

PARENT – TEENAGER COMMUNICATION IN THE DIGITAL ERA

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ABSTRACT

Communication is an essential component in a family setting. Effective communication between parents and their teenager can foster a better relationship among the two. The objective of this study was to evaluate the frequency and time taken in a day by parents and teenagers to communicate with each other via face-to-face and using devices. This was a cross-sectional study conducted from October to November 2016. 5 shopping centres (out of 19) within the Kinta district were randomly selected. Researchers visited shopping centres on Saturday afternoons to approach parent-teenager pairs. We included teenagers aged between 13 and 17 years, parent-teenager pairs staying in the same house, and excluded teenagers who came to the shopping centre with their grandparents only. The sample size needed for this study after considering a 20% drop out rate was 307 pairs. Families were given 15 minutes to fill out a self-administered questionnaire. Teenagers and parents answered the questionnaire separately. The questionnaire consisted of 3 sections - the basic demography of the participant, a 24-hour parent-teenager communication recall and the satisfaction of communication between them using devices and face-to-face. A validated questionnaire from Barnes & Olson (1985) was used to assess the satisfaction of communication between the pairs. Once both questionnaires were completed, they were combined and coded with the same number to enable paired analysis. 314 (71.2%) out of 434 parent and teenager pairs that were approached participated in this study. The sample size target was met and 309 were included for data analysis (5 excluded as questionnaires were incomplete). Most respondents were mothers [183 (59.2%)] and daughters [209 (67.6%)]. Families reported that they communicated most frequently with each other using face-to-face communication, and the mean frequency in the past 24 hours was 8.6 (SD 18.2) for parents and 7.5 (SD 7.2) for teenagers. The mean time parents and teenagers reported communicating with each other in 24 hours via face-to-face was 53.3 (SD 108.8) and 49.8 (SD 87.7) minutes respectively. Families reported that they communicated with each other using devices, and the mean frequency in the past 24 hours was 6.2 (SD 6.5) for parents and 7.1 (SD 10.3) for teenagers. The mean time parents and teenagers reported communicating with each other via devices was 19.9 (SD 23.9) and 35.7 (SD 70.6) minutes respectively. Families reported that they were satisfied with their communication (94.5% parents, 94.2% teenager) but felt that there was room for improvement (47.6% parents, 51.5% teenager). There was no statistical significant difference between the mean scores among parents and teenagers using devices ($p=0.09$) and the mean scores face to face communication ($p=0.80$) showing that there was an accuracy of reporting on both parties. This study found that parents and teenagers communicate with each other more via face to face compared to using devices. Both parents and teenagers expressed that the ideal way for communication is via face to face. They also felt that although they might be happy with their communication, there was room for improvement.

KEYWORDS

Parent, teenager, communication, devices, digital era

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What is already known about this topic

- Parent and teenager communication has deteriorated over the years
- Communication is now being driven using technology especially with the presence of mobile devices

Key findings

- On average, most parents reported that they communicate face to face with their teenagers 8.58 times per day and teenagers reported 7.54 times per day. Using devices, it was 6.23 times per day for parents and 7.15 times per day for teenagers.
- Most parents reported that they spent 53.31 minutes per day to communicate with their teenager a day and teenagers reported that they used 49.79 minutes a day to communicate with their parents. The pairs also reported that they used 19.92 minutes per day (parents) and 35.66 minutes per day (teenagers) to communicate with each other with devices.
- There was no statistical significant difference between parents and teenagers PACS scores for communication satisfaction when communicating via face to face nor with devices.
- Parents and teenagers were satisfied with their communication but both agreed that there was room for improvement

What this study adds

- Parents and teenagers are satisfied with the way they are communicating but they feel that there is a need to improve on it
- Parents need to recognise that the teenagers prefer face to face communication and use this means to improve their communication.

How Do Parents & Teenagers Communicate Per Day?

