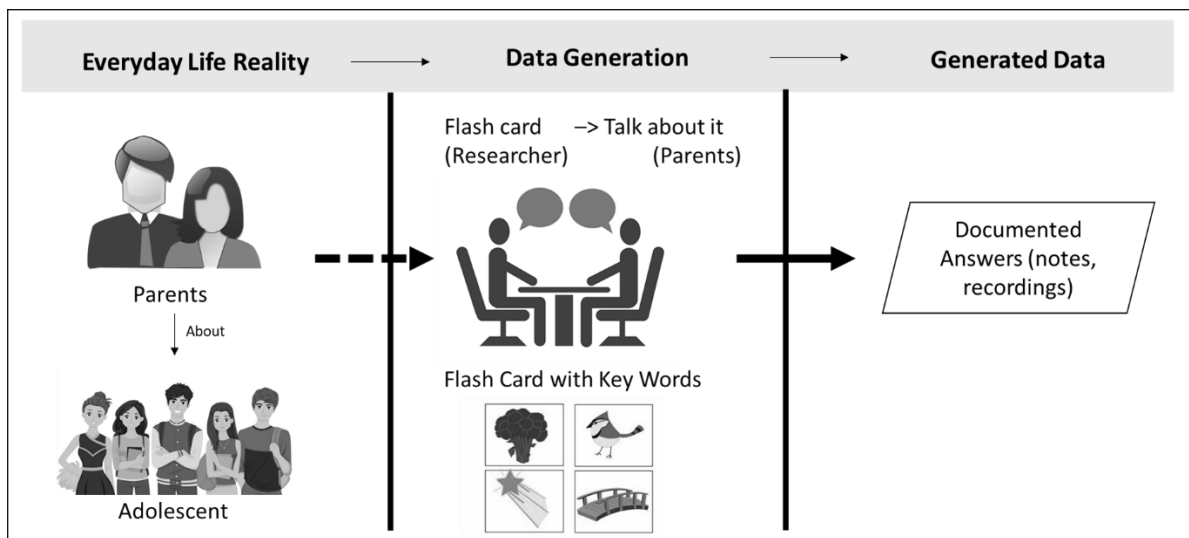
Data analysis was carried out using NVivo 12 Plus for Windows to identify common themes. A word frequency test was employed for each question. Initial themes were generated by the word cloud visualization tool in the NVivo software. Resulting themes were scrutinized further through elimination to form meaningful categorizations and interpretation using a tree map diagram. Steps taken to analyze the data was based on six stages of thematic analysis by Braun and Clarke (2006) as presented in the following Figure 6:

Figure 6
Thematic Analysis Steps (Braun & Clarke, 2006)
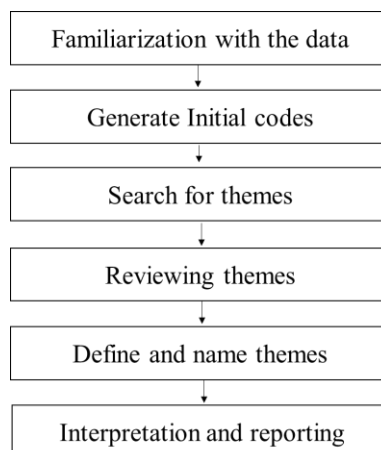
Results obtained from the analysis are organized by sections based on the main six keywords of this study. The results were derived by presenting the themes, related verbatim and interpretation therein. Word clouds and tree map obtained from NVivo software frequency test are presented to support the thematic analysis. The quality control steps undertaken to ensure the trustworthiness of the data includes conducting coding checks and detail reporting.

Result

Demographic Profile

The respondents were designated as Persons 01 to 19. Their gender, working status, spouse's working status, number of children, and children's age range were recorded. The details are shown in Table 5.

Table 5
Demographics of Participants

Respondents	Gender	Working Status	Spouse	No of Children	Children's Age		
					13-18	10-12	1-9
Cases\\Person 01	Female	Working	Working	2	1	1	
Cases\\Person 02	Male	Working	Not Working	0	1	1	
Cases\\Person 03	Male	Working	Not Working	2	2		
Cases\\Person 04	Female	Not Working	Working	1	1		
Cases\\Person 05	Female	Working	Single Parent	4	1	2	1
Cases\\Person 06	Female	Working	Single Parent	1	1		
Cases\\Person 07	Female	Working	Working	4	2	1	1
Cases\\Person 08	Male	Working	Not Working	3	1	1	1
Cases\\Person 09	Female	Working	Working	5	1	3	1
Cases\\Person 10	Female	Working	Working	3	1	1	1
Cases\\Person 11	Female	Working	Working	2	1	2	1
Cases\\Person 12	Female	Not Working	Working	1	1	1	
Cases\\Person 13	Female	Working	Working	2	2	1	1
Cases\\Person 14	Female	Working	Working	2	1	1	
Cases\\Person 15	Male	Working	Working	2	2		
Cases\\Person 16	Female	Working	Working	1	1		
Cases\\Person 17	Female	Working	Working	2	1		1
Cases\\Person 18	Female	Working	Working	1	1		
Cases\\Person 19	Female	Not Working	Working	2	1		1

Overall, most of the respondents were female (83%); 48% of the respondents indicated that least one parent was employed, whereas 35% indicated that both parents were employed. Only 17% of the respondents were single parents, most of whom were divorced. Table 6 presents the gender and working status of the interviewed parents.

Table 6
Gender and Working Status of Respondents

Categories	No of Respondents (%)
Female	15(79%)
Male	4(21%)
One Parent is not working	3(16%)
Both Parents are working	16(84%)
Single Parent	3(16%)

Key Findings

Family Time

The majority of the parents identified mealtimes and weekends as family time. Some of the parents spent weekends with their family by dining out or watching a movie. Others spent family time by going on long holidays, to the park daily, or attending sports event. The parents indicated that they talked to their children daily on the way to school to gauge their feelings. Table 7 presents activities for family time and frequency (categorized as daily, weekly, or occasionally).

Table 7
Family Time and Frequency

| Family Time	Responses
Daily	Family time is having meals together and going out as a family Dinner and weekends Dinner time only Evening, fetching from school Dinner time, before school, Going out during the weekend Going out on the weekends, eat meals and watch movie together at home, talk daily at home Family time is having meals together and going out as a family
Weekly	Dine Out together on weekend We spend time as a family on weekends Hanging out during weekend, family vacation during long holiday Dinner and weekends Dinner time, before school, Going out during the weekend We spend time as a family on weekends Going out on the weekends, eat meals and watch movie together at home, talk daily at home We spend time as a family on weekends. Eating out together on weekends, very busy with work on weekdays Friday-Saturday family time Dining out, friendly talk with children Dinner, Homework Time Have meals together most of the time since having own business got lots of spare time

Occasionally	Weekends and Outings
	Attending sports event
	Hanging out during weekend, family vacation during long holiday
	Travel during holiday

One of the parents indicated that family time was subjective and constrained by work. This situation is true when both parents are working. However, the parent suggested that this situation should be compensated by replacing lost family time with other forms of quality time. An excerpt from the interview follows:

> Subjective. It is a matter of balance. There are times when family time is limited due to work and/or other constraints, but that imbalance cannot be something permanent. It has to shift else family time is impacted. As to my definition of family time, for me, it's time with my daughter doing things with her. Could something as simple as lying down watching tv or something outdoors. Important to have at least a full day of me time with her

The word cloud in Figure 4 shows that family time was associated with weekends, being together, going out, dinner time, and holidays. The family time tree map depicts each theme based on hierarchy.

