New Digital Inequality: The Detox of Mobile Phone Addictions Among the Adolescents in China

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Abstract

According to relevant data from the China Child Development Report, the use of mobile phones by children has become a common phenomenon. Many adolescents are addicted to the pleasure of mobile phones, which leads to addiction. Previous studies have focused on exploring the reasons for children's mobile phone addiction but rarely focused on how to control and correctly guide children to use mobile phones. But there will be new inequalities in how different parents control their children's mobile phone use. This question is important for understanding and bridging the digital divide among children. This paper attempts to clarify the important influence of parents on solving the problem of children's mobile phone addiction through interviews. It finds out that different types of parents have different effects on reducing digital inequality in the process of children's digital detox. It also called on families and society to pay more attention to the problem of mobile phone addiction among children and make concrete efforts to carry out digital detox to reduce inequality.

Keywords: adolescents, mobile phone addictions, digital detox, digital inequality

1. Introduction

According to the 2019 China Child Development Report, whether it is in the school day or weekend children's extracurricular life, electronic devices are in the top three for their time of use. Rural children spend an average of 108.18 minutes using electronic devices on weekends, while urban children spend 88.40 minutes. The excessive use of mobile phones by children has become a common phenomenon. The second gap in the digital divide is the access gap, which refers to whether users will receive increased capital in the use of electronic devices. Few parents worry that their children can't use mobile phones, which also won't increase the child's capital to rely on mobile phones, much less parents specialized training and improving their basic skills in using mobile phones. The biggest conflict between parents and teenagers using mobile phones is to reduce their mobile phone addiction. Now, in this deliberate process of " the detox of mobile phones ", new inequalities have emerged. Parents need to invest more time or provide high-quality companionship to replace the relatively cheaper phone companionship, and to take away the time of adolescents' mobile addiction through other more complex activities, which means that not all parents can afford to provide such substitutes. This new inequality has been less studied but urgently needs attention.

2. Literature Reviews

2.1 Adolescents' Mobile Phone Addictions

With the prevalence of mobile technology, mobile phones have become indispensable to people, not only the existence of tools. Users seem to have become inseparable entities from their mobile devices; for some, smartphones are even considered an extension of themselves. (Ross & Bayer, 2021) In addition, an inverse relationship has been found between age and internet addiction. Young people are more active Internet users, which leads to a higher probability of addiction. (Lozano, Robres & Sánchez, 2022) Young people are particularly vulnerable to technology addiction, paying more attention to mobile phones and using them more inappropriately. (Kim K, Milne G.R, Bahl S, 2018) Previous studies also have shown that children, adolescents, and young people may be a particularly vulnerable group as they often show a pattern of heavy mobile phone use. (Canale & Moretta, *et al.*, 2021) According to the 2020 China National Study on Internet Usage among Minors, the proportion of underage Internet users using mobile phones to access the Internet is 92.2%. At the same time, the explosion and continuation of

COVID-19 has led to the massive popularity of online teaching and has contributed to the further spread of the Internet among underage people. This survey shows that some underage Internet users may already be using the Internet excessively.

Media devices are deeply integrated into the daily lives of adolescents, especially in terms of frequency and duration of use of mobile devices. (Anderson, M., & Jiang, J., 2018) Smartphone addiction also can be compared to internet addiction, as smartphones can be used for a variety of activities such as gambling, gaming, and social networking. (Chen IH, Strong C., *et al.*, 2020) The universal, privately accessible, and ubiquitous features of mobile media meet the basic developmental needs of adolescents and provide the basis for self-socialization. (Anna Schnauber-Stockmann *et al.*, 2021) However, the negative impact cannot be ignored. Excessive use of mobile phones can cause many problems such as addiction to mobile phones. The most conspicuous problem is that the popularity of short videos has encouraged over-immersive use by adolescents. The popularity of short-form videos encourages adolescents to overindulge in them. (Jiangfeng Yang, Yonghe Ti & Yinghua Ye, 2022) Furthermore, due to the company of mobile phones, adolescents are no longer willing to spend a lot of time building real social relationships. They prefer to immerse themselves in the virtual world of the Internet to get pleasure from it, the typical example is that adolescents enjoy playing games on their mobile phones. The main adverse manifestations of mobile phone addiction in children are anxiety and depression when they do not have a phone. The same physical and mental effects as alcohol and drugs. So, its smartphone addiction tendency is also called Digital Heroin. (Murtaza S. A., Moln *á* E., 2021)

Children tend to cling to the virtual world they form with their smartphones and lose touch with the real world. (Kim K., Milne G.R., Bahl S., 2018) In addition, excessive Internet gaming can cause users to lose self-control and interfere with their learning. (Kim D, Nam JK & Keum C, 2022) The problems caused by mobile phone addiction go far beyond this and can even be harmful to the health, psychological development, and learning of adolescents. Mobile phone addiction can have detrimental effects on adolescents' internal development and interpersonal relationships. (Lee, S., Lee, K., *et al.*, 2016) Mobile phone addiction in adolescents is considered a disease being studied in the field of adolescent medicine. (David S. Bickham, 2021) Therefore, from the perspective of an older generation, mobile phone is a source of evil. (Mustsvairo, B., *et. al.*, 2022) Children tend to attach themselves to the virtual world that they have formed with their smartphones and lose contact with the real world. In addition, electronic media use has potentially harmful effects on the home environment. (Poulain, T., Ludwig, J., *et al.*, 2019) Children often acquire and use electronic devices at home. It becomes crucial for parents to monitor their children's media use and behaviors.

