



# Investigation of a Preliminary Mixed Method of Phubbing and Social Connectedness in Adolescents

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## Original Article

### Abstract

**Background:** The exponential growth of smartphones has afforded many users with ubiquitous access to socialization as seen in the various mobile apps used to communicate and connect with others. The present study employed mixed-method approaches to analyse the impact of phubbing on social connectedness among adolescents in Malaysia.

**Methods:** A total of 568 adolescents were participated in quantitative surveys, and of these participating adolescents, 6 were further invited to join focus group interviews.

**Findings:** Quantitative findings supported the mediating role of communication disturbance in the relationships between phone obsession and familial connectedness, school connectedness, and self-connectedness, but not for friendship connectedness. Qualitative findings further elucidated the detrimental effect of phone obsession on their sense of belonging from the perspectives of adolescents.

**Conclusion:** This study reaffirms that phubbing behaviour is predictive of social disconnectedness. Therefore, preventive and treatment interventions should be developed to avoid and control a potential risk of social disconnectedness epidemics attribute to phubbing.

**Keywords:** Adolescent; Communication; Malaysia; Screen time

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## Introduction

According to the latest statistics from GSMA Intelligence, smartphone adoption in 2017 has surpassed 57% of the total 7.8 billion mobile connections globally.<sup>1</sup> The number of smartphone users is forecast to reach 77% by 2025. By increasing ownership to portable smart devices worldwide, it was found that more adolescents utilize these devices regularly for communication and social networking purposes.<sup>2,3</sup> While owning a smartphone in itself is not a cause of concern, some users become addicted, and spend more time online. Although there is no official statistics on smartphone addiction have been compiled in Malaysia, inferences can be drawn from countries that boast a similar level of smartphone penetration. In South Korea, a study found 1042000 people to be at a high risk of smartphone addiction, and teenagers were the largest group at 30.6% followed by pre-schoolers at 17.9%.<sup>4</sup> Information released by TOUCH Cyber Wellness, a Singaporean organization advocating responsible use of digital technologies also indicates a similar pattern. Cases involving excessive use of mobile devices by children referred to them have more than doubled in three years, rising from 34 in 2015 to 76 in 2017. On average, the organization reported getting 8 to 10 calls a week from parents seeking advice regarding their children's smartphone use.<sup>5</sup>

Phubbing, a blend word of phone and snubbing, is an act of snubbing which someone gazes at the phone in social settings without paying attention on others in their surroundings.<sup>3</sup> Phubbing is seen as a serious mental health issue for a number of reasons. It can cause symptoms similar to that of substance addiction, including overuse, tolerance, withdrawal, disturbances in daily life, and positive anticipation.<sup>6,7</sup> Phubbing is also associated with low self-esteem, behavioural and emotional difficulties, and poor communication among adolescents.<sup>8-12</sup> A large body of research similarly reported that heavy phone use in youth were more susceptible to physical and psychological ill-being.<sup>2,3,13-15</sup> It is undeniably that the omnipresence of and continuous access to smartphone is gradually changing human social behaviours.<sup>16</sup> While smartphone has slowly eased its way into our lives, people tend to regularly check their

smartphones for constant updates from the world of information.<sup>17</sup> Most of the time, smartphone users are unwilling to put down their mobile phones as they do not want to miss any of their messages or notifications.<sup>18</sup> It is further concurred that techno-habit is hard to break and people nowadays are kept looking at their fingertips regardless of where they are. Therefore, people are spending less time on everyday interactions due to their strong inclination toward smartphones.

Moreover, phubbing behaviour has significantly altered communication manners of phubbers during conversations. People did not seem to be conversing at all, but totally enthralled with their phones.<sup>13,19</sup> As a consequence, physical social cues like eye contact, intonation, and immediate response during face-to-face interactions are reduced or even absent among phubbers, and this, in turn, affects the quality of connections with others in their physical life.<sup>20</sup> The habit of ignoring someone in favour of a mobile phone might be hurting relationships in the long run.<sup>13</sup> This is because phubbers have difficulty for not taking a look at the screen to see what is going to, especially when their phones are constantly receiving some notification.<sup>3</sup> Without doubt, the quality of the relationship is claimed to be lower if a person is relentlessly drawn into the world of information.<sup>21</sup> Based on the reviews on all these studies, mobile phones have appeared to slowly take control over its users, and bring detrimental effects on their physical social functioning. This begs a question that the rise of mobile technology actually made people less social.

