

**MOTHERS' PROBLEMATIC SMARTPHONE USE,
MOTHER-CHILD RELATIONSHIP AND MATERNAL
PERCEPTION OF CHILD BEHAVIORAL PROBLEMS**



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RELATIONSHIP AND MATERNAL PERCEPTION OF CHILD
BEHAVIORAL PROBLEMS**



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It is certified that Ms. Anosha Amir of BSc (Hons) (session 2019 – 2023), Department of Applied Psychology has carried out research work entitled **“Mothers’ Problematic Smartphone Use, Mother-Child Relationship and Maternal Perception of Child Behavioral Problems”** under my supervision.

It is assured that research work is original and has not yet been published anywhere else.



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Abstract

This research study aimed to examine the mediating role of mother-child relationship between mothers' problematic smartphone use and maternal perception of child behavioral problems. The study utilized a correlational research design and purposive and snowball sampling strategy with a sample size of 100 mothers ($M_{age} = 33.53$; $SD = 4.88$) from Lahore. The research employed the Smartphone Addiction Scale- Short Version (Kwon et al., 2013), Child Parent Relationship Scale- Short Form (Pianta, 1992), and Strengths and Difficulties Questionnaire (Goodman, 1997) to collect data. The findings revealed that mothers' problematic smartphone use had a positive relationship with the conflict dimension of the mother-child relationship but a negative relationship with the closeness dimension. Moreover, the conflict dimension of the mother-child relationship had a positive relationship with maternal perception of child behavioral problems, while the closeness dimension had a negative relationship with the latter. The results also indicated that mothers' problematic smartphone use had a positive relationship with their perception of behavioral problems in their children. Moreover, conflict dimension of the mother-child relationship emerged as a significant mediator between mothers' problematic smartphone use and maternal perceptions of internalizing and externalizing child behavioral problems. The implications of the study findings suggest the need for mental health practitioners to consider mothers' problematic smartphone use and conflict in the mother-child relationship when assessing children with internalizing and externalizing behavioral problems. The study highlights the importance of being present and responsive to children's needs for their behavioral adjustment.

Keywords: problematic smartphone use, internalizing, externalizing, mothers, mediation

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TABLE OF CONTENTS

Chapter	Title	Page No.
	Research completion certificate	II
	Anti-Plagiarism Declaration	III
	Acknowledgements	IV
	Abstract	V
	Table of contents	VI-VII
	List of figures	VIII
	List of tables	IX
	List of abbreviations	X
	List of symbols	XI
	List of appendices	XII
I	Introduction	1-8
	Theoretical Framework	9
	Literature Review	10-24
	Rationale	25-28
	Objectives	28
	Hypotheses	28
II	Method	30-38
	Research Design	30
	Participants (Sample and Sampling strategy)	30

	Inclusion Criteria	30
	Exclusion Criteria	30-31
	Conceptual and Operational Definition of Variables	33-34
	Measures	35-36
	Procedure	37
	Ethical Consideration	37-38
	Statistical Analyses	38
III	Results	39-49
IV	Discussion	50-57
	References	58-67

List of Figures

Figure No.	Title	Page No.
1.1	Proposed Model of Mothers' Problematic Smartphone Use, Mother-Child Relationship and Maternal Perception of Child Behavioral Problems	29
3.1	Emerged Mediation Model showing Mother-Child Relationship as a Mediator between Mothers' Problematic Smartphone Use and Maternal Perception of Child Internalizing Behavioral Problems	48
3.2	Emerged Mediation Model showing Mother-Child Relationship as a Mediator between Mothers' Problematic Smartphone Use and Maternal Perception of Child Externalizing Behavioral Problems	49

List of Tables

Table No.	Title	Page No.
Table 2.1	Mean, Standard Deviation, Frequencies and Percentages of Demographic Characteristics of Participants	32-33
Table 3.1	Psychometric Properties of Major Study Variables in the Sample	40
Table 3.2	Descriptive Statistics and Pearson Product Moment Correlation among Mothers' Problematic Smartphone Use, Mother-Child Relationship and Maternal Perception of Child Behavior Problems	42
Table 3.3	Parallel Mediation Analysis showing Direct and Indirect Effect of Mother-Child Relationship in Predicting Maternal Perception of Child Behavioral Problems	44