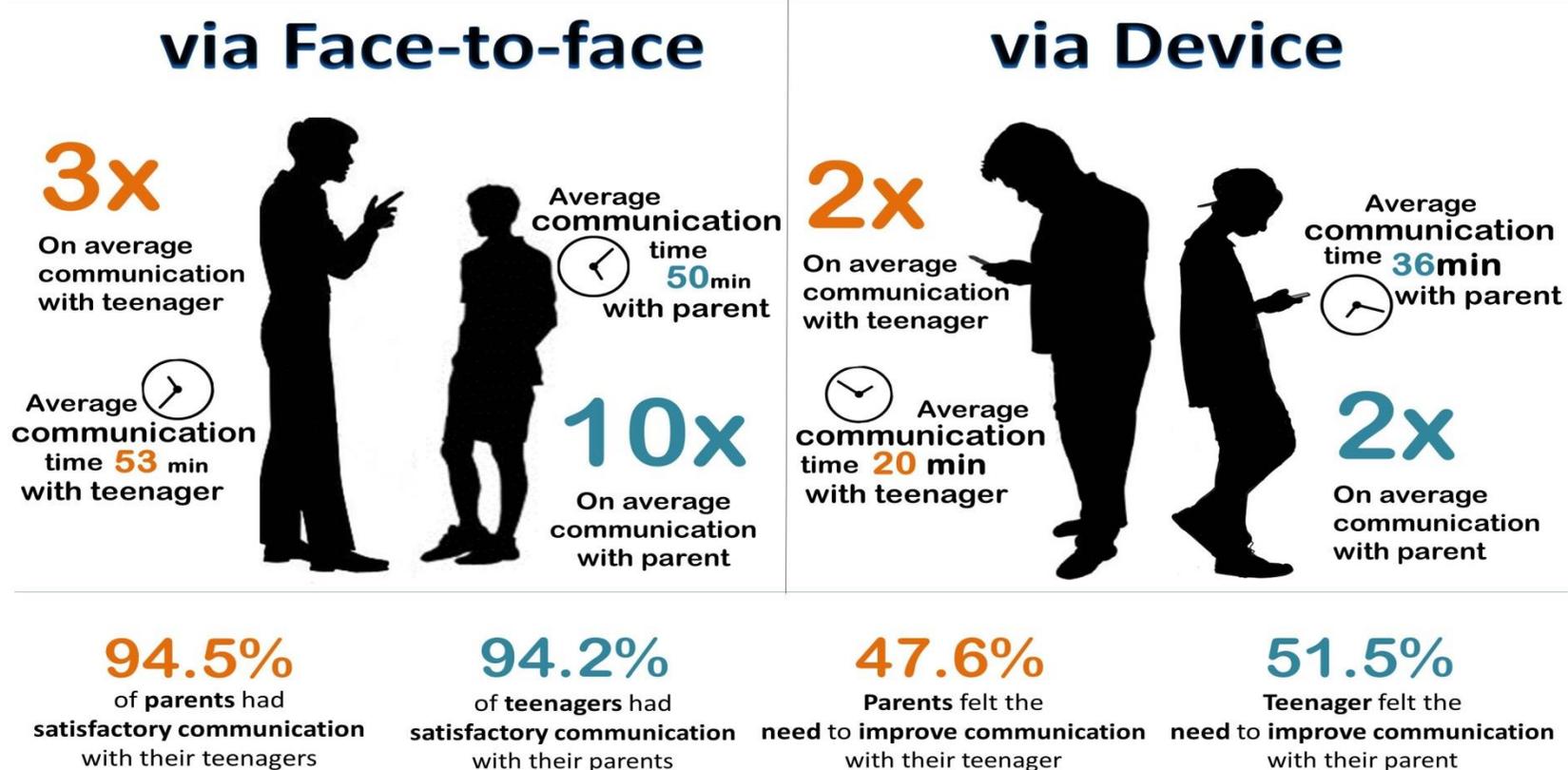


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Introduction

A parent is defined as a caregiver to their offspring. Parenting is considered a whole life learning process between parent and children- communication being the most important element to express the feelings of either. Parents play the important role how to guide their children to better lifestyle including the changing trends of today's world (Golsteijn and Van den Hoven, 2011). Parent in this research context is a legal parent (biological or non-biological) present with her/his teenager at a shopping complex. Parents and their teenager's communication relationship play a great effect on the teenager's life. Straining of their relationship in communication can cause juvenile delinquencies (Shazia Gulzar, 2016).

Teenagers are children aged between 13- 19 years of age. However, in this study, the researchers consider those aged between 13-17 years of age. Teenagers are more interest to physical changes that happening to them as well as they grow their emotions. Changes of hormones, with body changes, struggling to find an identity, pressures from friends and a developing sense of independence, means the teenage years are a confusing time. They struggle for their needs. They prone to be with their peers rather than to be with their family members. Adolescents' quest for autonomy and their own identity, the importance of the peer group, or experimenting with sex (Gullotta et al., 2000 ; Berk, 2007). But the most, it is a life process into adulthood. Communication is important to them and the choice of modes of communication to them can differ widely- from reality communication and technology assisted communication. Teenagers begin to form ideas and beliefs about themselves based on how their parents communicate with them. When parents communicate effectively, they are showing them respect. Families that spend time together "in common activities enjoy a higher quality of communication" (McGrath, 2012). Family communication is shows the intimacy and trusting relationship

Communication is a form of interaction between 2 people(Johnson, 2014). It is used to express one's feelings to another and is considered a tool to connect with one another. It consists of verbal and non-verbal methods of communication. The verbal communication consist of the involvement of body gesture, eye contact, facial expression when communicating (Amanda Lenhart, 2010). While non-verbal communication can be without facing each other and also by body gesture, involving pictures/videos/interface and other tools(Amanda Lenhart, 2010). In this day and age, communication has become vital and as it has become a habit to be constrained of time, many resort to use modes of digital communication rather than face-to-face (reality) communication. Teenagers have a higher tendency of communicating with anyone in this day and age using technology devices(Amanda Lenhart, 2010). It is said that communicating with them is the best mode as a study in the US showed that they tend to send an average of 3000 texts a month (average of 100 per day).