Figure 4
Word Cloud and Tree Map for Family Time
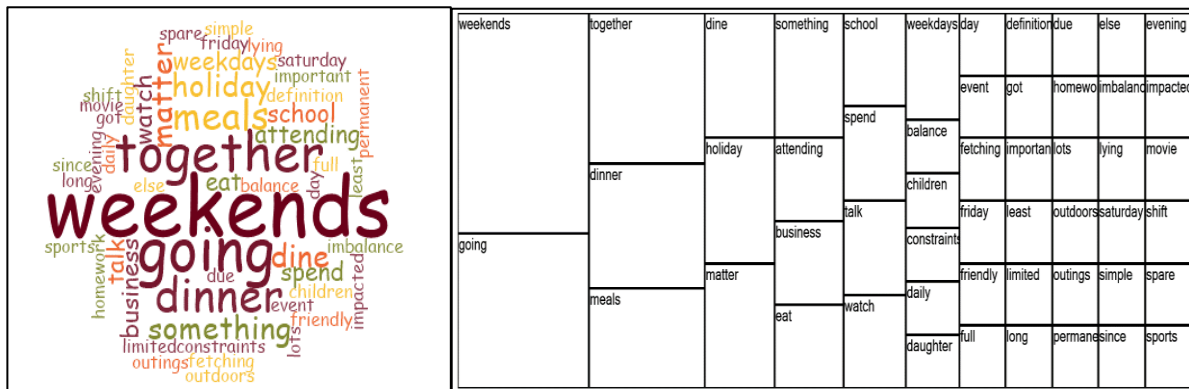
Social Media

Most of the parents were aware that their children had SNS accounts. Only two parents were unaware or unsure about their children having an SNS account. Two parents said that their children did not have an account owing to government Internet control. The parents indicated that their children had Facebook, Instagram, and/or Twitter accounts. However, having an SNS account is allowed generally for older children. Several parents pointed out that Facebook was used as a communication tool for school-related matters. The parents who were aware of their children's use of social media also mentioned that they did not control or monitor their children's behavior online. A few of the parents said that their children were not allowed to use social media without permission and thus were not given electronic gadgets. Overall, the parents were cautious about their children's online activities, and most were aware of control mechanisms.
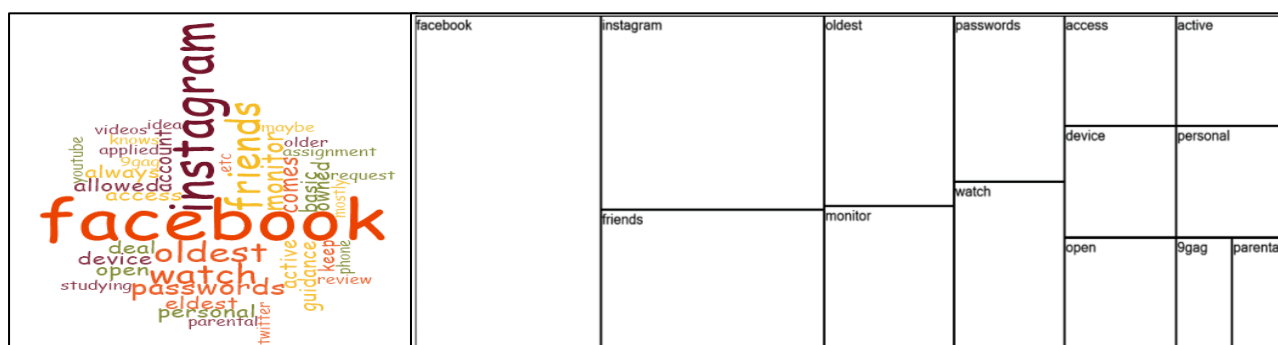
Table 8
Social Media Usage

Social Media	Responses
Yes, I know	Oldest have Facebook and Instagram, friends with daughter on SNS Oldest have Facebook to share assignment and watch videos Oldest have Facebook and Instagram Knows daughter password on social media Open account for children Got all social media, Facebook, Instagram, YouTube, etc. As a mom, the basic guidance comes from home. My daughter owned a hp and she is active in social media, but I have all her social media passwords. So, I always monitor her Older child got social media, followed/friends with the child on social media Only friends with eldest on Facebook, don't really observe what she does Oldest got Instagram, Facebook, and Twitter, personally have no time to deal with SNS Daughter has Facebook, Instagram, don't monitor daughter, when studying phone will be taken Friends with children on social media Eldest got Facebook and Instagram, mostly watch 9gag First two children have Facebook
No, I don't know	Don't have any Idea Not sure, maybe got Instagram but I don't keep a watch
Not Allowed	Not allowed to open Facebook unless got permission Children do not have personal devices, review friend request My child does not have social media. When it is time for her to do so, parental controls will be applied at application layer / device layer No they do not have access to it

The word frequency analysis generated 55 words frequently used by parents in social media. Figure 5 shows the word cloud result of the analysis.

Figure 5
Word Cloud and Tree Map for Social Media

We excluded words that were not meaningfully associated to social media and eliminated unrelated words for the word frequency analysis. We retained 14 key themes, as shown in the tree map in Figure 5. Table 9 shows the social media themes.

Table 9
Themes for Social Media

No	Word	Count	Responses	Findings
1.	Facebook	10	"Not allowed to open Facebook unless got permission"	Facebook and Instagram are among the popular SNS used by teens in their family. One parent mentioned that the teen is not allowed to access Facebook without permission. On the contrary, there are parents who do not monitor their teens' on SNS as they trust that their teens have their eldest as their friends One of the parents controls the access of their teen on SNS when they are studying
2.	Instagram	7	"Only friends with eldest on Facebook, don't really observe what she does" "Daughters have Facebook, Instagram, don't monitor daughter, when studying phone will be taken"	
3.	friends	5	"Child got social media, followed/friends with the child on social" "Friends with children on social media"	Teens usually connect to their friends via the SNS. However, parents indicated that they do follow their teens' friends. They also became friends with their teens in the social media as a way of following their activities online.
4.	oldest	4	"Oldest have Facebook and Instagram, friends" "Oldest have Facebook to share assignment" "Oldest got Instagram, Facebook and Twitter"	Oldest children in the family gets to own a mobile device
5.	watch	5	"Not sure, maybe got Instagram but I don't keep a watch" "Got Facebook and Instagram, mostly watch 9gag" "Oldest have Facebook to share assignment and watch videos"	Watch was referred by parents in two meaning. 1. To watch over their teens 2. To watch videos in SNS
6.	passwords	3	"Know my daughter's password on social media" "As a mom, the basic guidance comes from home. My daughter owned a hp and she is active in social media, but I have all her social media passwords. So, I always monitor her"	Only one parent seems to know their teen's password for SNS No other parents mentioned about password
7.	monitor	3		One parent mentioned that she monitors the teens over SNS
8.	personal	2	"Children do not have personal devices, review friend request" "Oldest got Instagram, Facebook and Twitter, personally have no time to deal with SNS"	Referred to owning a mobile device for SNS access: However, another parent mentioned that their time is limited to monitor personal devices of their teen.
9.	open	2	"Not allowed to open Facebook unless got permission" "I open account for children"	Opening was referred to opening a SNS. Other parents mentioned that they open SNS account to their teens