The correct and appropriate use of mobile phones by adolescents has become an issue of increasing importance to parents and society. Therefore, digital skills become essential for adolescents or children to use digital media properly in a digital environment. Digital skills are subdivided into operation skills, mobile skills, social skills, creative skills, and safety skills. (Xiaojing Li & Roujia Hu, 2022) However, despite the importance of addressing the digital skills gap, the predominant challenge concerning adolescent mobile phone use today lies in reducing or eliminating excessive mobile phone usage.

2.2 The Parent-Adolescents' Conflicts During Mobile Phone Use

Considering the possible risks associated with mobile phone addiction as suggested above, parents want to prevent their children from being overly exposed to their devices. The generational conflict is caused by the different attitudes held by the two parties towards the use of mobile phones. As a result, there are constant conflicts between young adults and older generations over the use of mobile phones, which is often caused by excessive digital use against the wishes of elders. (Mustsvairo, B., *et. al.*, 2022)

An analysis of middle school students in China suggests that parental phubbing can influence teenagers' mobile phone addiction. (Ding, Q., Kong, L., *et al.*, 2018) And research confirms that parental phubbing increases teen phone addiction. (Xie, X., Chen, W., Zhu, *et al.*, 2019) So when parents are heavy users of mobile phones, it can have a bad influence on their children. The relationship between the intensity of adolescents' mobile phone use and parent-adolescent conflict depends on the parenting style. (Yang X. & Zhang L, 2021) Differences in parenting styles can result in different parent-child relationships, which have a significant impact on adolescent Internet addiction, and conflict between parents and children increases the likelihood of Internet addiction. (Zhou, M, Zhu, J, *et al.*, 2022) Studies have shown that good parent-child attachment has a certain inhibitory effect on the formation of adolescent Internet addiction. (Yusuf, A., Rachmawati, P. D., & Rachmawati, D., 2020)

Overuse of the Internet has led to a decline in academic performance among teenagers who are addicted to the Internet. (Wartberg, L., Kriston, L., & Thomasius, R., 2020) Such bad effects can lead parents to control their

children's mobile phone use, resulting in conflicts. Traditional Chinese parents tend to be overly strict in their approach to discipline by banning their teenagers from using mobile phones. (Cui & Lan, 2020) Forced control is not a good solution. When parents use harsh discipline to control their children's behavior, children may develop hostile psychology or behavior. (Albert, B., 2017)

On the contrary, some parents choose not to control their children's use of mobile phones and the Internet. Parental rejection is negatively correlated with children's online game disorder. (Throuvala MA, *et. al.*, 2019) Therefore, Parents' indifference and rejection increase the risk of adolescent problematic Internet use. (Hsieh YP, *et.al*, 2020)

The researchers found that mobile phone addiction is significantly and negatively correlated with loneliness. (Jafari H, *et. al.*, 2019) Therefore, the effective solution to mobile phone addiction should be positive parental support and companionship. The support of parents in the child's adolescence is particularly important. Parental communication was positively associated with the amount of time adolescents spent using mobile phones for entertainment and communication. (MA Rongzi, *et al.*, 2021) In controlling children's use of cell phones, parental mediation is usually done by setting rules, monitoring phone use, or talking to their children about the specific risks of cell phone use. (Hefner, Knop, Schmitt, & Vorderer, 2019). Active parental mediation can reduce young people's dependence on mobile phones. (Xinchen Fu, *et al.*, 2020) This shows that proper parental control over adolescents' cell phone use is crucial to stopping them from becoming addicted to cell phones. However, online mediation is influenced not only by parents but also by other caregivers. (Dedkova L, Smahel D, 2020)

In a family, grandparents often serve as the primary alternative caregivers. The phenomenon that needs attention today is the popularity of grandparenting. Based on the data from the Survey of Health, Ageing and Retirement in Europe (SHARE), more than half of older people in Europe participate in grandparenting. (Arpino B, *et. al.*, 2018) Similarly, In China, the frequency of grandparents caring for their grandchildren is on the rise and grandparenting has become the main mode of parenting for Chinese families across regions and classes. (Liu, H., Li, Y. *et. al.*, 2021) According to the 2019 China Children's Development Report, children in rural areas and towns spend more time on electronic devices than their urban counterparts, and the use of electronic devices is more problematic in rural areas and towns. Therefore, left-behind children in rural areas will be more serious about the excessive use of mobile phones due to the lack of parental care and direct intervention.

Although intergenerational parenting reduces the burden on the parents, there are still some problems. Intergenerational parenting can also make families dissatisfied, for one thing: attitudes toward rules that limit children's activities. For example, there may be some conflicts between grandparents and parents over the attitude of children to use mobile phones. Grandparents' ideas about child development and discipline are outdated and unfamiliar with the problems faced by contemporary children. (Hayslip, Fruhauf &Dolbin-MacNab, 2019) Nowadays, the majority of the elderly population also has cell phones. This provides an instrumental facility for adolescents to use mobile phones because they can use their grandparents' phones for various reasons. Especially, most of the elderly know the use of electronic devices such as mobile phones has become a necessity for online teaching and learning during the COVID-19. Intergenerational parenting exacerbates the difficulty of mobile phone access for children.