List of Abbreviations

Abbreviations	Full Form
SAS	Smartphone Addiction Scale
CAFE	Comprehensive Assessment of Family Exposure
SDQ	Strengths and Difficulties Questionnaire
PMPU	Problematic Mobile Phone Use
ANOVA	Analysis of Variance
NICHD	National Institute of Child Health and Human Development
SECCYD	Study of Early Child Care and Youth Development
SAS-SV	Smartphone Addiction Scale-Short Version
CPRS-SF	Child Parent Relationship Scale-Short Form\
MPSU	Mothers' Problematic Smartphone Use
NOHSOS	Number of Hours Spent on Smartphone
ADHD	Attention Deficit Hyperactivity Disorder

List of Symbols

Symbols	Definition
<i>a</i>	Cronbach's index of internal consistency
<i>f</i>	Frequency
<i>k</i>	Total no of items
N	Total sample
<i>p</i>	Significant value
<i>SD</i>	Standard deviation
%	Percentage
<i>β</i>	Beta

List of Appendices

Appendix No.	Title	Page No.
Appendix A	Questionnaire Permission Forms	68-70
Appendix B	Informed Consent Form	71-72
Appendix C	Sample Copy of Questionnaire	73-79
	Demographic Information Sheet	73-76
	Smartphone Addiction Scale-Short Version	77
	Child Parent Relationship Scale-Short Form	78
	Strengths and Difficulties Questionnaire	79
Appendix D	SPSS Outputs	80-84
Appendix E	Plagiarism Report	85

Chapter I

Introduction

During their initial stages of development, children indulge in various interactions with their environments. These interactions have a profound effect on children's developing brains. Any disruptions to the developmental process can harm children's capacities for functioning in a typical social environment. For these reasons, in their early years, the principal interactions of children are with their parents. Synchrony and mutuality are characteristics of high-quality interactions between parents and children (Anderson & Keem, 2016). Their relationships gently develop as parents and children adjust their behaviors (Goldberg & Carlson, 2014). However, there are times when distractions disrupt these relationships, which might lead to children developing behavioral problems.

Since the early 1900s researchers have been trying to describe and categorize children's behavior problems using clinical reports and empirical evidence. Perhaps, empirical evidence generated the most substantial historical support for categorizing behavioral disorders among children. Ackerson (1942) performed a study on the clinical records of children to extract scores along two scales: 'personality' and 'conduct.' The 'personality' score was correlated with changeable moods, unhappy appearance, mental conflict, depression, and odd behavior, whereas the 'conduct' score was correlated with disobedience, truancy, swearing, destructiveness, curfew violations, and stealing. It is worth noting that the 'personality' score highlights emotional problems, whereas the 'conduct' score highlights delinquent behavior among children. By the 1980s, due to the emergence of studies that shared Ackerson's (1942) notion of these two distinct categories of emotional/behavioral problems among children, it was generally agreed upon that children's behavioral problems could be classified into two distinct categories: externalizing

problems which constitute aggressive symptomatology and hyperactivity; internalizing problems which constitute depression, anxiety, and somatic concerns (Achenbach & Edelbrock, 1978, 1981; Zigler & Glick, 1986). Future studies reinforced this classification system such as Cicchetti and Toth's 1991 study categorized the behavior problems among children as internalizing problems constituting emotional problems and externalizing problems constituting peer problems, hyperactivity and conduct problems. Other significant contributions to the subject, such as the development of Rutter's scale, must also be noted. Rutter (1967) developed a behavioral questionnaire for teachers, commonly known as the 'Rutter's scale which had 26 descriptions of behavior, categorizing emotional/behavioral problems among children (9-13 years) into anti-social types, neurotic types, and mixed types. It was instrumental for large screening populations, extensive group comparisons, investigations into disturbed behavior rather than narrowly defined disorders, and assessment of change over the long term rather than the short term (Elander & Rutter, 1996). However, the scale had various children's behavioral problems rather than a concise distinct classification system that categorized all of these behaviors into a few categories. Therefore, this study deems the classification system of externalizing and internalizing problems among children as more suitable relative to Rutter's scale. In the late 1990s, a significant development occurred when child psychiatrist Goodman (1997) devised a method to quantify the externalizing and internalizing problems among children through a 'Strength and Difficulties Questionnaire' – a behavioral assessment scale for individuals aged 4 to 17. This questionnaire had 5 subscales and each of those subscales had 5 items. These subscales were associated with symptoms of emotions, difficulties in conduct, peer-interaction problems, inattention/hyperactivity and prosocial behavior (Goodman, 1997). Other noteworthy developments were made in the 20th century including the determination of the