Although many studies have shown that mobile phones result in negative social effects, some previous studies opposed the notion. For instance, some revealed that mobile phone is a powerful tool for self-expression among adolescents, as well as for socialization purpose.<sup>22</sup> To some extent, mobile phone use is found to enhance the feeling of belonging and social connectedness.<sup>23-24</sup> Another similar study found that Facebook status updates created a sense of connectedness between users.<sup>25</sup> The more Facebook users disclose themselves online, the more they feel connected to one another. Furthermore, a research examined social media use and social connectedness in adolescents stated that social media improved adolescents' belonging, psychological wellbeing, and identity

development.<sup>26</sup> Lack of a coherent body of prior studies gives a fresh impetus to this research to reinvestigate the actual impact of phubbing on adolescents' social connectedness.

Social connectedness refers to a person's sense of belonging and relatedness.<sup>27</sup> Higher social connectedness was found to yield positive development and overall health outcomes,<sup>28,29</sup> as well as lower anxiety, depression, and loneliness.<sup>30,31</sup> Research has shown that adolescents remain strong needs to form connection with family, friend, school, and the self.<sup>32</sup> Research suggested that these four types of connectedness could safeguard adolescents from depression<sup>33-34</sup> and negative mood symptoms.<sup>35</sup> Besides that, the better social connectedness in the early years, the lower a person reports mental health problems and substance abuse.<sup>36,37</sup> Given the inconsistent findings on the impact of mobile phone use on adolescent social connectedness,<sup>26</sup> the present study sought to investigate the associations among phone obsession, communication disturbances, and social connectedness in a sample of adolescents, as well as how adolescents perceived the act of phubbing.

## Methods

Given quantitative and qualitative data were both needed to achieve the research aims, data were collected via surveys and interviews. The target population was adolescents ranged from 13 to 18 years old. Participants were recruited from nine secondary schools in three different independent zones in Kuala Lumpur state, Malaysia, using multi-stage cluster sampling approach. At the first stage, the state was divided into zones, and then three zones were selected randomly. The chosen zones were further subdivided into the number of schools, and then the sample of three schools were taken at random at the second stage. Reaching to the third stage, two school classes were randomly selected from the schools chosen at the second stage. Altogether, a total of 568 surveys were collected. Of the quantitative sample, we restricted our interview sample to secondary school students whose score on the scale were not more than one standard deviation (SD) from the mean. This technique is called purpose sampling strategies for Typical Case Sampling, which was to ensure that all participants had previous experience in using

smartphone to communicate. The semi-structured interviews had 6 participants ranged between 13 and 18 years old.

Phubbing behavior was measured using the Phubbing Scale.<sup>7</sup> It consists of 10 items designed to assess an individual's phubbing and communication disturbance. Each item is answered on a 5-point Likert-type scale ranging from 1 (Never) to 5 (Always). In this study, the Cronbach's alpha coefficient for the Phubbing Scale was 0.812 for communication disturbance and 0.843 for phone obsession. Subsequently, social connectedness was measured using the Hemingway Measure of Adolescent Connectedness.<sup>32</sup> It consists of 41 items which is designed to assess four types of social connectedness. Each item is answered on a 5-point Likert-type scale ranging from 1 (Not at all) to 5 (Very true). Subscale scores were computed after reverse coded all the negatively keyed items. In this study, the alpha coefficient for the scale was 0.835 for familial connectedness, 0.823 for friendship connectedness, 0.701 for school connectedness, and 0.729 for self-connectedness.

Before administering quantitative surveys, an official permission from the school principal was obtained. Upon obtaining the permission, students in few classrooms were approached to seek for their willingness to join in this research. All participants were requested to provide their assent in participating in this study, together with their parental consent. The researchers were also briefed the students about the purposes of the study and the potential risks/benefits before completing the survey. The surveys took about 15 minutes to complete. Participants were assured about their data confidentiality and anonymity. A session of focus-group interview was subsequently conducted in English. The session lasted about one hour and twenty-two minutes. Permission for the interviews and recordings was sought from the participants, and the transcripts and interpretations were made available for them to comment. This aimed to ensure the validity of data analysis and interpretation to achieve better methodological rigour. There were two main questions asked in the focus group, which were "How would you think about the behaviour of using mobile phone in social settings?" and "What are the differences in perceived social connectedness between phubbers and non-

phubbers?”. To avoid researcher bias, the bracketing of presuppositions was carried out throughout the study, and the researchers continually reflected to prevent preconceived biases from influencing their understanding of participants’ descriptions. The research protocol was reviewed and approved by the Departmental Review Board of UCSI University.