No	Word	Count	Responses	Findings
10.	device	2	"My child does not have social media. When it is time for her to do so, parental controls will be applied at application layer / device layer" "Children do not have personal devices"	Device was referred to mobile devices
11.	active	2	"My daughter owned a hp and she is active in social media, but I have all her social media passwords. So, I always monitor her"	Parents who know that their teen is active in SNS, have their passwords to monitor their behaviour online.
12.	access	2	"No, they do not have access to it"	Only one parent confirms that they do not have access to SNS
13.	9gag	1		9gag is Hong Kong based video platform that contains fun videos including online memes. This SNS is popular among the teens.
14.	Parental	1		Referred to parental control. One parent mentioned that she will install parental control if her teen has SNS access.

Internet Time

We asked the parents about Internet time and what they perceived from this term. The parents mainly talked about limiting, not limiting, and/or monitoring their children's SNS behavior. Most of the parents said that they did not impose limitations as they were busy at work, thereby allowing their children to use gadgets freely. In terms of limiting Internet usage, the parents did not allow younger children to use the Internet but allowed children above 13 years to use it with close supervision. When asked how monitoring was carried out, the parents stated that they limited Internet use to hours or a specific time. They also monitored their children's use by checking their browsing history. Several parents installed safety applications on their devices that blocked websites/applications and monitored their children's Internet behavior. The word cloud generated by the word frequency analysis tool in NVivo is shown in Figure 6.

Figure 6
Word Cloud and Tree Map for Internet Time
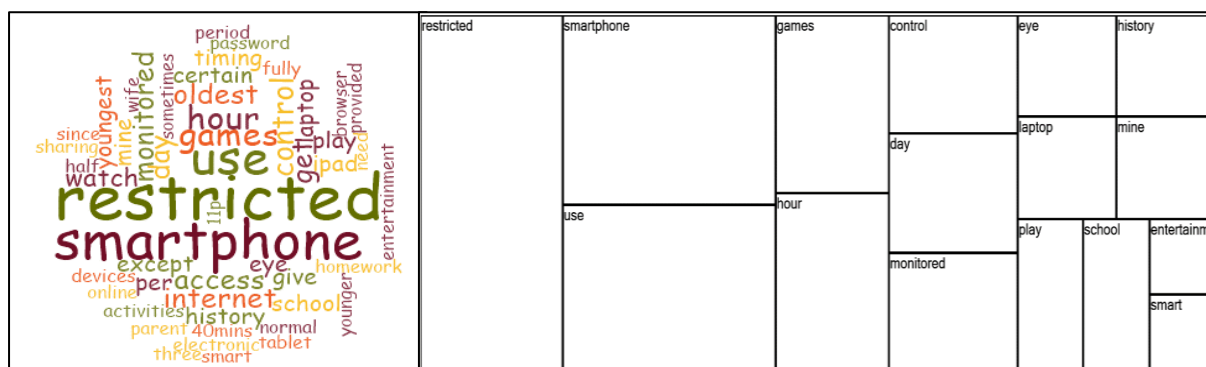
The word cloud generated 51 words/themes. Through elimination, we obtained 16 words relevant to Internet time. Unrelated words were eliminated using the "add to stop word list" function in NVivo. Once words were assigned to the stop word list, the data were run once again to obtain the final tree map. Table 10 presents the 16 themes.

Table 10
Themes for Internet Time

No.	Word	Count	Weighted Percentage (%)	Responses	Findings
1.	restricted	10	9.52	"Wi-Fi not restricted at home; each child got" "Limited from 1-2 hours per" "Wi-Fi not restricted, need to have permission except for doing assignment, own no electronic devices"	Restricted use of both electronic devices and Wi-fi are evident
2.	smartphone	8	7.62	"Wi-Fi not restricted at home; each child got their own smartphones" "Children have smartphone and tablet but can only use after school and is monitored" "Oldest got smartphone and access to internet, online activities can be monitored" "Oldest got laptop and smartphone 24/7, youngest only use father's iPad, 11p.m. above no Wi-Fi" "Wi-Fi not restricted, mostly wife control, both children got own smartphone" "First three have their own smartphones, got internet access, monitor internet history"	Smartphone and wi-fi are allowed based on completion of school homework as well as communication between parents and child. Monitoring of the smartphone seems to via history check. The frequency and effectiveness of this check is not clear. Teens are also capable of deleting the history.
3.	use	7	6.67	"Children have smartphone and tablet but can only **use** after school and is monitored" "Limited from 1-2 hours per day, only use for homework, sometimes for	The usage hours of smartphone, tablets and Internet are based on age of the child. Older children seem to be granted with longer time or even 24/7. Giving devices 24/7 may pose danger of the teens getting exposed to online

No.	Word	Count	Weighted Percentage (%)	Responses	Findings
				entertainment, children have no phone" "Oldest got laptop and smartphone 24/7, youngest only **use** father's iPad, 11p.m. above no Wi-Fi" "They do not own their own phone. I will give them mine and they do not use it most of the time. We have timing for them to use it and we keep an eye on what they watch or games they play"	predators as they may access it from their bed. Sleep deprivation is another problem that results from this flexibility.
4.	games	5	3.81	"We have timing for them to use it and we keep an eye on what they watch or games they play"	Games usage is monitored by parents based on time duration. However, it is unclear if parents check on the type of games played by teens.
5.	hour	4	3.81	"Limited from 1-2 hours per day, only use for homework, sometimes for entertainment, children have no phone" "About 40mins - 1 hour a day of YouTube time for her" "Wi-Fi is limited, half an hour after school time,"	Duration of time for Internet is clearly mentioned by a few parents.
6.	control	4	3.33	"Can't control children since both parent work" "Wife takes care of everything, just joking with children about their partners" "Wi-Fi not restricted, children can't be fully control, all children have phone except youngest, normal phone, not smart phone"	Parents are also in the perception that a full control over their teens is almost impossible to do. Owning a smartphone and accessing the Internet is found normal for parents due to current demand and situation in education and society.
7.	day	3	2.86	"Limited from 1-2 hours per day" "Only provided in certain period such as 2 hours per day"	Duration of time for Internet is clearly mentioned by a few parents.