variables which predict children's behavioral problems. Aytac & Pike (2018) determined that children's behavioral problems were affected by within-family factors and between-family factors. Within-family factors constituted gender, age, and parental-differential treatment. Between-family factors constituted maternal discomfort, family-wide parenting, household chaos, and culture. Additionally, Dijk (2017) conducted a study aimed at examining the association among mother-child relationships and externalizing problems in children with the difference that inhibitory control – overriding dominant response to initiate a subdominant response - would act as a mediator. Malakar (2021) conducted a study to investigate how socio-economic factors and parent-child relationships affect children's behavioral problems. The study recruited 100 Bengali parents (30-45 years of age) to investigate their perception of children's behavioral problems caused by variation in socio-economic status and parent-child relationships. It used a child behavioral checklist, a conventionally used caregiver report with emphasis that the caregiver must know the child well (usually a parent), to report on the child's behavioral problems. Similarly, Garriga et al. (2018) conducted a study to investigate how parent-child relationship influences externalizing problems in children and whether the socio-economic background and mother-child relationship moderate this association. The outcome variable – externalizing problems among children – was measured by interviewing the primary caregiver of children (majorly mother of the child) as to investigate the maternal perception of children's (3/5 years of age) externalizing problems. The focal variable – mother-child relationship – was measured by asking questions from mothers about their perception of mother-child relationship based on the Pianta scale of parent-child relationship. These studies contributed immensely to the relative significance of factors that affect children's behavioral problems. Among all of these factors and others, there is one factor that stands out: technology. The increasing use of

technology might distract parents and children as they focus more on their gadgets and less on the relationships between them. Perhaps, that is why it is crucial to consider the role of technology in determining children's behavioral problems.

In the contemporary world, most of the world's population has access to mobile phones. The advent of smartphone technology has resulted in many people allocating a considerable amount of time to their phones, causing disruptions to their everyday lives. When these disruptions to everyday lives occur, smartphone use becomes problematic smartphone use. While some researchers have suggested labeling problematic smartphone use as addiction, many other researchers have suggested that problematic smartphone use does not fall under the purview of addiction. For convenience, it is imperative to have a comprehensive understanding of what constitutes addiction so as to think about whether problematic smartphone use can be associated with addiction terminology. 'Addiction,' is a phenomenon that constitutes dependence, tolerance, and withdrawal symptoms, accompanied by social problems (as cited in Kwon et al., 2013). Since 1982, before the widespread use of mobile phones, many researchers have suggested that the pathological use of technology, or techno-dependence, may constitute addiction (Brod, 1982). However, some experts have failed to find adequate evidence, from the perspective of addiction, to legitimize smartphone addiction (Panova, 2018). Kwon et al. (2013) has legitimized smartphone addiction when conducting a study to construct a self-diagnostic scale, called the SAS (smartphone addiction scale), that could differentiate smartphone addicts. The study's SAS helps us in deriving the symptoms associated with problematic smartphone use. It reveals that smartphones can cause addiction-like symptoms, such as withdrawal, yearning, disruption of daily life, tolerance, and a preference for relationships centered around the digital world. These effects were confirmed through diagnosis and were found to be similar to the