The digital era is the transient's ages from the paper and manual jobs to computers in all methods. Technologies are taken place in the whole society and life living. Its faster method among civilians to keep on going with their life. Teenagers have been especially attracted to instant messaging services. In June 2001, a national study of teenage online behavior (Amanda Lenhart, 2010) showed that teenagers express most of their communication via technology than from time spent in reality. Teenagers opt to communicate via digital devices because they feel that it is hip and trendy to do so. Opting to digitally communicate with them may be an excuse to be in contact while being able to continue with their daily task/job.

Literature review

Some studies conducted over the years have shown that there are communication gaps between parents and children in the modern day era(Odendaal et al., 2015). This study had conducted a focus group discussion and reported that it was not possible to conclude about the impact of the Information and Communication Technology (ICT) that may have on parent and adolescent communication without relating their choice and usage of these devices(Odendaal et al., 2015).

A similar study to ours was conducted in Taiwan in 2015. The researcher had looked at parents and teenager communications using new age communication devices. 400 parents and adolescence were recruited using the internet as a media of reaching out to potential participants. The results from this study show that parents initiate communications with their adolescents derived from various motives, facilitated by relational maintenance and achieved different aspects of intimacy.(Chang, 2015)

A study conducted in Spain in 2015 showed that there was a close relationship between cyber-bullying and parent-adolescent relationships(Larrañaga et al., 2016). This study reported that adolescents who had reported cyber-bullying victimisation had poor communication with their mothers and that most of them were subjected to verbal abuse via device technology(Larrañaga et al., 2016). The final conclusion of this study was there was a strong co-relation between family communication problems and IT based bullying. However, this study had not reported if the bullying were external or parental perpetrators.

An internet study conducted in 2008 in the US had studied relationships among adolescents in terms of friend relationships, romantic partners, strangers and their own families in the context of using internet accessible devices(Subrahmanyam and Greenfield, 2008). Most teenagers had reported to use these means of communication to strengthen the relationship with their communicators(Subrahmanyam and Greenfield, 2008). They had also reported that social communication with their peers via device technology may be reinforcing peer communication and causing a regress in their communication with

parents(Subrahmanyam and Greenfield, 2008, Bonka S. Boneva). It is a possibility that parents are forced or touted to use devices as a mode of possible effective communication with their parents.

Although there was no current studies done on parent and adolescents communication using devices, there was a baseline study done in 2013 among Malay citizens of Kuala Lumpur(Razali and Razali, 2013). The study reports there is good reality communication among the Malays and that they are satisfied with the communication among the parents and adolescents. A Sweedish study conducted in 2008 had shown that over the years, in a modern and progressive society, parents were more likely to use the internet to get better health tips/ options for the benefit of their children (Plantin and Daneback, 2009). This goes to show that parents then were making amends to their beliefs and traditional ways by getting involve with more modern communication methods to reach out for their child's benefits (Davis et al., 2010).

Among all the studies, it was noted that the commonest mode of measuring the satisfaction of communication among parents and adolescents was measured using the Parent Adolescent Communication Scale (PACS) developed in 1985 by Barnes and Olson(Barnes, 1985). This Scale consists of a 20-item list of questions that measures the satisfaction of adolescents and parents communication with one another. There is no demarcations for the scoring for this scale- it is said by Barnes and Olson that the higher the score- the better the communication(Barnes, 1985). The researchers in this study have created a demarcation based on expert opinions that any score above 80% is considered good communication.

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Justification of study

There have been numerous studies locally and internationally about parent and teenager communication, however there are very few studies showing the communication timing using technology and the satisfaction of communication among the pairs that use different modes of communication devices.

This study was conducted to add to the knowledge pool of the current mode/choice of parent-teenager communication and their current satisfaction of communication between the pairs.

Objectives

General objective

To evaluate real and virtual time communication between teenagers and their parents

Specific objectives

1. To determine the contact frequency and duration between the parent and teenager pair with regards to:
 - a. Personal, face to face contact (no electronic devices used).
 - b. Face to face contact using screen time (real-time video communication)
 - c. Using voice communication (real-time audio communication)
 - d. Using text communication (any form of social media, text, sms, or email)
2. To determine the preferred choice of communication and satisfaction level of the parent and teenager pair.
3. To make parents aware of the current parent-teenager communication preference

