

A longitudinal research of the relationship between parental phubbing and problematic behaviors among children

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Abstract. This longitudinal study investigated 522 subjects twice (12 months in between) from three primary schools in Guangdong province to explore the developments of parental phubbing and problematic behaviors among children, as long as the causal effect between parental phubbing and children's problematic behaviors. The results indicated as follows: (1) both parental phubbing and problematic behaviors of the subjects existed stability; (2) parental phubbing was significantly correlated to children's problematic behaviors, which meant that the even worse parental phubbing, the more problematic behaviors; (3) the cross lagged regression analysis indicated that children's problematic behaviors is caused by parental phubbing.

1 Introduction

Children's problematic behavior is one of the hot research topics now. Family environment is an important factor affecting children's problematic behavior. With the popularity of smartphones, excessive use of mobile phones by parents while accompanying their children has become a common family environment. However, in the past, there have been many studies on children's problematic behavior, and few studies have focused on the impact of parental phubbing on children's problematic behavior.

Phubbing is a kind of social exclusion and interpersonal neglect[1]. Parental phubbing was defined as a new phenomenon that parents snub or neglect their children in social settings by concentrating on phone use[2-3]. Parental phubbing, as a risk environmental factor, may have negative effects on children's emotions, cognition, learning, problematic behavior, and many other aspects, damaging their mental health and developmental adaptation.

Although some studies have explored the role of parental phubbing on children's problematic behaviors, no longitudinal research has focused on the developments of parental phubbing and problematic behaviors among children, as long as the causal effect between parental phubbing and children's problematic behaviors. Therefore, this study conducted an exploration of the mechanism of the effect of parental phubbing on children's problematic behaviors.

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2 Methods

2.1 Participants

A total of 600 children were selected as subjects, from three primary schools in Guangdong province. After excluding invalid questionnaires, a total of 552 valid questionnaires were obtained, with an effective rate of 92%. The survey is conducted on a class by class basis, using the time spent by students in self-study classes (about 10 minutes) for group testing, with psychology students as the main participants. The age of the participants is between 10 and 13 years old ($M=11.63$, $SD=1.36$), and other basic information is detailed in Table 1.

Table 1. Information of subject

		number□	percent(%)□
grade	4	325	57.73
	5	199	35.35
	6	39	6.93
sex	male	271	48.13
	female	292	51.87

2.2 Measures

2.2.1 Children's problematic behavior

The subscale of Strengths and Difficulties scale (SDQ) was used to evaluate children's problematic behavior. There are 5 questions. This questionnaire adopts a three-level rating (0-2 points). The margin scores is 4 points, the scores above 4 points is abnormal and scores below 4 points is normal. The Chonbach's alpha coefficients of twice were 0.863, 0.874, respectively.

2.2.2 Parental phubbing scale

Chinese version of the parental phubbing scale was used to measure the level of parental phubbing perceived by children. There are 9 items, such as "When the phone rings/vibrates, the father/mother will take it out to check, even if we are chatting at the time", "When the father/mother and I are chatting, their eyes are looking at the phone", etc. The scale adopts a five point scoring method, the question 7 being a reverse scoring. From 1 (never like this) to 5 (always like this), the higher the score, the higher the frequency of parents only playing with their phones and ignoring their children. This result indicates that the parental phubbing scale has good reliability and validity, and can be used as a measurement tool for parental phubbing in China[4]. The Chonbach's alpha coefficients of twice were 0.840 and 0.852, respectively.

3 Results

3.1 Data organization and analysis

Data entry and organization were conducted using SPSS 26, and SPSS 26 and AMOS were used for data statistical analysis:

- (1) SPSS repeated measurement analysis of variance was used to examine the current situation and development of parental phubbing and children's problematic behaviors;
- (2) Using SPSS correlation analysis to examine the relationship between parental phubbing and children's problematic behaviors;
- (3) Using the causal model of AMOS to examine the causal relationship between parental phubbing and children's problematic behaviors;
- (4) Using SPSS regression analysis to examine the impact of parental phubbing on children's problematic behaviors.

3.2 Preliminary analyses

There may be some common method bias in this study. Harman's single factor test was used for statistical testing, and the results showed that there were 3 factors with eigenvalues greater than 1. The variance explained by the first principal factor was 23.82%, which was less than the critical value of 40%, indicating that there was no serious common method bias in this study.