symptoms of internet addiction (as cited in Kwon et al., 2013). Whether smartphone addiction is real or not, the attempts to classify problematic smartphone use as addiction demonstrate the importance of the consequences associated with problematic smartphone use. Numerous studies have used problematic smartphone use to predict a range of variables. Velthoven et al. (2018) conducted a study to describe problematic smartphone use as a 'public health problem' predicting a range of phenomena: social effects (lost sense of community and negative impact on relationships), physical effects (accidents, frequent strain injuries, and posture), and psychological effects (poor decision-making, poor concentration, procrastination, anxiety, and sleep disturbance). Similarly, Sohn et al. (2019) extended that these adverse physical and mental effects can translate to adverse socio-economic effects, such as the compromised willingness to attain education. Some researchers focused exclusively on the relationships' aspect. An example of such researches includes a longitudinal study carried out by Su et al. (2022) with adolescents, which looked at the bi-directional relationship between problematic smartphone use and the quality and quantity of online engagement among peers and the bi-directional relationship between problematic smartphone use and the quality of offline engagement among peers. The quantity of online engagement among peers was defined as passive and active texting on social media on smartphones whereas the quantity of offline engagement among peers was defined as the frequency of face-to-face meetings with peers. The quality of offline engagement among peers was defined as perceived competence in friendships. The study's results indicated that problematic smartphone use positively predicted quantity of online and offline peer engagement while negatively predicting the quality of offline peer engagement (Su et al., 2022). The study's results demonstrate how problematic smartphone use affects children-to-children relationships. The collective findings of these studies suggest that problematic use of smartphones can result in

adverse consequences for individuals, irrespective of their demographic characteristics. Since this study only focuses on children, it is hypothesized that parents' problematic smartphone use can predict children's behavioral problems. However, to be able to understand how that happens, it is of particular importance to dive deeper into the influence of problematic smartphone use on parents.

Hong et al. (2019) studied the effects of problematic smartphone, the most significant of them being when parents ignore children in their vicinity or interrupt ongoing conversations with children in the vicinity to focus on one's own mobile phone. Kim et al. (2022) studies the consequences of this effect by describing problematic behaviors among children caused by problematic smartphone use by parents: impatience, aggressiveness, heightened stress sensitivity, immature emotional and cognitive intelligence, impaired self-expression, and impaired self-regulation skills. Children may also feel emotionally separated from their parents, and they can try to imitate their parents and become addicted to smartphones. Both studies point towards the idea that parents' problematic smartphone use leads to various children's behavioral problems. While this notion appears as convenient, it is much more complex. In order to understand this complexity, we must pay adequate attention to the presence of another factor that mediates the relationship between parents' problematic smartphone use and children's behavioral problems.

Parenting is an act that can differ in its dimensions (Barber et al., 2005). Negative parenting dimensions are indicated by harsh physical discipline, intrusiveness, and parental rejection (Gershoff, 2002; Barber et al., 2005; Rohner, 2004). Positive parenting dimensions are indicated by involvement, teaching, and warmth. Parents utilize both of these styles of parenting dimensions to varying degrees which affects how parents perceive their children and how children perceive their parents. Simply put, the difference in parenting dimensions can influence the quality of the

relationships between parents and children. Negative parenting dimensions driving a deterioration in the of parent-child relationships' quality can have an adverse effect on children during their early stages of development. As a result, these children can develop many behavioral problems. Viera et al. (as cited in Niu et al., 2020) emphasize how the parent-child relationship is negatively related with several children's externalizing (aggression, indiscipline and addictive behaviors) and internalizing (loneliness and depression) problems. Mason and Windel's 2002 study (as cited in Xie et al., 2019) focuses on the internal working model that is formed from early social relationships. Healthy internal working models, or children with good parent-child relationships, protect children and satisfy their emotional needs, resulting in healthy development. Unhealthy internal working models, or children with poor parent-child relationships, often fail to meet their psychological needs, such as belonging or relatedness. These studies point to the notion that the parent-child relationship is negatively related to behavioral problems in children.