Methodology

Overview of Research design

This was a cross sectional study carried out from October till November 2016 (before the commencing of the school holidays to capture a more accurate daily communication between parent and teenager). The target population for this study were parents and teenagers who visited shopping centres together. First, the researchers identified all shopping centres within the Kinta district which was 19 shopping centres. We randomised 10 shopping centres and sent a letter to each shopping centre requesting to conduct the study at their premises. However only 5 shopping centres granted us permission to conduct the survey at their premises. The researchers visited the 5 shopping centres during Saturday afternoons (3pm – 9pm) to approach potential participants. Parent-teenager pairs were approached- only parent-teenager pairs present at the time of the interview were approached (convenient sampling). The researchers explained the study to them with the aid of a participant information sheet in the language of their choice (BM or English). Only those who complied to the inclusion/exclusion criteria were selected for this study. If the pair agreed, they were asked to sign an informed consent (parent) and an assent (teenager) to show their agreement to participation. Had they not agreed, the researchers moved on to the next pair that was available. Pairs who agreed were given a self-administered questionnaire to fill out. The questionnaire consisted of 3 parts- the basic demography of the participant, a 24-hour parent-teenager communication recall (self-developed) and the satisfaction of communication between the pair using devices and in reality (validated questionnaire). The pair was not allowed to communicate while they were answering the questionnaire. The participants were given 15 minutes to complete the questionnaire and once they were done, both questionnaires were combined together and coded with the same number to enable pairing analysis. All responses remain anonymous. Data was then entered and analysed in SPSS v 20.0.

Phase 1: Development of data collection tools and pre-test

The interview questionnaire was developed, consisting of 3 sections:

- a) Demography details of the participants
- b) 24-hour parent-teenager communication recall
- c) The satisfaction of communication between parents and teenagers
(Parent-Adolescent Communication Scale, Cronbach alpha 0.81)

Training and reliability evaluation of the interviewers and coders: Practice of 24-hour recall on at least 5 parents and 5 teenagers.

Phase 2: Conducting the Face-to-face structured interview

Registration with National Medical Research Registry (NMRR)

Random sampling (using EpiCalc v1.01) of 5 shopping complex (from a possible 19) within the Kinta district. Permission was obtained from management of individual study sites

Convenient sampling of 307 pairs of parents and teenagers on Saturday afternoons (3pm – 9pm)

Inclusion criteria

- a) Both child and parent should be present (mother preferred in interview if both parents present)
- b) If more than one child, choose the eldest one who living together
- c) Teenagers aged 13 – 17 years old

Exclusion criteria

- a) Grandparents who looked after the teenagers
- b) Maids who looked after the teenagers
- c) Teenagers and parents with major psychiatric disorders and major disabilities

Excluded

The participants are given 15 minutes to complete the questionnaire and once they are done, both questionnaire will be tagged and coded to link the parent and teenager responses. Upon verbal informed consent from both parent and teenager, researchers conducted the interview

Data entered and analysed using SPSS v20

Figure 2 : Methodology flow chart

Study type

This was a cross-sectional study conducted in 5 randomly selected shopping malls within the Kinta district. A total of 19 shopping centres were identified within the Kinta district. The selection of shopping centres was done via a random selection methods from 19 possible shopping centres in the Kinta District. Each shopping mall was assigned to a random number before selection. Using the EpiCalc v1.01 software, 10 random numbers were selected from 19- 5 as primarily selected shopping centres, and 5 as back-up (in case no approval received from randomised shopping centre management). Each shopping centre was approached as per randomisation until 5 centres agreed to allow the researchers to conduct the study at their premises. The researchers then visited each shopping centre intending to sample the parents via convenient sampling- all parent-teenager pairs in the shopping centres will be approached to participate in this study.

Tools

A 24-hour communication recall using a self-administered questionnaire was used to obtain information on the mode of parent-teenager communication (self-developed). The pair was first asked on their basic demographic variables. They were then asked on their most common mode of communication in general and the communication among the pairings- modes of communication, usage of devices for communication, applications/programs used for communication.

The communication satisfaction of parent and teenager was collected using the Parents-Adolescent Communication Scale (PACS) a validated, self-administered questionnaire. PACS was developed by Barnes and Olson (1985, Cronbach alpha 0.81) was used to measure the communication between the pair while using devices and in reality. It is 20-item Likert scales that have 3 responses to evaluate the satisfaction. The 20-items in this scale was measured 2 types of communication satisfaction: were marked.

A scoring done to determine the Parent-Adolescent Communication Scale (PACS). For questions 1,3,7,8,9,13,14,16,17 and 18, the sections marked as "disagree" as 1 point, "neutral" with 2 points and "agree" with 3 points. There reverse was done for questions 2,4,5,6,10,11,12,15,18,19 and 20.

The PACS was scored as a whole (all 20 items). The minimum possible score achievable is 20 and the maximum score will be 60. The scoring was determined as the higher the score- the better was the communication.

Ethical Considerations

This study was registered with the National Medical Research Registry and obtained the ethical approval of the Medical Research Ethical Committee. All responses in this study were considered as confidential and no unique identifiers have obtained. An informed consent was obtained from the parent and an ascent from the teenager before participation. The pair (either one or both) can refuse participation. They also be given an option to withdraw from the study at any time should they wish to. The responses by both parent and teenager were kept confidential from one another. Data from this study did not identify any individual in the full report and the researchers intend to treat it in the similar manner for the manuscript writing, presentation or publication. All data collected were stored in a box (lock and key mechanism) that were provided/kept by the researchers.