No.	Word	Count	Weighted Percentage (%)	Responses	Findings
				"About 40mins - 1 hour a day of YouTube time for her"	
8.	monitored	3	2.86	"Children have smartphone and tablet but can only use after school and is monitored" "Oldest got smartphone and access to internet, online activities can be monitored" "First three have their own smartphones, got internet access, monitor internet history"	Parents are convinced that their teens' activities online can be monitored through history check.
9.	eye	1	1.90	"We have timing for them to use it and we keep an eye on what they watch or games they play"	Parents seemed to believe that they have an eye on their adolescents.
10.	history	2	1.90	"Check back browser history of children..." "First three have their own smartphones, got internet access, monitor internet history"	Parents are convinced that their teens' activities online can be monitored through history check.
11.	laptop	1	1.90	"Oldest got laptop and smartphone 24/7, youngest only use father's iPad, 11p.m. above no Wi-Fi"	Laptop is used for Internet access beside smartphone or iPad that belongs to parents.
12.	mine	1	1.90	"They do not own their own phone. I will give them mine and they do not use it most of the time. We have timing for them to use it and we keep an eye on what they watch or games they play"	Parents lend their smartphone to children for communication with classmates/teachers pertaining to school matter.
13.	play	3	1.90	"We have timing for them to use it and we keep an eye on what they watch or games they play"	Games usage is monitored by parents based on time duration. However, it is unclear if parents check on the type of games played by teens. Some games do have private chat apps that allows them to communicate with unknown people. This may pose danger

No.	Word	Count	Weighted Percentage (%)	Responses	Findings
					of being victim of online predators. It is also unclear if parents know the danger in games apps.
14.	school	2	1.90	"Children have smartphone and tablet but can only use after school" "Wi-Fi is limited, half an hour after school time"	School assignment and communication are main reason for parents to allow teens to use mobile devices and access SNS or chat apps.
15.	entertainment	1	0.95	"Limited from 1-2 hours per day, only use for homework, sometimes for entertainment, children have no phone"	Teens are allowed to use devices for entertainment purposes, i.e., watch their favourite videos, play games online or listening to music.
16.	smart	1	0.95	"All children have phone except youngest, normal phone, not smart phone"	Parents do give non-smart phone to younger children. Smartphones are considered for teens. This may illustrate the trust level of parent based on age. Younger children may be exposed easily to strangers online compared to teens. Teens may have better discrimination power when comes to establishing relationship with online strangers.

Sharing Secrets

Most of the parents stated that their children shared secrets with them, whereas the rest reported that their children did not share secrets with them. The parents whose adolescents shared secrets with them said that they were like best friends. Although most children shared secrets with their mother, some boys shared secrets with their father. Children who did not share secrets tended to be introverts and kept secrets to themselves.

Figure 7
Word Cloud and Tree Map for Sharing Secrets
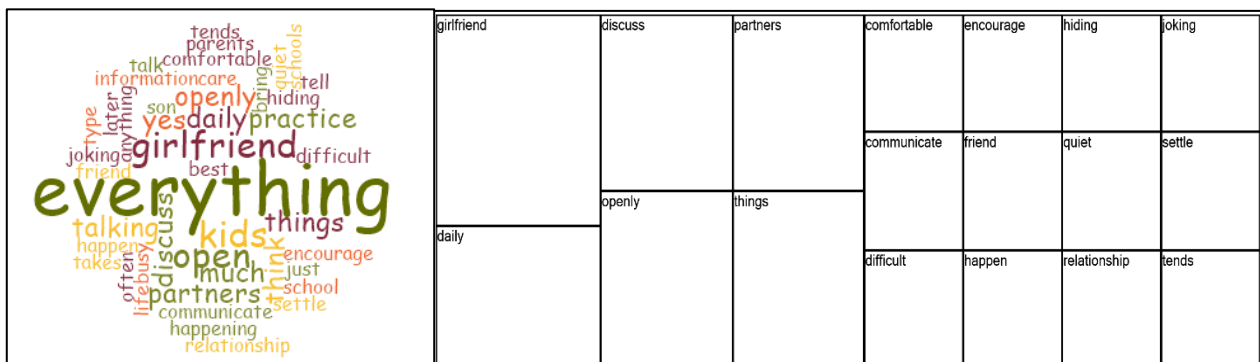
The word frequency analysis generated 45 words, as shown in the word cloud above. Through elimination, we reduced the words to 18 themes that shed light on this keyword. Table 11 presents the themes generated for this keyword.

Table 11
Themes for Sharing Secrets

| No.	Word	Count	Weighted Percentage (%)	Responses	Findings
1	girlfriend	3	12.00	"Children often bring girlfriend home" "Yes, Open relationship with teens, tell most of the things happening, eldest got girlfriend" "Children share daily information to both parents, eldest got girlfriend"	Some of the parents confirmed that their teenage son has girlfriend. However, they maintain open relationship with them so that they will share their secrets. Teens who have girlfriend or boyfriend in school may not be inclined to establish new friend request online from predators.
2	daily	2	8.00	"Oldest share most of his daily life" "Children share daily information to both parents,"	Parents ensure they have conversation with children on daily basis. Hence, the parents perceive that there may not be any secrets kept by their children.
3	discuss	2	8.00	"The teens always discuss with us about everything."	Teens who would discuss 'everything' with parents maybe doubtful. This is because teens tend to be quite and secretive as they fear parents' negative reaction.
4	openly	3	8.00	"We practice open talking at home. She will openly share everything with me." "She will openly share everything with me"	Open discussion is one the best method to ensure teens are safe from online predators.
5	partners	2	8.00	"Just joking with children about their partners" "No, don't think children got partners"	When children become teens, parents try to become friendlier by talking about their special friends or partner. This method is effective as teens gain confidence to share if they have communication with grown-ups who became friends via online platform.
6	things	2	8.00	"Wife can settle this thing" "Yes, Open relationship with teens, tell most of the things	Parents ensure open communication with their teens.

				happening, eldest got girlfriend"	
7	comfortable	1	4.00	"Yes. I encourage her to do that all the time if she is comfortable to do so"	Parents give freedom to their teens to manage their personal things.
8	communicate	1	4.00	"Difficult to communicate with children"	Communication skill is important part of parenting teens.
9	difficult	1	4.00	"Difficult to communicate with children"	
10	encourage	1	4.00	"Yes. I encourage her to do that all the time if she is comfortable to do so"	Parents give freedom to their teens to manage their personal things.
11	friend	1	4.00	"My daughter's best friend, share everything, don't think daughter is hiding anything"	Getting some information via teens' friends maybe a good alternative to ensure no secret communication going on with online predators.
12	happen	1	4.00	"Share what happen during school"	Parents ensure open communication with their teens.
13	hiding	1	4.00	"don't think daughter is hiding anything"	
14	joking	1	4.00	"Just joking with children about their partners"	
15	quiet	1	4.00	"Son is the quiet type, mostly talk about schools"	Teens who quite tend to keep secret to themselves. Hence, parents need to find alternative ways to unveil to ensure there is no danger faced by the teen.
16	relationship	1	4.00	"Yes, Open relationship with teens, tell most of the things happening, eldest got girlfriend"	Parents ensure open communication with their teens.
17	settle	1	4.00	"Wife can settle this thing"	Fathers who are busy with work tend to trust the mothers to handle this matter.
18	tends	1	4.00	"Tends to be busy"	

Sex Education

The parents agreed that sex education was a good subject to teach in high school in Malaysia. However, other parents mentioned that religion and culture made the teaching of sex education in school inappropriate. Several families taught their children about sex after reaching puberty, as they believe that the topic was inappropriate for children below 10 years. The parents felt that sex was a very difficult subject to discuss with their children, but several parents said that they talked about sex within their families.