Therefore, grandparent's awareness of control over children's mobile phones is not so remarkable. The absence of parental support and control and the negligence of grandparenting in controlling adolescents' cell phone use can further deepen adolescent's cell phone addiction.

2.3 Digital Detox of Cell Phones as a New Digital Inequality

Based on what has been stated above, digital addiction can have many negative effects on adolescents. As a result, the concept of digital detox continues to be familiar to most people. Digital detox is a sign that the experience of constant connection is negative and worth resisting. (Syvertsen T, Enli G, 2020) Digital detox refers to a period when a person does not use electronic devices encompassing avoidance of certain types of apps, branded media, special features, interactions, or information. (Radtke T, Apel T, *et al.*, 2022) Digital detoxing campaigns convey the idea that reducing digital media usage can lead to a more authentic and enhanced life. (Rosenberg, H., 2022) In simple terms, it refers to efforts to limit the use of smartphones and digital tools. (Syvertsen T, Enli G, 2020) It is about reducing the frequency of using electronic devices such as cell phones, and it can be accomplished in many ways. For example, using the Digital Detox app seems to be valuable in preventing the harmful effects of social networking on young people's well-being by reducing the risk of smartphone use. (Schmuck D, 2020)

Young people easily responding to immediate rewards and feedback, are more likely to develop a habitual or smartphone addiction behavior. (Van Deursen, A. J.A.M, *et al.*, 2015) Young people's self-adjusting mechanism is

weak. So, the main key to intervening with measures such as digital detox for adolescent cell phone addiction lies with parents. At the present moment, parents let their children use smart devices for long periods for reasons such as parenting is easy. (Murtaza SA, Moln \acute{a} E, 2021) Parental practices like this only increase the likelihood that adolescents will become addicted to cell phones.

Various problems have increased due to the excessive use of cell phones by adolescents. The digital divide due to differences in cell phone use is also a problem. The first level of the digital divide focuses on differences in the distribution of Internet access. (Riggins, F.J., Dewan, S., 2005) As Internet connectivity reaches high levels, the focus of digital divide research is away from indicators related to having an Internet connection to the second level of the digital divide, which is focused on Internet skills and usage. (van Deursen, A.J., & van Dijk, J.A., 2019) In terms of cell phone use among adolescents, some adolescents can use their cell phones for learning and benefit from digital technology under the guidance of their parents; others use their cell phones mainly for entertainment and even suffer from cell phone addiction, which makes the gap between the two in terms of cell phone use increasingly wide and might contribute to digital inequalities. The reasons for the differences in Internet use among adolescents include inequalities in socioeconomic and cognitive resources, with adolescents from better socioeconomic backgrounds using the Internet more for information retrieval and less for entertainment. (Valkenburg, P.M., Peter, J., 2007) This cognitive difference can be reflected in the family environment in that higher-educated parents are critical of recent Internet developments. They also have delayed the start of their children's Internet use. (Scheerder, A.J., et. al., 2019) Parents need to be aware that differences in their teens' use of the Internet can make a difference, especially in terms of education. Mobile devices are also proving to be one of the game changers in education because of the flexibility they offer in terms of time and place. (Joshi & Rose, 2018)

Particularly, during the COVID-19 outbreak lockdown, students' academic performance depended heavily on their families' education and digital abilities. (Sosa D áz M.J., 2021) Young people during the pandemic are spending more time online completing school activities than they did before. (Fernandes, B., et al., 2020) The increasing reliance on digital technology to carry out social, recreational, work, and school activities during the COVID-19 pandemic may have affected the way parents mediate the use of children's digital technologies. (Beatrice S., *et al.*, 2022) For example, because of online education, parents have to allow their children to use the Internet more frequently to complete their studies. This demonstrates the need to target younger groups to prevent the use of problematic mobile phones, which is beneficial to them where potentially problematic behavior has not yet manifested. (Kuss D J, Kanjo E, *et al.*, 2018)

In conclusion, parents or guardians should supervise children's Internet use behavior and not give the child to a "mobile nanny" or 'iPad nanny.' (Yang, Ti &Ye, 2022) It is crucial that parents can properly guide and control the purpose and time spent by their children using cell phones. On the other hand, adolescent cell phone use was negatively associated with parental enthusiasm and permissive attitudes toward child-rearing. (Kim R., Lee K.J., Choi Y.J., 2015) Therefore, parents should not be too harsh in their attitude, adolescents or young adults with more social support have less internet addiction. (Lei H, Li S, *et al.*, 2018) Parents should communicate more with their children and provide support and help to prevent excessive use of cell phones. Parents or society must have the relevant digital detox awareness to minimize the digital inequality between the new generation due to cell phone addiction.

3. Materials and Methods

3.1 Data Collection

In an attempt to systematically respond to our research questions, we used semi-structured interviews as the main data collection technique. The interviewees were selected primarily based on their experience with this topic. The respondents were mainly parents, teenagers, or their grandparents.