Analyses of the quantitative and qualitative data were proceeded in sequence.<sup>38</sup> For the quantitative analysis, data were imported into the analytical tool for statistical computation (i.e., descriptive and inferential statistics). The descriptive statistics were used for reporting demographic profile, whereas the inferential statistics were used for hypothesis testing. To reach research conclusions, path analysis was used to test the association between variables. As for qualitative analysis, data collected from the focus group were transcribed using Excel. Once the transcription was done, open coding was carried out by identifying the significant statements from the transcription. The analysis was continued by identifying the correlations between the statements in order to generate axial coding. The coding process was then led to thematic analysis to identify meaningful themes.

To ensure the dependability and credibility of the qualitative interpretation, member checking, and audit trail were conducted.

## Results

Participants consisted of 568 adolescents (234 men and 334 women) aged between 13 and 18 years, with an average age of 15.35 years ( $SD = 1.743$ ). In terms of the ethnicity, 16% of the sample self-reported as Malay, 74.8% as Chinese, 8.1% as Indian, and 1.0% as others. Participants were skewed to nuclear family which comprised of 498 (87.7%), 47 (8.3%) were extended family, 19 (3.3%) were blended family, and 4 (0.7%) were single family.

Figure 1 shows that the relationship between phone obsession and communication disturbance was significant [unstandardized regression weight ( $b = 0.500$ ), standardized regression weight ( $\beta = 0.581$ ,  $P < 0.001$ )]. While the relationship between communication disturbance and connectedness to friends was not significant ( $b = -0.064$ ,  $\beta = -0.059$ ,  $P > 0.050$ ); communication disturbance had a significant negative relationship with connectedness to family ( $b = -0.273$ ,  $\beta = -0.147$ ,  $P < 0.001$ ), connectedness to school ( $b = -0.293$ ,  $\beta = -0.180$ ,  $P < 0.001$ ), and connectedness to self ( $b = -0.287$ ,  $\beta = -0.170$ ,  $P < 0.001$ ).