Figure 8
Word Cloud for Sex Education
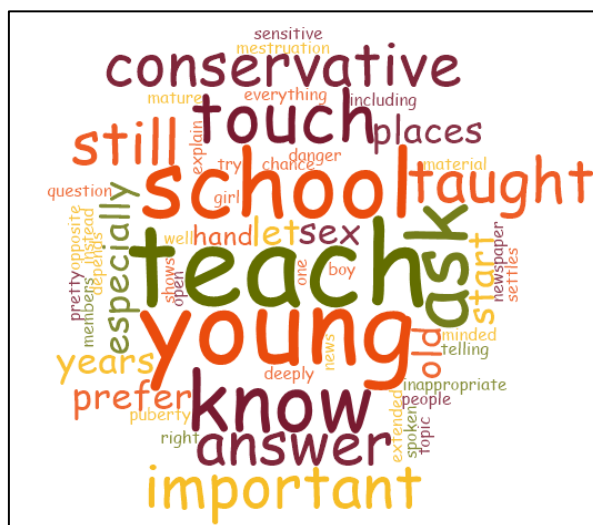
The above word cloud generated 55 words. Through elimination, we obtained 23 words relevant to sex education. Figure 9 shows the final tree map for sex education.

Figure 9
Tree Map for Sex Education

Table 12
Themes for Sex Education

No	Word	Count	Weighted Percentage (%)	Responses	Findings
1	teach	6	9.48	"Let the School teach the children" "Parents teach oldest once he reaches puberty" "Will teach them when they mature, school should teach children as well"	Parents tend to wait until their teens gets older before discussing on sex relationship. This might be too late as online grooming victims include children as young as 10 years old.

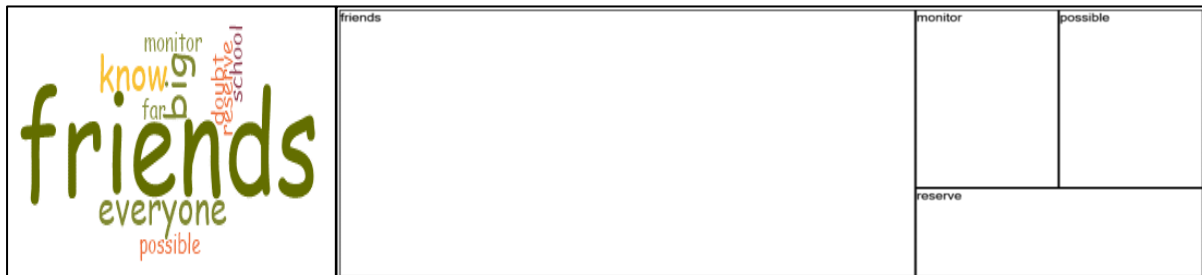| No	Word	Count	Weighted Percentage (%)	Responses	Findings
				"Haven't got the chance to teach them, important to know especially eldest got her Menstruation" "Talk to children not to touch opposite sex, Danger of sex is being educated"	Parents tend to transfer this role to school to give sex education. There are parents who educate their teens with details on the bad touch and good touch as well as danger of teenage sex.
2	young	5	8.62	"She is too young for this." "To young, I prefer them to know about it when they are 12 years old." "Not the right time, still too young, sensitive topic"	Parents also feel their teens are too young to have sex education or conversation related to sex education. Asian parents find it sensitive topic to discuss with children.
3	school	5	7.76	"Let the School teach the children" "Still very conservative, let the school taught them instead, if children ask then will answer" "Will teach them when they mature, school should teach children as well" "Haven't talk about it yet, Husband has spoken about it, School should teach her"	Parents hope that school will give sex education.
4	ask	4	6.90	"Conservative, but if child ask will answer the question" "Explain only when the situation is needed, answered when asked"	Parents taking reactive mode. They will only talk on sex if their children ask or when the "situation" requires. However, this maybe too late to prevent teens from danger.
5	know	4	6.90	"Important, doesn't know how to start" "Too young, I prefer them to know about it when they are 12 years old." "Haven't got the chance to teach them, important to know especially eldest got her Menstruation"	Knowledge on how to handle sex education with teens is still lacking among parents. Parents do wait for their teenage daughters to attain puberty before engaging in sex education.
6	answer	3	5.17	"Conservative, but if child ask will answer the question" "Explain only when the situation is needed, answered when asked"	Parents taking reactive mode. They will only talk on sex if their children ask or when the "situation" requires. However, this maybe too late to prevent teens from danger.

No	Word	Count	Weighted Percentage (%)	Responses	Findings
7	conservative	3	5.17	"Still very conservative, let the school taught them instead, if children ask then will answer"	Parents hope that school will give sex education.
8	important	3	5.17	"Important, doesn't know how to start" "Very important but haven't start talking deeply about this." "Haven't got the chance to teach them, important to know especially eldest got her menstruation"	Knowledge on how to handle sex education with teens is still lacking among parents. Parents do wait for their teenage daughters to attain puberty before engaging in sex education.
9	touch	3	5.17	"I've taught my daughter about her special places and that no one, not including extended family members should touch." "Talk to daughter where people can/cannot touch" "Talk to children not to touch opposite sex, Danger of sex is being educated"	Parents brief their daughters about good touch and bad touch, relationship with opposite sex and danger of teenage sex.
11	sex	2	3.45	"Talk to children not to touch opposite sex, Danger of sex is being educated"	
12	start	2	3.45	"Important, doesn't know how to start" "Very important but haven't start talking deeply about this."	Knowledge on how to handle sex education with teens is still lacking among parents.
13	chance	1	1.72	"haven't got the chance to teach them,"	Parents waiting for right time to discuss on this topic.
14	danger	1	1.72	"Talk to children not to touch opposite sex, Danger of sex is being educated"	Parents inform teens on the danger of sex.
15	deeply	1	1.72	"Very important, but haven't start talking deeply about this"	Deep conversation with teens on teenage sex is yet find its way. Parents should also include online grooming matter in their discussion.
16	explain	1	1.72	"Explain only when the situation is needed, answered when asked"	
17	extended	1	1.72	"I've taught my daughter about her special places and that no one, not including extended family members should touch."	Parents worried that their teens might be sex victim of their extended family members. Hence, they caution them. However, it is unclear if they also include online predators as possible danger to setting boundaries.