No.	Age	Location	Identity
1	7-year-old girl	big city	mother, PhD
2	13-year-old boy	big city	mother, PhD
3	8-year-old girl	big city	father, PhD
4	7-year-old boy	medium city	mother, PhD
5	12-year-old boy	medium city	stay-at-home mother
6	7-year-old girl	medium city	mother, PhD
7	14-year-old girl	small city	mother, PhD
8	11-year-old-boy	small city	grandparents
9	11-year-old boy	small city	stay-at-home mother
10	11-year-old-boy	small town	grandmother
11	12-year-old boy	small town	father
12	10-year-old boy	small town	mother

Table 1. Basic information about the respondents

3.2 Measures

The authors conducted interviews with 12 fitness practitioners, mainly through WeChat voice calls due to epidemic and economic reasons, and the interview time was maintained at 30-50 minutes per case. This study concerns the fitness narratives of men, who are less concerned for children than women. As a result, the interviewees were mostly female characters in the family, such as mothers or grandmothers.

4. Results

4.1 Adolescents Mobile Phone Addiction

According to the interviews, most of the children have their mobile phones or other electronic products. Most of the children in the interview mainly used mobile phones to watch videos and play games. However, the situation of mobile phone addiction also varies for different children. For example, the children in respondent No.3's family do not play games and have no fixed app preferences when using mobile phones. They mainly watch videos through video apps such as Huawei Video, and the content they watch is mainly related to cartoons. In addition, another interviewee 11 also mentioned that the children mainly watch short video clips related to games, but are not interested in the drama cartoons on TV. They have a KuaiShou account to post video clips of games and have fans. The child kept in touch with his classmates through private messages and either watched short videos or played games, reflecting a deeper level of addiction.

In general, the phenomenon of children's mobile phone addiction is relatively obvious. Excessive internet gaming can cause users to lose self-control and interfere with their learning. (Kim, D., Nam, J.K., & Keum C, 2022) The child of respondent No. 8 is addicted to games and has become nearsighted. The child does not even want to finish basic homework because of the addiction to mobile phones and often quarrels with his parents because of playing on mobile phones. This is why the issue of correct and appropriate use of mobile phones among adolescents is becoming increasingly important for parents and society.

4.2 Generational Conflict

Another feature that emerged from the interviews was the ongoing conflict over the overuse of digital technology between young people and older generations, who refuse to accept their children's addiction to mobile phones and other electronic devices. When it comes to parents' attitudes towards their children playing with mobile phones for a long time, the vast majority of parents have a negative attitude.

According to respondent No.4, when the child did not go to school or cram school, if he kept looking at the mobile phone screen, the mother would blame herself for not providing enough companionship, and the child will be reprimanded if he watches too much. Similarly, respondent 11 emphasized the overuse of mobile phones against his mother's wishes. This highlights that the intergenerational conflict caused by the problem of mobile phone use among adolescents is very prominent.

During the interview process, we found that another phenomenon that deserves attention today is the popularity of grandparenting. In the process of grandparenting, grandparents tend to neglect to control teenagers' excessive addiction to mobile phones. For instance, interviewee 3 stated: 'The 8-year-old girl would steal her grandparents' mobile phones and watch short videos on the balcony while they were cooking or sleeping.' It can be seen that children who are taken care of by grandparents are more likely to lose control if they are addicted to their mobile phones. Therefore, grandparent's awareness of control over children's mobile phones is not so remarkable. The absence of parental support and control and the negligence of grandparenting in controlling adolescents' cell phone use can further deepen adolescents' cell phone addiction.

4.3 Digital Detox: New Inequalities Are Created by the Practices of Different Types of Parents

According to the interview, most parents are already aware of the concept of digital detox or have started doing it for their children. Parental monitoring is a direct and effective form of social control that can inhibit the development of a variety of problem behaviors in adolescents. (Mark J. Van Ryzin, *et al.*, 2012) The higher the level of active parental monitoring, the better the mobile phone use habits of adolescents, and the lower the probability of mobile phone addiction. (Fu, X., Liu, J., *et al.*, 2020) However, through the interviews, it can be seen that due to their different identities and educational levels, parents have different ways to solve the problem of children's mobile phone addiction, namely digital detoxification. According to our interviews, the types of parents are mainly divided into the following four types:

4.4 Positive Control and Positive Use Types of Parents

These parents are willing to invest time and money in their children's education and growth, and they often choose to reduce or replace their children's mobile phone use time with companionship or other tutoring courses. For example, the mother of respondent No.1, a college teacher, allocates a significant portion of her off-duty time to childcare, participating in numerous classes and extracurricular activities for her children without hesitation about the associated costs. The total cost is unknown, a course can be up to RMB 600 (about 83.6 US dollars) for a single 45-minute class. All tutoring sessions during the pandemic are online, and children use mobile phones almost exclusively for learning, such as digital reading. The mother's time investment and money investment are both huge, which occupy the children using mobile games entertainment time, to achieve the purpose of digital detox.

These parents also have higher education levels, such as the mother of respondent No. 2 who is also a Ph.D. She spends a lot of time with their children and actively uses mobile phones to help their children learn. The positive effect of active parental mediation on reducing problematic media use can be applied to reduce adolescent dependence on mobile phones. (Fu, X., Liu, J., Liu, R. D., Ding, Y., Hong, W., & Jiang, S., 2020) They use learning apps such as "English Fun Dubbing" (英语趣配音) and "Painting La La"(画啦啦) for a long time. Notably, the "English Fun Dubbing" was used for 1352 days with 1493 completed works, which means they use this app very frequently. Their children will clock in and use mobile phones to study. Under such active parental control of mobile phones, children tend to be less addicted to mobile phones.