Sampling

The researchers discussed with a senior community paediatrician on his opinion of the current parent-teenager communication via technology. It was assumed that on an average- 20% of the communication time (per day) is spent by the pairing to communicate via technology (this was excluding the time spent for sleeping). Using EpiCalc v 1.01, a single proportion precision sample size calculation was used. Setting the confidence interval at 95%, setting the proportion at 20% and the precision at 5%- the sample size needed was **245 pairs**. Considering a drop-out rate of 20% during the study, a sample of **307 pairs** was needed (62 pairs per shopping centre).

Inclusion criteria

1. Both child and parent should be present (preference for mothers to be interviewed if both parents present)
2. If more than one child present, the eldest teenager living together with parents was selected
3. Teenagers aged between 13 – 17 years old

Exclusion criteria

1. Grandparents who looked after the teenagers
2. Maids who looked after the teenagers
3. Teenagers and parents with major psychiatric disorders and major disabilities

Study setting

The researchers visited shopping centres to collect data. The researchers visited common areas where parent-teenager pairings could be found- ie food courts, bookshops etc. 5 shopping centres were randomly selected from a list of 19 as explained previously.

Techniques for data collection & pre-testing

The researchers collected data via a self-administered questionnaire which was self-administered to the pairing. The researcher provided a questionnaire to both parent and teenager- which they answered separately. They were given 15 minutes to answer the questionnaire. Once they were done, they submitted their responses to the researchers. To ensure that the researchers recognised that the 2 responses were a pairing, the researchers checked both the unique id numbers on each questionnaire- ensuring that they are the same. As an added security measure, the responses were stapled together before being put into the data collection box. The questionnaire was first pre-tested among 5 nurses to see for any short comings of the questionnaire. Modifications were made to the questionnaire before the start of data collection. The communication satisfaction was measured using a validated questionnaire titled the "Parent-Adolescent Communication Scale".

Primary outcomes

The numbers of frequency and minutes parents communicate with teenagers via different modes.

Secondary outcome

The different modes of communication used by the parent-teenager pairs with their satisfaction levels.

The number of times communication takes places in a day via different modes.

Results

Figure 3 shows the flow chart of the response rate and the final number of participants obtained. All 10 randomly selected supermarket in the Kinta district were approached according to descending order of the randomisation. Once 5 shopping centres agreed to allow the researchers to use the premises for the research, further applications were put on hold. The researchers then visited the 5 shopping centres on a selected Saturday (before the start of the school holidays). The researchers approached 434 pairs within the shopping centres, of which 314 consented to participate making the percentage of participation-to-approach rate at 72.4%. From the 314, 5 participants were excluded as they handed in incomplete questionnaire. The final pairs entered for analysis was 309 pairs (126%). The reason a large sample was obtained was because the researchers initially feared that would not achieve the sample size (due to non-existing pairs at the time of the study at shopping centres or incomplete forms). However, the number of pairs that presented during the weekends were rather large and there were only 5 incomplete forms, thus the sample of 126% from the estimated sample size needed was reached.