No	Word	Count	Weighted Percentage (%)	Responses	Findings
18	inappropriate	1	1.72	"No, inappropriate for children"	Parents perceive that sex education is inappropriate for their children.
19	mature	1	1.72	"Will teach them when they mature, school should teach children as well"	Parents waiting for right age to discuss on this topic.
20	news	1	1.72	"Try telling daughter through TV shows or newspaper news"	Parents use various channels to communicate the sex education.
22	puberty	1	1.72	"Parents teach oldest once he reaches puberty"	Parents waiting for right time to discuss on this topic.
23	right	1	1.72	"Not the right time, still too young, sensitive topic"	Parents perceive that sex education is inappropriate for their children.

Unknown Friends

Several of the parents believed that their children had no friends who were unknown to them and claimed that they were well acquainted with their children's friends. However, the other parents hoped that their children had no friend's unknown to them. A few of the parents had instructed their children to not talk to strangers. Two parents admitted that their children had friends who were unknown to them. Moreover, their children had fallen victim to online grooming.

Figure 10
Word Cloud and Tree Map for Unknown Friends

The above word cloud generated 10 words. Through elimination, we obtained 23 words relevant to unknown friends. Table 13 presents the themes for unknown friends.

Table 13
Themes for Unknown Friends

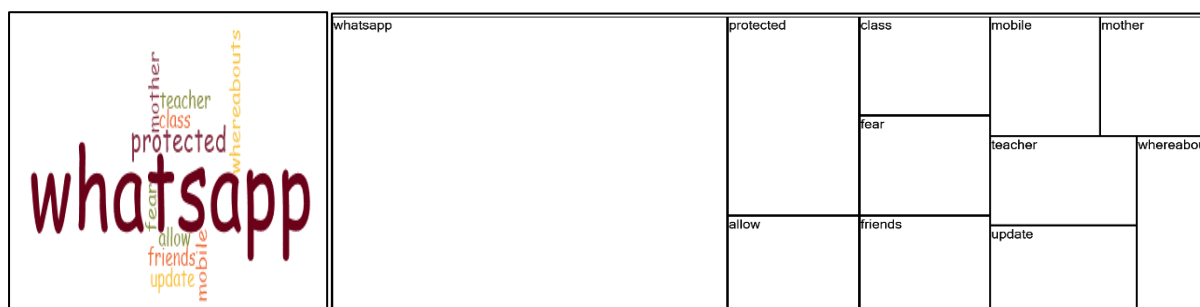| No	Word	Count	Weighted Percentage (%)	Responses	Findings
1.	friends	6	46.15	"No, everyone friendly" "No, most friends are school friends"	Parents are confident that the friendship circle of their teens are good people and they are from school.

				"Mostly know their friend, have their password so can monitor what they're doing" "know all their friends"	Parents tends to get to know their friends.
2.	monitor	1	7.69	"Mostly know their friend, have their password so can monitor what they're doing"	Parents monitor their teen's online communication and activities as they have their password.
3.	possible	1	7.69	"It is possible but i doubt it."	Parents do not think their teen might have unknown friends.
4.	reserve	1	7.69	"No, daughter is the reserve type"	

Chat Applications

When we presented the chat application keyword, most of the parents admitted that their children used chat applications. Moreover, several parents indicated that they used a family WhatsApp chat group. Among the respondents, the two most common chat applications were Telegram and WhatsApp. According to the parents, their children used these applications to talk to family and friends and for school purposes. However, a few parents did not allow their children to use chat applications, whereas the others monitored their children's chat application behavior as well as their SNS behavior.

Figure 11
Word Cloud and Tree Map for Chat Applications

The above word cloud generated 26 words. Through elimination, we obtained 11 words relevant to chat applications. Table 14 presents the themes for chat applications.

Table 14
Themes for Chat Applications

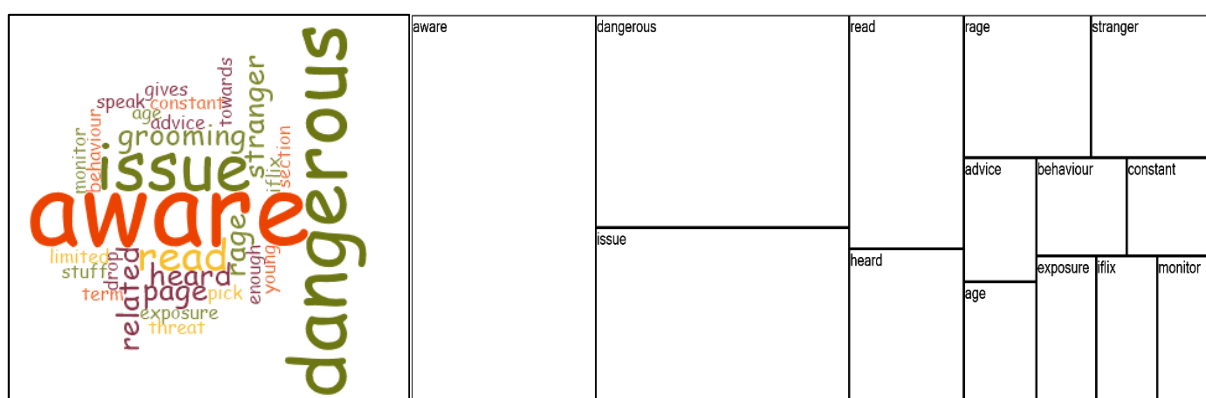| No	Word	Count	Weighted Percentage (%)	Responses	Findings
1.	WhatsApp	9	45.00	"Telegram, Webchat, WhatsApp" "WhatsApp" "WhatsApp for group class discussion on mother's phone" "WhatsApp to talk to friends" "Got family WhatsApp group"	WhatsApp is the most popular chat app used by teens for communication between parents, family members, friends, and school group.

				"Daughters have WhatsApp, however not allowed in school" "First three have WhatsApp for school purposes"	It is unclear if the usage of WhatsApp is monitored and if there is communication with unknown people.
2.	protected	1	10.00	"All the chat apps have protected password."	The chat app such as WhatsApp does not provide password option. Passwords are usually created for the smartphone used. However, there are app lock tools such as Norton app lock that allows locking apps and protect privacy. It is unclear if parents do install this apps for their teens.
3.	allow	1	5.00	"Not allow"	Parents fearful about the usage of smartphone.
4.	class	1	5.00	"WhatsApp for group class discussion on mother's phone"	Parents' smartphone is used for school group chat apps.
5.	fear	1	5.00	"Daughter does not have any mobile device on her so no fear of this at this point in time"	Parents fearful about the usage of smartphone.
6.	friends	1	5.00	"WhatsApp to talk to friends"	Parents allow usage of chat app to communicate to friends
7.	mobile	1	5.00	"Daughter does not have any mobile device"	Parents' smartphone is used for school group chat apps.
8.	mother	1	5.00	"WhatsApp for group class discussion on mother's phone"	
9.	teacher	1	5.00	"Use parents' phone to update with teacher and receive school assignment"	
10.	update	1	5.00	"Use parents' phone to update with teacher and receive school assignment"	
11.	whereabouts	1	5.00	"Just text children asking whereabouts and what to have for meals"	Chat apps being used to know location of their teens and family discussion.