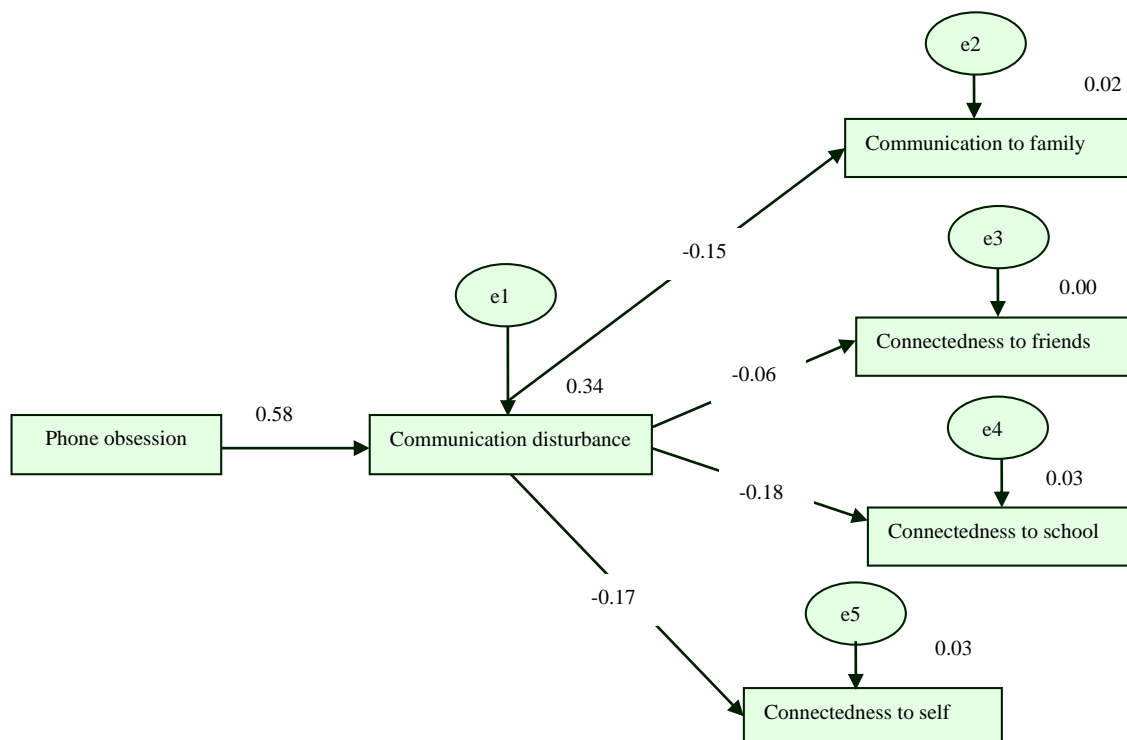


Figure 1. Standardized estimates in this study

**Table 1.** Mediation analysis of communication disturbance

Path	Indirect effects
Phone obsession → Communication disturbance → Connectedness to family	b = -0.137 β = -0.085 P = 0.002
Phone obsession → Communication disturbance → Connectedness to friends	b = -0.032 β = -0.034 P = 0.145
Phone obsession → Communication disturbance → Connectedness to school	b = -0.146 β = -0.105 P = 0.001
Phone obsession → Communication disturbance → Connectedness to self	b = -0.143 β = -0.099 P = 0.001

b = Unstandardized regression weight; β = Standardized regression weight

Table 1 shows the mediational analysis of communication disturbance. Results demonstrated that there was a significant indirect effect between phone obsession and connectedness to family through communication disturbance, as well as in the relationship between phone obsession and connectedness to school, and the relationship between phone obsession and connectedness to self. However, communication disturbance was not mediated the relationship between the relationship between phone obsession and connectedness to friends.

**(I) Communication disturbance:** It is worth mentioning that the mediator in quantitative study, communication disturbance, was one of the findings in the qualitative study. When discussing about adolescents' views on phubbing, they revealed that they hated to communicate with phubbers because they must repeat many times when talking to phubbers in order to let phubbers aware the message they had delivered. People who admitted themselves as phubbers in the focus group interview also concurred that people around them found their phubbing behaviors were disturbing, although sometimes they also hated themselves for not listening to other people. In the meantime, adolescents who participated in the focus group interview believed that phubbers were lacking of communication and socializing skills, yet they less empathized on other people's feelings. Examples of their statements are "... sometimes if we talk to the people just playing their phone they will not listen to what I am talking about so I need to repeat it twice or again until they get it" (Participant 4) and "I hate myself hahaha...too, because I am being that"

(Participant 4).

**(II) Rude:** Examining data from all six participants in the qualitative sample revealed that most of them felt it was rude to do phubbing in front of other people as they thought phubbing would affect their chance of getting know each other better. By only focusing mobile phones, they did not think there was much interaction for relationship formation. One of the examples is "I feel rude when I am using my phone with people around me, because I might miss the opportunity to get to know them well" (Participant 4). Interesting, some participants agreed that it was a form of nuisance when someone asking them to stop using phones. Some examples include "I would rather people leave me alone whenever I am playing my phone. I will ask them go away" (Participant 2) and "It is always disturbing me when my parents asked me to stop looking at the phone during dinner time" (Participant 3).

**(III) Lifestyle:** Some participants revealed that phubbing had tremendously changed their daily routine. Checking on mobile phone had become one of the must-do things in their daily life, and they felt bored whenever they could not check on their phones. Moreover, phubbing had affected their life as it sometimes interrupted them to do other important tasks. Some instances include "If I keep playing my phone, I will forget everything that I need to do like my homework and anything" (Participant 4), "I don't see checking things online is wasting my time. In fact, I get used to it." (Participant 2), and "Such as boring when I did not touch my phone" (Participant 6).

**(IV) Social connectedness:** Paradoxically, all participants claimed that they felt lonely when



their friends or family members were phubbers, and they would also make people feel lonely when they were phubbing. Example statements include "If all my friends are playing phone and don't talk with me, I will feel very lonely" (Participant 1), "I feel lonely ... I usually talk to my brother but he just non-stop playing the phone, and I just get ignored, I am so sad" (Participant 3), and "Our teacher will feel that she is just talking to air as some students did not put attention on what she said, they were just gazing at their devices" (Participant 1). However, 4 participants agreed that phubbing behaviour is helping them to connect with their friends easily. Some codes include "Since I am playing phone, I get know more friends" (Participant 5) and "I know what my friends are doing through Snapchat" (Participant 6). Another participant answered that "I can get someone to talk to me via WeChat when lonely, it is quite fun though" (Participant 1). While it seems that mobile phone use remains controversial, it is undeniably its usefulness to connect with friends, and aids to reduce a sense of loneliness.