4.5 Positive Control and Negative Use Types of Parents

For example, interviewee 4 stressed the importance of digital detox for their child. Parents choose to pay high fees for their children to enroll in tutoring classes to occupy their children's mobile phone time. Similarly, respondent

No.6 is the mother of a 7-year-old girl with a doctorate and a career as a college teacher. She will enroll her child in English, sports, dance, art, piano, and other remedial classes. In contrast, other parents have opted out of regulating children's use of mobile phones. At the same time, the explosion and continuation of COVID-19 has led to the massive popularity of online teaching and has contributed to the further spread of the Internet among underage people. The 7-year-old boy of respondent No.4 has an annual tutoring class of RMB 80,000 (about 11,148 US dollars) each year and almost spends all his time taking classes except for school. During the pandemic, he relies on online classes, and the main reason for signing up for the tutoring class is to keep his children away from the Internet. His parents both have doctorate degrees and work in colleges and universities, they attach great importance to education.

Another kind of positive control and negative use is interviewee 7, this mother strictly control her 14-year-old girl from using a cell phone, She recognizes that cell phone is poisonous and there is nothing useful to the pupils, but her daughter is curious about cell phone very much, especially short videos, she even does not know the popular words and sayings during the Internet. When the relatives' children play together, her daughter watches them carefully and desperately. This example highlights the importance of parents actively mediating their child's mobile phone usage to foster a more positive impact on their behavior.

4.6 Negative Control Types of Parents

Children and teenagers are more likely to be addicted to smartphones because they do not have the mature self-control and the ability to use smartphones. This may particularly affect children who are not adequately cared for by their parents/caregivers and use smartphones without guidance. (Duan, L., He, J., et al., 2021) Parents do not accompany their children or do not have the time and energy to control their children's use of mobile phones, such as passive control parents, this kind of family also has more intergenerational parenting.

Parents of the negative type, such as respondent No. 10 mother, have little time to spend with their children at work, so she does not care much about their children's mobile phone use. Similarly, the father of respondent No. 11 rarely shared parenting issues on social media and paid little attention to children's education or mobile phone use.

The negative control type parents belong to a family with a higher proportion of choosing intergenerational care. Respondent No. 10 is an 11-year-old male child in a township. His father is away from home all year round and his mother works outside and comes home occasionally. He plays games and short videos on his grandmother's phone, with minimal regulation from his grandparents. It is difficult for children addicted to mobile phones to complete the process of digital detox.

4.7 Authoritarian Control Addiction Types of Parents

This type of parent often chooses to solve children's mobile phone addiction using parental authority suppression and yelling for ineffective control. Studies have shown that adolescents with lower self-control are more likely to become addicted to the Internet when parental monitoring is high. (Ding, Q., Li, D., Zhou, Y., Dong, H., & Luo, J., 2017) So, under the forced control of parents, children are still addicted to mobile phones, and the conflict between parents and children will become more intense.

Parents choose to strictly regulate children's use of mobile phones, as respondent 9, an 11-year-old boy addicted to online games will easily take his grandparents' mobile phones to play games, parents choose to directly cut off the Internet to solve the problem. When parents and children have conflicts over mobile phones, parents choose TV as a buffer when the argument is heated. which may not be conducive to a child's digital detox. So, this type of parents chooses inappropriate methods to help children reduce the use of mobile phones, and do not invest enough money and time. For example, interviewee 12, the mother of a 10-year-old boy, relies on scolding, shouting, or confiscating the phone as measures to control mobile phone use, emphasizing her belief that excessive phone use interferes with children's learning. Interviewee 5, a stay-at-home mother of a 12-year-old boy said she spent a lot of money on her son's out-of-school study, but she feels desperation on the control of his addiction to the cell phone. Children often argue with their mothers because of mobile phone problems.

In late childhood and early adolescence, a good parent-child relationship helps to prevent excessive use of smartphones. (Kim, R., Lee, K.J., Choi, Y.J., 2015) Different types and practices of parents can have an impact on children. Various problems have increased due to adolescents' excessive use of cell phones, such as the digital divide. Therefore, it is crucial that parents can properly guide and control the purpose and time spent by their children using cell phones.

5. Conclusions

This study was conducted to reveal the prevalence of mobile phone addiction among adolescent groups and sought empirical explanations to illustrate the phenomenon of mobile phone addiction among adolescents in China. With mobile phone addiction becoming a common phenomenon among adolescents, parents' attention is increasingly turning to how to get their children into digital detox. Through the interview survey, we found that parents have different approaches in dealing with children's withdrawal from mobile phone addiction, influenced by factors such as educational background. Different types of parents have different ways and effects to wean children from mobile phone addiction. Family provides the most lasting for personal growth and development and the core of the environment. New inequalities have emerged in this process.

The motivation behind choosing this topic was to raise awareness about mobile phone addiction among children for both parents and society. In conclusion, our study contributes to increasing social attention on controlling the use of mobile phones and other digital devices among children. Future studies may build upon our effort to consider how to use more reasonable measures to digitally detox groups of children.