3.3 The current situation and development of parental phubbing and children's problematic behaviors

Table 2 shows the mean, standard deviation, and correlation matrix between each variables. The correlation analysis shows that there is a significant correlation between parental phubbing and children's problematic behaviors ($p < 0.01$). There were over 24.27% students with scores above 4 points.

Table 2. Descriptive statistical results and correlation analysis of each variable.

	M	SD	parental phubbing (T1)	problematic behaviors(T1)	parental phubbing (T2)	problematic behaviors(T2)
parental phubbing (T1)	22.73	6.06	1			
problematic behaviors(T1)	4.53	1.42	0.25**	1		
parental phubbing (T2)	24.07	6.23	0.65***	0.02	1	
problematic behaviors(T2)	4.89	1.34	0.09**	0.69***	0.19**	1

* $p < 0.05$ ** $p < 0.01$

3.4 The causal relationship between parental phubbing and problematic behavior

The repeated measures analysis of paired t for pre-test and post test data was discussed, and the results showed significant differences in parental phubbing and children's problematic behaviors: T1, $t=4.71$, $p < 0.001$; T2, $t=5.93$, $p < 0.001$. The dependent variable, with test time (pre-test and post test) as the intra subject factor and grade (4, 5, 6) and gender (male, female) as the inter subject factors, repeated measures ANOVA was conducted, and it was found that there were no differences in test time, gender, and grade. The interaction between time and grade is significant: $F = 9.48$, $p < 0.01$, and the time main effect was significant: $F = 13.75$, $p < 0.001$.

On the basis of relevant analysis, further use the method of cross lagged regression analysis to explore the causal relationship between parental phubbing and problem behavior. The following results were found: (1) Both pre and post tests showed a significant correlation between parental phubbing and problematic behavior; (2) There is a significant correlation between parental phubbing and two tests of problematic behavior, and both reach a high level; (3) After controlling correlations between the two variables of parental phubbing problem behavior for the two tests, the predictive coefficient of the pre test parental phubbing on the post test problem behavior remained significant, but the predictive coefficient of the pre test problem behavior on the post test parental phubbing became insignificant. From this, it can be seen that according to the perspective of cross lagged design, the above data indicates that in the relationship between parental phubbing and problematic behavior, parental parenting plays a causal role to a certain extent, and problematic behavior is the result. That is to say, the degree of parental parenting will affect the amount of problematic behavior in children, and the higher the parental parenting, the more problematic behavior children exhibit.

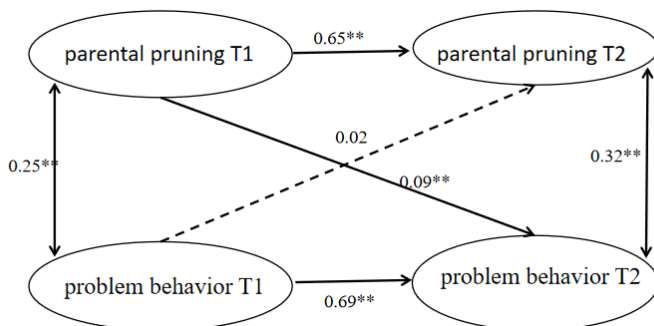


Fig. 1. Patterns of influence of parental phubbing on problematic behaviour.

4 Discussion

There is a significant correlation between parental phubbing and children's problematic behaviors in this study, that is, the higher the parental phubbing, the less problematic children will exhibit, which is consistent with most domestic and foreign research results. From this, it can be seen that there is a close relationship between problematic behaviors and parental phubbing. This result has certain enlightening significance for family intervention and treatment.

Another longitudinal study of 183 couples over a period of two years found a significant correlation between parental phubbing and children's behavioral difficulties, but the influence of mothers was greater. Mothers' self-awareness of phubbing in parent-child interaction positively influenced children's externalized behaviors reported by parents, such as restlessness, hyperactivity, and crying behavior. Father's lowered phubbing led to a lower perceived quality of co parenting by mothers, which in turn led to more conflicts in mobile phone use[5].

These findings contribute to our understanding of how parental phubbing affect children's problematic behaviors as viewed. Therefore, both fathers and mothers should reduce their phubbing behavior, especially in front of children, and they should change their attitude toward children when they use a mobile phone. The combined influence of family factors, as well as their roles in preventing and intervening in children problematic behaviors, should receive the most attention.

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