## Discussion

The main objectives of this research were to explore the relationships between phone obsession, communication disturbances, and social connectedness among adolescents as well as their views on phubbing. Using mixed-method approach, we found that phone obsession had a negative effect on familial connectedness through communication disturbance. Correspondingly, participants in the focus group interview also reported that people who preferred to stare at the screen of their mobile phones, tended to ignore social situations, this in turn would ruin their relationships with the closest family members. Consistent with previous research, privatisation between family members is getting common since the emergence of media technology.<sup>2,13</sup> When people have their mobile phones on hand, it is not hard to see that communication between family members has progressively shifted to a mechanical or delayed way. To some extreme case, some may even choose to ignore their family members as they always think they would have more time for each other. This mindset might explain why they take their family members as less priority as compared to their online encounters.

On the other hand, communication disturbance did not mediate the relationship between phone obsession and connectedness with friends. This finding was against some previous research that suggesting mobile phone use has negatively affected friendship ties.<sup>22-26</sup> Nevertheless, most interviewees in the focus group interview perceived that phubbers relatively had fewer friends and less contact with their friends as compared to non-phubbers. In addition, they also believed that phubber might have more e-friends but no close friends in their real life. The reasons narrated by participants were feeling awkward to have face-to-face communication, and lack of common topics. If communication is the main purpose for phubbers to keep using their smartphones, it could play an easy way for them to connect with their friends whom they are unable to meet face-to-face. Ironically, if phubbers use their smartphones when meeting with their friends, it could decrease their connection with their friends. Hence, phubbing can increase as well as decrease friendship connectedness in different ways. Further investigations are needed to investigate the pivotal role of smartphone use on adolescent friendship connectedness.

School connectedness was also found to have a significant negative relationship with phone obsession through communication disturbance. Simultaneously, participants in the focus group interview reported that connectedness with teacher could influence by phubbing behaviour because of their ignorance to the teacher. Aligned with previous studies, students would be less engaged in classroom, as well as score poor recall ability if they have used mobile phones during lessons, and it would directly diminish their academic performance.<sup>39</sup> In addition, it is strongly believed that addiction to the smartphones would lead adolescents indifferent to their school-related commitments.

Finally, the present study supported the mediation role of communication disturbance on the relationship between phone obsession and connectedness to self. This suggests that greater levels of phone obsession associated with higher levels of communication disturbance, which in turn, affected adolescents to less connect toward themselves. When people are being addictive to their mobile phones, they will less intact to their

relationships, lose continuity in their behaviours, become heedless of their skills, interests, and talents, and are passive in pursuing a hope or bright future. These elements together decrease their sense of positivity about themselves, which ultimately lead to detachment from oneself.<sup>25</sup> To the best knowledge, self-connectedness is one of the research gaps in the literature as there are very limited, relevant studies have done so far. Current findings might provide some insight for future research avenue on this aspect.

Besides the quantitative findings, there are some additional findings should be highlighted from the qualitative data. In particular, adolescents agree that users will experience changes in their living habits after getting a smartphone.<sup>16</sup> Loneliness will permeate either within the phubbers themselves or the people around them due to phubbing behaviour. This corresponds to the previous research suggesting that mobile phone use heightens a sense of loneliness among teenagers.<sup>19</sup> Furthermore, most participants in the focus group interview indicated that phubbing was a rude behaviour that resulted in communication barriers, such as the need to repeat the same messages when talking to the phubbers. Previous studies have also confirmed that phubbing would reduce verbal and non-verbal social cues during social interactions due to inattention.<sup>13,20</sup> These may consider as the signs of communication disturbance which mediate the relationship between phubbing and social connectedness in the quantitative study. Communication disturbance is also supported by the Technological Determinism Theory stating that technology influences the way of communication and social interactions between people in today's society.<sup>13</sup> In the current study, mobile phone use was found to have changed the communication pattern, and thereupon changed the culture and society such as social connections between people.