6. Limitations and Future Studies

There are several limitations in this study. First, the main limitation of the study is the relatively small sample size of 12 interviewees, and the mothers' education degrees are much higher than the average mothers in society. The

subsequent studies could consider introducing quantitative research methods to obtain richer data on the study subject. Second, this study mainly examines the influence of parents on children's mobile phone addiction and digital detox, but the influence of friends and teachers is also closely related to children's use of digital devices. Therefore, future research should incorporate variables on this front. Third, in the interview survey, it is found that mothers take more responsibility for children's education, future research could focus on discovering the role and responsibility of fathers in coordinating the relationship between children and digital technology.

References

Albert, B. (2017). Social learning theory of aggression in the control of aggression. Routledge, pp. 201-252.

- Anderson, M., & Jiang, J. (2018). Teens, social media & technology 2018. Pew Research Center, 31(2018), 1673-1689.
- Anna, S.-S., Mathias, W., Leonard, R., Christian, S., Kai, M., Manfred, B., & Birgit, S. (2021). Mobile (Self-)Socialization: The Role of Mobile Media and Communication in Autonomy and Relationship Development in Adolescence. *Mass Communication and Society*, 24(6), 867-891. https://doi.org/10.1080/15205436.2021.1964538
- Arpino, B., Bordone, V., & Balbo, N. (2018). Grandparenting, education and subjective well-being of older Europeans. *European Journal of Ageing*, 15(3), 251-263. https://doi.org/10.1007/s10433-018-0467-2
- Beatrice, S., Laffan, D. A., Norman, J. O. H., & Milosevic, T. (2022). Parental mediation in pandemic: Predictors and relationship with children's digital skills and time spent online in Ireland. *Computers in Human Behavior*, 127(C), 107081. https://doi.org/10.1016/j.chb.2021.107081
- Canale, N., Moretta, T., Pancani, L., Buodo, G., Vieno, A., Dalmaso, M., & Billieux, J. (2021). A test of the pathway model of problematic smartphone use. *Journal of Behavioral Addictions*, *10*(1), 181-193. https://doi.org/10.1556/2006.2020.00103
- Chen, I. H., Strong, C., Lin, C. Y., Tsai, M. C., Leung, H., Lin, C. Y., ... Griffiths, M. D. (2020) Time invariance of three ultra-brief internet-related instruments: Smartphone Application-Based Addiction Scale(SABAS), Bergen Social Media Addiction Scale (BSMAS), and the nine-item Internet Gaming Disorder Scale-Short Form (IGDS-SF9) (Study Part B). Addictive Behaviors, (101). https://doi.org/10.1016/j.addbeh.2019.04.018
- Cui, G., & Lan, X. (2020). The associations of parental harsh discipline, adolescents' gender, and grit profiles with aggressive behavior among Chinese early adolescents. *Frontiers in Psychology*, *11*, 323. https://doi.org/10.3389/fpsyg.2020.00323
- David, S. B. (2021). Current Research and Viewpoints on Internet Addiction in Adolescents. *Current Pediatrics Reports*, 9(1), 1-10. https://doi.org/10.1007/s40124-020-00236-3
- Dedkova, L., & Smahel, D. (2020). Online parental mediation: Associations of family members' characteristics to individual engagement in active mediation and monitoring. *Journal of Family Issues*, 41(8), 1112-1136. https://doi.org/10.1177/0192513X19888255
- Ding, Q., Kong, L., Zhang, Y., Zhou, Z., & Hu, W. (2018). Parents phubbing and mobile phone addiction in junior high school students: a cross-lagged analysis. *Chinese Journal of Clinical Psychology*, 26(5), 952-955. (in Chinese)
- Ding, Q., Li, D., Zhou, Y., Dong, H., & Luo, J. (2017). Perceived parental monitoring and adolescent internet addiction: A moderated mediation model. *Addictive Behaviors*, 74, 48-54. https://doi.org/10.1016/j.addbeh.2017.05.033
- Duan, L., He, J., Li, M., Dai, J., Zhou, Y., Lai, F., & Zhu, G. (2021). Based on a decision tree model for exploring the risk factors of smartphone addiction among children and adolescents in China during the COVID-19 pandemic. *Frontiers in Psychiatry*, *12*, 652356. https://doi.org/10.3389/fpsyt.2021.652356
- Fernandes, B., Biswas, U. N., Tan-Mansukhani, R., Vallejo, A. P., & Essau, C. A. (2020). The impact of COVID-19 lockdown on internet use and escapism in adolescents. *Revista de Psicolog á Cl nica con Niños y Adolescentes*, 7(3), 59-65. https://doi.org/10.21134/rpcna.2020.mon.2056
- Fu, X., Liu, J., Liu, R.-D., Ding, Y., Wang, J., Zhen, R., & Jin, F. (2020). Parental Monitoring and Adolescent Problematic Mobile Phone Use: The Mediating Role of Escape Motivation and the Moderating Role of Shyness. *International Journal of Environmental Research and Public Health*, 17(5), 1487. https://doi.org/10.3390/ijerph17051487