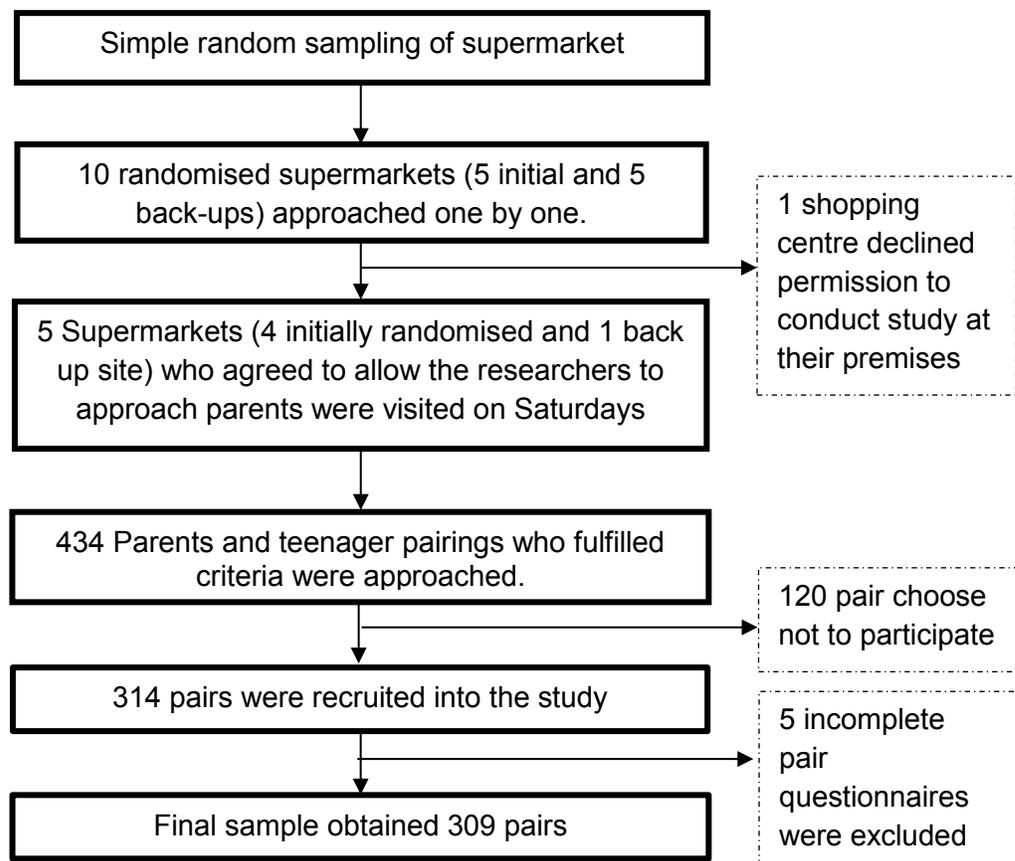


Figure 3: Flow chart of obtaining the final sample and response rate

Social demography of participants

Table 1 describes the characteristics of parents and teenagers who participated in this study. Participating parents were mostly mothers, with a mean age of 44.28, of Malay ethnicity and were from the lower managerial, administrative and professional occupational groups whereas most teenagers were of a mean age of 15, of Malay ethnicity and were young ladies. Most parents were working flexible hours and roughly worked for about 11 hours per day. Most parents and teenagers generally communicated with the rest of the world using mobile phones, especially using the Whatsapp® and were largely in the form of text messages. Full details of the participants' demography can be seen in Table 1.

Table 1: Socio-demographic characteristic of participating parent and teenager.

Socio-demographic characteristics	Parent (n=307) n (%)	Teenager(n=307) n (%)
Age*	44.28(6.25)	15.00(1.32)
Ethnicity		
Malay	276(89.3)	276(89.3)
Chinese	17(5.5)	17(5.5)
India	16(5.2)	16(5.2)
Others	0(0.0)	0(0.0)
Relationship with the teenager		
Father/Male	126(40.8)	100(32.4)
Mother/Female	183(59.2)	209(67.6)
Occupation		
Higher managerial, administrative and professional occupations	0(0.0)	
Lower managerial, administrative and professional occupations	24(7.8)	
Intermediate occupations	96(31.1)	NA
Small employers and own account workers	15(4.9)	
Lower supervisory and technical occupations	10(3.2)	
Semi-routine occupations	57(18.4)	
Routine occupations	10(3.2)	
Never worked and long-term unemployed	97(31.4)	
Nature of working hours		
Flexible	183(59.2)	NA
Fixed	126(40.8)	
Total hours at work per day*	10.90(5.473)	NA
Commonest device use for communication		
Mobile phone	267(86.4)	277(89.6)
PC	0(0.0)	0(0.0)
Laptop	0(0.0)	3(1.0)
Phablet	1(0.3)	0(0.0)
Mobile phone and PC	3(1.0)	8(2.6)
Mobile phone and Laptop	9(2.9)	17(5.5)
Mobile phone and Phablet	3(1.0)	0(0.0)
Mobile phone, PC and Laptop	22(7.1)	3(1.0)
Mobile phone, Laptop and Phablet	1(0.3)	1(0.3)
Mobile phone, PC, Laptop and Phablet	3(1.0)	0(0.0)

Socio-demographic characteristics	Parent (n=307) n (%)	Teenager(n=307) n (%)
Commonest app/program used for communication in general		
WhatsApp®	299(96.8)	283(91.6)
WeChat®	50(16.2)	44(14.2)
Facebook®	102(33.0)	30(9.7)
Twitter®	13(4.2)	10(3.2)
Skype®	6(1.9)	5(1.6)
Facetime®	3(1.0)	9(2.9)
Telegram®	9(2.9)	6(1.9)
Line®	8(2.6)	3(1.0)
Email	59(19.1)	7(2.3)
Others	6(1.9)	4(1.2)
Commonest mode of communication with any gadget in general		
Text	288(93.2)	258(83.5)
Voice Call	2(0.6)	25(8.1)
Facetime®	10(3.2)	4(1.3)
Text and Voice Call	0(0.0)	18(5.8)
Text and Facetime	7(2.3)	1(0.3)
Voice Call and Facetime	0(0.0)	1(0.3)
Text, Voice Call and Facetime	2(0.6)	2(0.6)

*Mean (SD)