This study had three main limitations. First, the survey questions related to social connectedness were not sufficiently nuanced, whereas our qualitative data revealing more possible social-related aspects. Our findings

suggest that more measures should take in consideration to better conceptualize adolescent social connectedness. Second, the qualitative sample was drawn from the quantitative sample who volunteered to join the interview session, and thus, their responses did not reflect the entire surveyed sample. Finally, the quantitative data were based on adolescents' self-reports surveys, which might involve social desirability biases. However, focus group interviews might be useful to allow adolescents to voice out their opinions freely, suggesting that the biases have a minimal, if any, effect on our analyses. In order to tackle phubbing better, we highly recommend future research considers several key areas. With most of the existing research focused on young adults, there is a particular need for more research examining the causes and risk factors behind phubbing among adolescents. Another research possibility is to distinguish how smartphone addiction is different from other behavioural addictions such as gambling. This may then pave the way for the development of effective interventions for phubbing.

## Conclusion

In conclusion, smartphone has created a new social phenomenon in 21<sup>st</sup> century, known as phubbing. In Malaysia, smartphone users have been dramatically increased over the years. Although the phenomenon of phubbing has been noticed and concerned, there is still lack of research in this area. This study reaffirms that phubbing behaviour is predictive of social disconnectedness. This suggests communication skills appear to be eroded with the tendency of heavy smartphone use. Therefore, preventive and treatment interventions should be developed to avoid and control a potential risk of social disconnectedness epidemics due to phubbing.

## Conflict of Interests

The Authors have no conflict of interest.

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## مطالعه یک روش ترکیبی اولیه برای بررسی ارتباطات اجتماعی و بی‌توجهی به اطرافیان به دلیل استفاده از تلفن هوشمند در بین نوجوانان

چین - سیانگ آنگ<sup>۱</sup>، کای - می تئو<sup>۲</sup>، یونگ - لی اونگ<sup>۲</sup>، سیاو - لی سیاگ<sup>۲</sup>

### مقاله پژوهشی

### چکیده

**مقدمه:** رشد نمایان تلفن‌های هوشمند موجب شده است که کاربران بسیاری در همه جا امکان برقراری ارتباطات اجتماعی را داشته باشند؛ همان چیزی که در نرم‌افزارهای گوناگون موبایلی مورد استفاده برای تماس یا ارتباط با دیگران مشاهده می‌شود. پژوهش حاضر یک روش ترکیبی را با هدف بررسی تأثیر بی‌توجهی به اطرافیان به دلیل استفاده از تلفن هوشمند بر ارتباطات اجتماعی نوجوانان در مالزی مورد استفاده قرار داد.

**روش‌ها:** ۵۶۸ نوجوان به این مطالعه کمی وارد شدند که از بین آنان، ۶ نفر انتخاب شدند تا به گروه هدف بپیوندند و مورد مصاحبه قرار گیرند.

**یافته‌ها:** بررسی‌های کمی حاکی از نقش واسطه‌ای و مخرب وسواس در استفاده از تلفن هوشمند بر ارتباطات خانوادگی، ارتباطات در مدرسه و ارتباطات با خود بود، اما چنین تأثیری بر ارتباطات دوستانه مشاهده نشد. بررسی کیفی نیز نشان دهنده اثر زبان‌بار وسواس در استفاده از تلفن هوشمند در این راستا از دیدگاه نوجوانان بود.

**نتیجه‌گیری:** تحقیق حاضر تأیید می‌کند که عادت به بی‌توجهی به اطرافیان به دلیل استفاده از تلفن هوشمند، منجر به قطع ارتباطات اجتماعی می‌شود. از این‌رو، انجام مداخلات پیشگیری‌کننده و درمانی برای جلوگیری و کنترل خطر بالقوه فراگیر شدن قطع ارتباطات اجتماعی به دلیل استفاده از تلفن هوشمند ضروری به نظر می‌رسد.

**واژگان کلیدی:** نوجوان، ارتباط، مالزی، زمان غربالگری

**ارجاع:** آنگ چین - سیانگ، تئو کای - می، اونگ یونگ - لی، سیاگ سیاو - لی. مطالعه یک روش ترکیبی اولیه برای بررسی ارتباطات اجتماعی و بی‌توجهی به اطرافیان به دلیل استفاده از تلفن هوشمند در بین نوجوانان. مجله اعتیاد و سلامت ۱۳۹۷؛ ۱۱ (۱): ۱۰-۱.

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