- Fu, X.-C., Liu, J.-X., Liu, R.-D., Ding, Y., Hong, W., & Jiang, S.-Y. (2020). The impact of parental active mediation on adolescent mobile phone dependency: A moderated mediation model. *Computers in Human Behavior*, 107, 106280. https://doi.org/10.1016/j.chb.2020.106280
- Hayslip, B., Fruhauf, C. A., Dolbin-MacNab M.L. (2019). Grandparents raising grandchildren: What have we learned over the past decade?. *Gerontologist*, 59(3), e152-e163. https://doi.org/10.1093/geront/gnx106
- Hefner, K., & Schmitt, V. (2019). Rules? Role Model? Relationship? The Impact of Parents on Their Children's Problematic Mobile Phone Involvement. *Media Psychology*, 22(1), 82-108. https://doi.org/10.1080/15213269.2018.1433544
- Hsieh, Y. P., Wu, C. F., Chou, W. J., & Yen, C. F. (2020). Multidimensional correlates of parental self-efficacy in managing adolescent internet use among parents of adolescents with attention-deficit/hyperactivity disorder. *International Journal of Environmental Research and Public Health*, 17(16), 5768. https://doi.org/10.3390/ijerph17165768
- Jafari, H., Aghaei, A., & Khatony, A. (2019). The relationship between addiction to mobile phones and sense of loneliness among students of medical sciences in Kermanshah, Iran. BMC Research Notes, 12(1), 676. http://doi.org/10.1186/s13104-019-4728-8
- Joshi, S. C., & Rose, G. (2018). Information technology, Internet use, and adolescent cognitive development.3rd International Conference on Computational Systems and Information Technology for Sustainable Solutions (CSITSS). IEEE, pp. 26-32. http://doi.org/10.1109/CSITSS.2018.8768780
- Kim, D., Nam, J. K., & Keum, C. (2022). Adolescent Internet gaming addiction and personality characteristics by game genre. *PloS One*, *17*(2), e0263645. https://doi.org/10.1371/journal.pone.0263645
- Kim, K., Milne, G. R., & Bahl, S. (2018). Smart phone addiction and mindfulness: an intergenerational comparison. *International Journal of Pharmaceutical and Healthcare Marketing*, 12(1), 25-43. https://doi.org/10.1108/IJPHM-08-2016-0044
- Kim, R., Lee, K., & Choi, Y. J. (2015). Mobile phone overuse among elementary school students in Korea: Factors associated with mobile phone use as a behavior addiction. *Journal of Addictions Nursing*, 26(2), 81-85. https://doi.org/10.1097/JAN.00000000000074
- Kuss, D. J., Kanjo, E., Crook-Rumsey, M., Kibowski, F., Wang, G. Y., & Sumich, A. (2018). Problematic mobile phone use and addiction across generations: The roles of psychopathological symptoms and smartphone use. *Journal of Technology in Behavioral Science*, *3*(3), 141-149. https://doi.org/10.1007/s41347-017-0041-3
- Lee, S., Lee, K., Yi, S. H., Park, H. J., Hong, Y. J., & Cho, H. (2016). Effects of parental psychological control on child's school life: Mobile phone dependency as mediator. *Journal of Child and Family Studies*, 25(2), 407-418. https://doi.org/10.1007/s10826-015-0251-2
- Lei, H., Li, S., Chiu, M. M., &Lu, M. (2018). Social support and Internet addiction among mainland Chinese teenagers and young adults: A meta-analysis. *Computers in Human Behavior*, 85, 200-209. http://doi.org/10.1016/j.chb.2018.03.041
- Li, X.-J., & Hu, R.-J. (2022). Developing and validating the digital skills scale for school children(DSS-SC). *Information, Communication & Society*, 25(10), 1365-1382. https://doi.org/10.1080/1369118X.2020.1864002
- Liu, H., Li, Y., Tisdell, C. A., &Wang, F. (2021). How does childcare by grandparents affect the health of children in China?. *Economics and Sociology*, *14*(4), 11-30. https://doi.org/10.14254/2071-789X.2021/14-4/1
- Lozano, B. R., Robres, A. Q., & Sánchez, A. S. (2022). Internet addiction in young adults: A meta-analysis and systematic review. *Computers in Human Behavior*, 130(C). https://doi.org/10.1016/j.chb.2022.107201
- Ma, R.-Z., Meng, H.-R., Yan, L.-L., Chen, Y., Cao, H.-J., Zhou, N., ... Zhang, J.-T. (2021). Cellphone-Specific Parenting Practices and Chinese Adolescents' Cellphone Use and Addiction: A National Survey. *Studies of Psychology and Behavior*, 19(2), 265-272.(in Chinese)
- Mark, J. Van R., Gregory, M. F., & Thomas, J. D. (2012). Family and peer predictors of substance use from early adolescence to early adulthood: an 11-year prospective analysis. *Addictive Behaviors*, *37*(12), 1314-1324. https://doi.org/10.1016/j.addbeh.2012.06.020
- Murtaza, S. A., & Molnár, E. (2021). Is Digital Heroin Creating Disturbing Behaviours Among Children? Moderating Role of Smartphone Addicted Parents. Acta Carolus Robertus, 11(1), 83-93. https://doi.org

/10.33032/acr.2581

Mutsvairo, B., Ragnedda, M., & Mabvundwi, K. (2022). 'Our old pastor thinks the mobile phone is a source of evil.' Capturing contested and conflicting insights on digital wellbeing and digital detoxing in an age of rapid mobile connectivity. *Media International Australia*, 0(0), 1-15. https://doi.org/10.1177/1329878X221090992