Parent and teenager communication demography

Table 2 describes parents' and teenagers' communication with each other over the last 24 hours via face to face and using devices. Most parents reported that they had more communication with their teenager via face-to-face when asked about a 24-hour recall regarding their communication. Parents reported to have communicated a mean of 8.58 (SD:18.15) times using face-to-face communication which was roughly estimated to be for 53.31 minutes. The commonest (mode) number of times that the pairs communicated (as per reported by the parents) was 3 times per day. The teenagers, similar to parents, reported a mean of 7.54 (7.21) frequency of communicating face to face with their parents as the most common method of communication. The commonest (mode) number of times that the pairings communicated (as per reported by the teenager) was 10 times per day. Teenagers roughly spent 49.79 minutes a day communicating face to face with their parents in a day. The pairing- when communicating with their devices for a mean of 6.23 times per day for parents and 7.15 times for teenagers. The mean number of minutes spent a day communicating with devices between the pairs was 19.92 for parents and 35.66 for teenagers. They communicated mostly using Whatsapp® as their preferred application for text communication. Most parents and teenagers perceive that their communication with each other is satisfactory, although teenagers felt that their communication with their parents can be improved. A correlation was done between the hours and frequency of the claims made by parents and teenagers that took place over the last 24 hours. The researchers found that the r value was 0.99 which meant that it was highly likely that both parent and teenagers were reporting the actual numbers accurately.

Table 2 : Communication between participating parents and teenagers over 24-hours via face to face and using devices

Communication frequency with parent/teenager in the last 24 hours via		Parents (n=307)		Teenagers (n=307)	
		Mean (SD)	Mode	Mean (SD)	Mode
Face to face/personal		8.58 (18.15)	3	7.54 (7.21)	10
Device	Face to face contact using screen time (video call)	0.46 (1.47)	0	0.46 (1.58)	0
	Using voice communication	2.94 (4.05)	0	3.19 (4.34)	0
	Using text communication	2.83 (3.41)	0	3.50 (7.11)	0
Minutes communicate with parent/teenager in the last 24hours via					
Face to face/personal		53.31 (108.8)	20	49.79 (87.74)	20
Device	Face to face contact using screen time (video call)	1.75 (5.33)	0	2.48 (7.52)	0
	Using voice communication	9.61 (13.43)	0	17.86 (40.41)	0
	Using text communication	8.56 (11.76)	0	15.32 (34.05)	0
Commonest app/program used for communication with child n(%)					
WhatsApp®		291(94.2)		289(93.5)	
WeChat®		15(4.9)		23(7.4)	
Facebook®		16(5.2)		36(11.7)	
Twitter®		1(0.3)		5(1.6)	
Skype®		2(0.6)		2(0.6)	
Facetime®		21(6.8)		39(12.6)	
Telegram®		3(1.0)		6(1.9)	
Line®		4(1.3)		4(1.3)	
Email		4(1.3)		7(2.3)	
Others		4(1.3)		4(1.3)	
Communication satisfaction with parent/teenager, n(%)					
Yes		292(94.5)		291(94.2)	
No		17(5.5)		18(5.8)	
Need to improve the way of communication with parent/teenager, n(%)					
Yes		147(47.6)		159(51.5)	
No		162(52.4)		150(48.5)	

Favourite and preferred mode of communication among pairings

Table 3 shows the favourite (currently practiced) and preferred (ideally what the pairs would like in terms of communication) communication modes of parents and teenagers. The pairs reported that their favourite way to communicate via face to face in person. 229 (74.1%) of parents and 224 (72.5%) of teenagers reported that the most ideal way of communication was face to face in person. The least ideal way reported by parents [187 (60.5%)] and teenagers [176 (57.0%)] that they were communicating with was via face-to-face contact using screen time. The practice of communication reflected on the perception of the pairings ideal way of communication. The most ideal way the pairs preferred to communication was via face to face- parents [248 (80.3%)] and teenagers [247 (79.9)]. The least ideal way that they preferred communicating in was with face-to-face using screen time.

Table 3: Rank of favourite and preferred mode of communication among the pairings

Rank of favourite and ideally mode of communication within	Most Ideal n (%)	Ideal n (%)	Less Ideal n (%)	Least Ideal n (%)
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the participating parent									
Favourite mode of communication		Parent	Teenager	Parent	Teenager	Parent	Teenager	Parent	Teenager
Face-to-face/personal		229 (74.1)	224 (72.5)	35 (11.3)	32 (10.4)	25 (8.1)	34 (11.0)	20 (6.5)	19 (6.1)
Device	Face-to-face contact using screen time	21 (6.8)	26 (8.4)	49 (15.9)	43 (13.9)	52 (16.8)	64 (20.7)	187 (60.5)	176 (57.0)
	Using voice communication	65 (21.0)	48 (15.5)	158 (51.1)	169 (54.7)	64 (20.7)	69 (22.3)	22 (7.1)	23 (7.4)
	Using text communication	28 (9.1)	53 (17.2)	62 (20.1)	60 (19.4)	137 (44.3)	116 (37.5)	82 (26.5)	80 (25.9)
Pairings preferred method of communication		Parent	Teenager	Parent	Teenager	Parent	Teenager	Parent	Teenager
Face-to-face/personal		248 (80.3)	247 (79.9)	23 (7.4)	31 (10.0)	17 (5.5)	13 (4.2)	21 (6.8)	18 (5.8)
Device	Face-to-face contact using screen time	20 (6.5)	25 (8.1)	53 (17.2)	43 (13.9)	62 (20.1)	65 (21.0)	174 (56.3)	176 (57.0)
	Using voice communication	52 (16.8)	58 (18.8)	173 (56.0)	173 (56.0)	62 (20.1)	63 (20.4)	22 (7.1)	15 (4.9)
	Using text communication	21 (6.8)	29 (9.4)	55 (17.8)	48 (15.5)	139 (45.0)	140 (45.3)	94 (30.4)	92 (29.8)