Online Grooming

When asked about online grooming, nine of the parents (40%) said that they were not familiar with the term and had never heard of it. Two of the parents admitted that their daughters were victims of online grooming. One of the girls fell victim to an elderly man pretending to be a girl to gain her trust. The parents of this girl said that their daughter did not

want to discuss the details with them. Meanwhile, the daughter of the other parent fell victim to a man using a fake account to connect with her. At first, the man was nice to the girl but later sent her naked photos of himself. He made an appointment with her to meet at a cafe. After strengthening their relationship, the man invited the girl to a garden party, which he claimed would be attended by numerous people. However, when she arrived at the party, the man raped her and filmed the incident. He threatened to expose the video if she spoke out about the rape. Teachers observed the girl's odd behavior, and she opened up about the incident after much persuasion.

Figure 12
Word Cloud and Tree Map for Online Grooming

The above word cloud generated 29 words. Through elimination, we obtained 14 words relevant to online grooming. Table 15 lists the themes for online grooming.

Table 15
Themes for Online Grooming

No	Word	Count	Weighted Percentage (%)	Responses	Findings
1.	aware	8	21.62	"Yes, give constant awareness to children" "Know, let children be aware of the danger" "Don't know, advice children not to talk to strangers and give them awareness of how dangerous it is" "No, I was not aware of this issue." "Heard about it before, will be more aware of his children behaviour" "Very serious, will be more aware of her children" "Don't know about it, gives awareness towards stranger on the internet"	Awareness on the danger of online grooming is encouraged. Parents advised teens not to engage any communication with strangers. However, it is unclear if they have emphasized on online strangers.

2.	dangerous	6	16.22	"Yes, she knows, very dangerous" "Know, let children be aware of the danger" "Don't know, advice children not to talk to strangers and give them awareness of how dangerous it is" "Yes, very dangerous" "Heard about it before, it's dangerous, monitor children, pick/drop them up from school"	Online grooming is dangerous for their teens.
3.	issue	5	13.51	"I do know the threat of the issue, but I didn't know its term." "I do read about this online grooming related issue in FB page such as rage" "No, I was not aware of this issue."	Parents agree that the threat from online predators is an issue, and they need to be aware of it.
4.	read	3	8.11	"I do read about this online grooming related issue in FB page such as rage"	Source of awareness is newsfeed in Facebook page.
5.	heard	2	5.41	"Heard about it before, will be more aware of his children behaviour" "Heard about it before, it's dangerous, monitor children, pick/drop them up from school"	Parents increase alertness on their teen's behaviour.
6.	rage	2	5.41	"I do read about this online grooming related issue in FB page such as rage"	The Star newspaper's youth section called R.age is the source of information.
7.	stranger	2	5.41	"Don't know, advice children not to talk to strangers and give them awareness of how dangerous it is" "Don't know about it, gives awareness towards stranger on the internet"	Parents are still do not know much about the strangers online.
8.	advice	1	2.70	"Don't know, advice children not to talk to strangers and give them awareness of how dangerous it is"	
9.	age	1	2.70	"Parent should speak to children from young age"	Parents agree that they should talk to their teens from young age.

10.	behaviour	1	2.70	"Heard about it before, will be more aware of his children behaviour"	Parents increase alertness on their teen's behaviour.
11.	constant	1	2.70	"Yes, give constant awareness to children"	
12.	exposure	1	2.70	"My child's exposure to the internet is limited to YouTube and to iflix kids' section only. She has no access to a computer to check on other stuff."	Parent do limit the exposure to SNS and devices. However, it is unclear of the practicality of this type of supervision especially at this current era.
13.	monitor	1	2.70	"Heard about it before, it's dangerous, monitor children, pick/drop them up from school"	Parents increase alertness on their teen's behaviour.
14.	iflix	1	2.70	"My child's exposure to the internet is limited to YouTube and to iflix kids' section only."	Parents increase alertness on their teen's behaviour.

Mapping Emergent Themes to Theory

A total of 121 words were summarized in phase 1 using word frequency analysis. Through elimination, the list was reduced to 89 relevant words. The elimination process involved the removal of words not related to operational definitions or determinants of cyber grooming deterrence. Next, the remaining 89 words were plotted based on the three main determinants of cyber grooming deterrence, as presented in the conceptual framework. The resulting concept-centric plot is shown in Table 16. The table indicated that based on the emergent themes from the interviews, all three determinants were critical.
From the analysis, we concluded the following inferences from the mapping of themes to theory.

Parental Factors

Restriction was an important factor related to chat applications, Internet time, social media, sex education, online grooming, and family time. However, restriction was not associated with unknown friends and sharing secrets. Various restrictions were imposed by parents on their adolescents. In terms of unknown friends and sharing secrets, restrictions seemed to be silent. Meanwhile, monitoring was linked to all the keywords except sex education. We inferred that sex education was not within the purview of monitoring by parents. Monitoring referred mainly to online activities, time using the Internet, friends, and chats. Parental factors guiding adolescents seemed silent in terms of cyber grooming, chat applications, family time, Internet time, sharing secrets, and unknown friends. Guiding involved social media passwords and the age of adolescents, whereas sex education involved good and bad touching. Lastly, techniques used by parents to deter their adolescents from engaging in cyber grooming included relationship with online grooming, sex education, sharing secrets, and unknown friends. However, techniques were not mapped to social media. Overall, parental factors were crucial determinants of cyber grooming deterrence. However, the degree of parental involvement and implementation can be improved through increased awareness.

Table 16
Mapping Themes to Theory

No.	Keywords	Themes	Parental Factors				Self Efficacy			Self-regulation	
			Restriction	Monitoring	Guiding	Techniques	Legal awareness	Technology Awareness	Online Activity Awareness	Contact Avoidance	Limited Use
1	Chat Apps	allow	x								
2	Chat Apps	class		x					x		x
3	Chat Apps	fear	x						x		
4	Chat Apps	friends		x							
5	Chat Apps	mobile	x							x	
6	Chat Apps	mother				x			x		x
7	Chat Apps	protected	x					x	x		x
8	Chat Apps	teacher	x						x		x
9	Chat Apps	update	x								x
10	Chat Apps	whatsapp		x			x		x		x
11	Chat Apps	whereabouts		x					x	x	
12	Family Time	dinner				x					
13	Family Time	friendly				x					
14	Family Time	holiday				x					
15	Family Time	movie				x					
16	Family Time	outdoors				x					
17	Family Time	spend				x					
18	Family Time	sports				x					
19	Family Time	together				x					
20	Family Time	weekends				x					
21	Internet time	control	x	x				x	x		
22	Internet time	day	x								
23	Internet time	entertainment	x								
24	Internet time	eye		x							
25	Internet time	games	x	x					x		x
26	Internet time	history		x				x		x	
27	Internet time	hour	x								
28	Internet time	monitored		x							
29	Internet time	play									
30	Internet time	restricted	x								
31	Internet time	school		x		x					
32	Internet time	smart	x			x				x	
33	Internet time	use	x								
34	Online Grooming	advice	x	x	x						
35	Online Grooming	age									
36	Online Grooming	aware	x	x	x						
37	Online Grooming	behaviour							x		
38	Online Grooming	constant				x					
39	Online Grooming	dangerous	x								
40	Online Grooming	exposure									x

Self-Efficacy

Only one determinant was mapped to legal awareness. This result showed that parents were unaware of laws and regulations protecting children from cyber grooming. This finding was consistent with that of Hsiao et al. (2007) on children's online activities and privacy protection. Technology awareness was related to online grooming and social media, whereas online activity awareness was linked to chat applications, sharing secrets, Internet time, online grooming, unknown friends, and social media. Given the importance of technology awareness, parents should be empowered and educated on the use of technological tools, such as filters, parental controls, restricted modes, and other methods, to curb cyber grooming (Hsiao et al., 2007). Tools, such as Qustodio, NetNanny, mSpy, Norton Family, Kaspersky Safe Kids, and Surfie, are among the top-rated control filtering software for parents. However, none of the respondents mentioned technological tools for controlling their adolescents'' online activities.