National study on Internet use among minors in 2020. (2021). National Library Journal, 30(4), 13. (in Chinese)

- Poulain, T., Ludwig, J., Hiemisch, A., Hilbert, A., & Kiess, W. (2019). Media use of mothers, media use of children, and parent-child interaction are related to behavioral difficulties and strengths of children. *International journal of environmental research and public health*, *16*(23), 4651. https://doi.org/10.3390/ijerph16234651
- Radtke, T., Apel, T., Schenkel, K. J., & von Lindern, E. (2022). Digital detox: An effective solution in the smartphone era? A systematic literature review. *Mobile Media & Communication*, 10(2), 190-215. https://doi.org/10.1177/20501579211028647
- Riggins, F. J., & Dewan, S. (2005). The digital divide: Current and future research directions. *Journal of the* Association for Information Systems, 6(12), 298-337. http://doi.org/10.17705/1jais.00074
- Rosenberg, H., & Vogelman-Natan, K. (2022). The (other) two percent also matter The construction of mobile phone refusers. *Mobile Media & Communication*, *10*(2), 216-234. https://doi.org/10.1177/20501579211033885
- Ross, M. Q., & Bayer, J. B. (2021). Explicating self-phones:Dimensions and correlates of smartphone self-extension. *Mobile Media & Communication*, 9(3), 488-512. https://doi.org/10.1177/2050157920980508
- Scheerder, A. J., van Deursen, A. J., & van Dijk, J. A. (2019). Internet use in the home: Digital inequality from a domestication perspective. New Media & Society, 21(10), 2099-2118. https://doi.org/10.1177/1461444819844299
- Schmuck, D. (2020). Does digital detox work? Exploring the role of digital detox applications for problematic smartphone use and well-being of young adults using multigroup analysis. *Cyberpsychology, Behavior, and Social Networking, 23*(8), 526-532. https://doi.org/10.1089/cyber.2019.0578.
- Sosa D áz, M. J. (2021). Emergency remote education, family support and the digital divide in the context of the COVID-19 lockdown. *International Journal of Environmental Research and Public Health*, 18(15), 7956. https://doi.org/10.3390/ijerph18157956
- Syvertsen, T., & Enli, G. (2020). Digital detox: Media resistance and the promise of authenticity. *Convergence*, 26(5-6), 1269-1283. https://doi.org/10.1177/1354856519847325
- Throuvala, M. A., Janikian, M., Griffiths, M. D., Rennoldson, M., & Kuss, D. J. (2019). The role of family and personality traits in Internet gaming disorder: A mediation model combining cognitive and attachment perspectives. *Journal of behavioral addictions*, 8(1), 48-62. https://doi.org/10.1556/2006.8.2019.05
- Valkenburg, P. M., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology*, 43(2), 267-277. https://doi.org/10.1037/0012-1649.43.2.267
- Van Deursen, A. J. A. M., Bolle, C. L., Hegner, S. M., & Kommers, P. A. M. (2015). Modeling habitual and addictive smartphone behavior: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in human behavior*, 45, 411-420. https://doi.org/10.1016/j.chb.2014.12.039
- van Deursen, A. J., & van Dijk, J. A. (2019). The first-level digital divide shifts from inequalities in physical access to inequalities in material access. New Media & Society, 21(2), 354-375. https://doi.org/10.1177/1461444818797082
- Wartberg, L., Kriston, L., & Thomasius, R. (2020).Internet gaming disorder and problematic social media use in a representative sample of German adolescents: Prevalence estimates, comorbid depressive symptoms and related psychosocial aspects. *Computers in Human Behavior*, 103(C), 31-36. https://doi.org/10.1016/j.chb.2019.09.014
- Xie, X., Chen, W., Zhu, X., & He, D. (2019). Parents' phubbing increases Adolescents' Mobile phone addiction: Roles of parent-child attachment, deviant peers, and gender. *Children and Youth Services Review*, 105, 104426. https://doi.org/10.1016/j.childyouth.2019.104426
- Yang, J.-F., Ti, Y.-H., & Ye, Y.-H. (2022). Offline and Online Social Support and Short-Form Video Addiction Among Chinese Adolescents: The Mediating Role of Emotion Suppression and Relatedness Needs. *Cyberpsychology, Behavior and Social Networking*, 25(5), 316-322. https://doi.org/10.1089/cyber.2021.0323
- Yang, X., & Zhang, L. (2021). Reducing parent-adolescent conflicts about mobile phone use: The role of parenting

styles. Mobile Media & Communication, 9(3), 563-583. https://doi.org/10.1177/2050157920986190

- Yusuf, A., Rachmawati, P. D., & Rachmawati, D. (2020). The correlation of Internet addiction towards adolescents' social interaction. *International Journal of Adolescent Medicine and Health*, 34(5), 351-355. https://doi.org/10.1515/ijamh-2020-0110.
- Zhou, M., Zhu, J., Zhou, Z., Zhou, H., & Ji, G. (2022). Cognitive bias toward the Internet: The causes of adolescents' Internet addiction under parents' self-affirmation consciousness. *Frontiers in Psychology*, 13, 891473. https://doi.org/10.3389/fpsyg.2022.891473

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