PACS mean scores of parents and teenagers using face to face communication

With regards to communication face to face, parents scored a mean of 42.29 (5.17) and teenagers 42.39 (5.63) from a possible score of 60. An independent t-test was performed between the two scores and there was no statistically significant difference ($p=0.82$)

PACS mean scores of parents and teenagers using devices

The analysis of the PACS scoring by the parents and teenagers was calculated. With regards of communication using devices, parents scored a mean of 41.58 (5.21) and teenagers 42.17 (5.33) from a possible score of 60. An independent t-test was performed between the two scores and it showed no statistical significant difference ($p=0.16$)

Individual paired comparison of PACS scores between parents and teenagers using face to face communication and devices

An analysis was conducted to see the difference between the PACS scores of parents and teenagers. The researchers subtracted each parent's score with their teenager's score and the resultant was the difference of the score. A one-way ANOVA was conducted to see the difference between the 308 pairs. The difference in scores with relation to face to face showed no significant difference ($p=0.83$). The same analysis was conducted with relation to communication with devices and the difference was not statistically significant ($p=0.09$)

Discussion

Principal findings

From this research, the researchers found that parents and teenagers were communicating the similar number of times a day and for the same number of minutes face to face. However, on a whole, teenagers reported that they were communicating more between the pairs using communication devices compared to the parents. The most common way that parents were communicating with their teenagers and vice versa was via face to face communication and it was similar for the pairings preference. There was no difference in the PACS scorings between the parent and teenager pairings showing that their satisfactions of communication were similar. Parents and teenagers perceived that they had good communication among themselves, however most of them felt that there was still room for improvement.

Strengths and limitations

Strengths

This is the first study in the country to determine the mode of communication between parents and teenagers.

We used a validated scale to measure the satisfaction of communication between parents and teenagers, which allows a valid measurement of the outcomes.

Limitations

The parent-teenager pairs were sampled at shopping centres, when they were present together. Due to this sampling method, there is a possibility of selection bias--parents and teenagers who were present together during weekends at shopping centres probably have better relationships. Therefore, communication time and satisfaction may be overestimated.

Due to convenient sampling, the ethnicity of participants enrolled for this study did not accurately reflect the proportions in the actual population, and thus results of the study may not be generalisable to the parent-teenager population in the country.

Comparison with other studies

Table 4 shows the comparison between other relevant studies and our study. The 2 similar studies below looks as the average PACS scores between parents and teenagers but did not look into detail if they were pairs staying within the same house and the number of times/minutes that they had communicated on average in a day. The PACS scoring difference was about the same with our study, although the sample size were smaller.

Table 4: Table showing the treatment of scenarios

Author	Year	Country	Sample	Parents			Teenagers		
				Frequency	Minutes	PACS	Frequency	Minutes	PACS
Toombs E	2014	Canada	18	NA	NA	15.13 (9.45)	NA	NA	9.94 (10.07)
Boone D M	2015	U.S	158	NA	NA	32.43 (8.89)	NA	NA	33.76 (6.82)
This study	2016	Malaysia	618	8.58 (18.15)	53.31	42.29 (5.17)	7.54 (7.21)	49.79	42.39 (5.63)

Implication for clinicians, policy makers and public

This study shows that the communication between parents and teenagers has room for improvement. The public needs to understand that the newer generation might communicate more with devices but they still prefer to communicate face to face with their parents.

The parent teenager pairs selected in this study appear to be communicating both verbally and by devices. There is a preference for face to face communication by both parties. It is important that we promote that to parents and that they recognise that teenagers do prefer face to face communication. Device communication, while convenient may not meet the needs of teenagers.

Unanswered questions and future research

The communication between parents and teenagers who do not live in the same premises might have different responses to the one currently obtained.

There should be cut-off points for the PACS scoring to be able to grade parents and teenagers on the quality of their communication.

Conclusion

This study unexpectedly found that parents and teenagers communicate with each other more via face to face compared to using devices. Both parents and teenagers expressed that the ideal way for communication is via face to face. They also felt that although they might be happy with their communication, there was room for improvement.

Recommendations

The researchers recommend that parents need to recognise that teenagers prefer face to face communication and use this means to improve their communication with their teenagers.

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