Self-Regulation

Contact avoidance was linked to chat applications, Internet time, online grooming, sex education, and unknown friends. However, no linkage to social media and family time was observed. Limited use was related mainly to chat applications. Moreover, linkage to Internet time, online grooming, secret friends, social media, and unknown friends was observed but not to family time and sex education.

Discussion and Recommendations

This study reveals several important findings.

Finding #1: Adolescents are Allowed to Use Smartphones, the Internet, WiFi, and SNS for School-Related Daily Activities, which May Serve as Potential Channels for Online Predators Offering "Candy."

Based on the interviews, smartphones and the Internet are essential components of children's lives. Most parents do not hesitate to provide their children with smartphones for convenience, especially for education through chat platforms, such as WhatsApp. Although parents are aware of predators online and on social media, they have no choice but to give their children such devices. Parents can only monitor or try to limit their children's Internet use. As a respondent mentioned that "Oldest got Instagram, Facebook and Twitter, personally have no time to deal with SNS."

Finding #2: Parents are Reserved About Sex Education and Expect Schools to Provide It. However, Schools Do Not Provide Sex Education that Emphasizes the Dangers of Online Grooming as Part of Their Curriculum.

Although parents are aware of the importance of sex education to children, especially during their teenage years, they discuss such topics indirectly. Parents who are uncomfortable talking about this issue believe that schools are responsible for teaching their children about sex. Very few open-minded parents are willing to talk about this issue with their children. Most parents discuss this topic with their children by sharing news and hoping that they will be cautious. But there are parents who have opinion such as followed: "Not the right time, still too young, sensitive topic."

Finding #3: The Term "Online Grooming" is New to Parents, and They Hope that Schools will Play an Important Role in Creating Awareness Among Adolescents.

Most of the parents do not know how to prevent online grooming or protect their children from online predators. Their only means is to monitor their children as closely as possible. Parents should be attentive to their children's social activities, such as events they wish to attend, their friends, and acquaintances they are talking to on chat applications. The parents hope that schools will take this issue seriously and teach it to students. They believe that schools have effective teaching techniques for children. The following excerpts express these ideas.

It is the modern age, children do need to get online to get material for their studies / projects, etc. It is important for parents to familiarise themselves with IT know-how's to be able to identify and deal with a threat. you can't do anything if you don't know it is happening. Secure computers, ensure they webcams are turned off, parental controls are installed. Logins are monitored. More importantly parents should take a personal interest in the children's activities and environment as well. Threats will always exist, but as parent's we are responsible to identify them and deal with them. Cell phone activities should be strictly monitored and if possible, avoid giving out a cellphone; instead, there are GPS trackers in watch format that can take a sim card. These watches are programmable to dial up to 5 numbers in the event of an emergency. If a phone is to be given, it's important to give the phone when the child is mature enough to understand its use.

"Parents need to know the password of their teens social media application."

Parents need to know what the teens are doing with the phone and keep an eye on their activity.

Finding #4: Personal and Free Access to WhatsApp and Facebook may Provide Opportunities for Online Predators to Communicate with Adolescents to Set Up Face-to-Face Meetings.

Parents provide supervised opportunities and means to their adolescents to use chat applications, such as WhatsApp, and social networking sites, such as Facebook and Instagram. However, supervision may not be sufficiently carried out. This gap provides opportunities to online predators to become friends with adolescents. Parents who notice a change in their adolescents' behavior should monitor chat applications closely. The following respond from a respondent, may trigger alarm in this context: "Only friends with eldest on Facebook, don't really observe what she does."

Finding #5: Parents Trust Their Adolescents in Terms of Friend's Unknown to Them and Keeping Secrets, as They Communicate Openly with Their Adolescents Daily.

Although open communication serves as an excellent channel for monitoring adolescents' behaviors, determining whether adolescents disclose important information to their parents is difficult. Online predators employ various techniques to ensure that their victims do not tell others about their relationship.

We provide recommendations for parents for building a safe society for children. In addition, we suggest ways to increase the number of au courant parents.

- **Increase family time:** Adolescents trust groomers easily owing to their family's lack of concern toward them. Adolescents may be lonely and eager for attention from their parents. Thus, parents should spend time with their children to understand them or show concern about what their adolescents are thinking. Groomers target adolescents with family issues or those with divorced parents. Such adolescents may feel that no one cares about them, thereby seeking relationships externally. Busy parents should consider increasing their presence at home to benefit their adolescents.
- **Involvement in groups:** Involving adolescents in community activities could be an effective way to divert their energy and time for a good cause. Such activities can distract children from their smartphones during their free time.
- **Share current cases on cyber grooming**: Parents must alert their adolescents to actual cyber grooming cases. Such practices can increase adolescents' awareness and alert them on techniques used by predators to establish relationships for sexual purposes. Awareness of the current situation can increase knowledge on cyber grooming. In most cases, ignorance is the culprit that leads to unwanted incidents.
- **Restrictions**: Restrictions on the use of the Internet, chat applications, and social media and unknown friends should be presented clearly with consequences. Restrictions can be implemented easily using parental control tools such as Qustodio, Net Nanny, Norton Family, and the like, that offers content filtering services, screen time management, social media monitoring, website blocker and more. In addition, consequences on breach of trust should be relayed to adolescents to help them avoid predators.

Conclusion

More than 60% of the respondents claim they are aware of online grooming and its corresponding dangers. However, parents shy away from discussing sex with their children owing to the sensitive nature of the topic and prefer schools to provide their children with sex education. Moreover, though parents spend quality time with their children, their children keep secrets from them. Most of the parents believe that their children do not have friends who are unknown to them. However, the increasing rate of online grooming proves that children keep secrets about friends who are unknown to their parents. Groomers use social media to approach children. Most parents give their children electronic devices and allow them to access the Internet freely without educating them on dangers they may encounter. In this study, we highlight the vulnerable situation of children and parents in society. The building of a bright society demands awareness and control of the young generation to prevent them from being victimized by online predators. The dark side of the Internet and social media can be reduced by increasing parents' awareness and knowledge of protection methods and cybersecurity controls.

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