Parents' problematic smartphone use also falls under the purview of negative parenting dimensions. As parents indulge in problematic smartphone use – a negative parenting dimension, the quality of parent-child relationships deteriorates, thus increasing the chance of children developing various externalizing (aggression) and internalizing (anxiety) behavioral problems (Goraya & Shamama-tus-Sabah, 2013). Based on this evidence, we observe that parents' problematic smartphone use affects parent-child relationships, and parent-child relationships affect children's behavioral problems, subsequently making the mediating role of parent-child relationships vibrant. Although we have focused exclusively on 'parent-child relationships' until now, it is arguable that children might develop differing behavioral problems dependent on deterioration in the quality of the father-child relationships or mother-child relationships. If the child is relatively closer to his/her mother, then the deterioration in the mother-child relationship

quality can cause him/her to develop relatively severe behavioral problems. Similarly, if a child is close to his/her father, then the deterioration in the father-child relationship quality can cause him/her to develop relatively severe behavioral problems. Therefore, it is worth considering to whom the child is closer among parents.

It is of utmost importance to consider whether any research on this subject should broadly focus on ‘parent-child relationships’ or narrowly focus on either ‘father-child relationships’ or ‘mother-child relationships’ for the purpose of mediation. For the purposes of this study, ‘mother-child relationships’ will be considered to play the mediating role. This is because of several reasons, including but not limited to the primary caregiver’s role defined in literature and the cultural and religious context. In the west, researchers have often asserted that mothers fulfill the role of primary caregivers (Yeung et al., 2001; Bianchi et al., 2006). Conversely, in the eastern societies, a larger emphasis is placed on mother’s role as caregivers. This is because of cultural and religious norms. For instance, Abbas et al. (2021) claims that, due to cultural and religious reasons, one of the three major spheres of a woman's role in the Pakistan is childrearing. Considering that this study is being carried out in Pakistan, it is only logical to consider mothers as primary caregivers.

Theoretical Framework

Bowlby's attachment theory has long been the mainstream theory on parent-child relationships (1958). This theory posits that a child has one primary attachment figure, the mother on whom they rely, and that this close single bond is crucial to their social and emotional growth (Bretherton, 1985; Solomon & George, 1999). The primary attachment figure's or parent's sensitivity and regular responsiveness to the child's demand leads to the child developing a positive relationship with them, which provides social control functions and emotional warmth. Suppose a parent is uninterested or indifferent to a child's needs; in that case, they may behave to avoid attachment. These behavioral patterns may allow the child to foster aggressive relationships with others or become too self-reliant. To rephrase, a child's attachment or relationships with parents has a direct impact on the child's behavior development, and this has far-reaching consequences for the child's personality, cognitive ability, and social development throughout life, beginning in infancy and continuing through adulthood. Accordingly, this theory lends credence to the hypothesis that mother-child relationship significantly mediates between mothers' problematic smartphone use and maternal perception of child behavioral problems. Here problematic mobile phone use by the mother affects sensitivity and responsiveness to the child's demand, hindering their relationship, leading to the child avoiding attachment or developing negative attachment, which directly impacts the child's behavior development, as explained by the theory.

Literature Review

The following section will review the literature related to the study variables; Mothers' Problematic Smartphone Use, Mother-Child Relationship and Maternal Perception of Child Behavioral Problems.

Mothers' Problematic Smartphone Use and Maternal Perception of Child Behavioral Problems

In 2022, Kim et al. conducted a study that investigated mothers' smartphone dependence and how it predicts preschoolers' behavioral problems and emotional intelligence. The study was based on a descriptive correlational design, and the sampling strategy used was volunteer sampling. The sample included 141 mothers with children aged three to six who were attending preschool. Mothers were given the Smartphone Dependency Scale, Problem Behavior Assessment Scale, and Children's Emotional Intelligence Assessment Scale to fill out in order to collect data from them. The results of the study indicated that there is a positive correlation between a mother's age and her level of smartphone dependency, as well as between the amount of boredom experienced in her daily routine and her dependence on her smartphone. The results of the correlational analysis indicate a positive correlation between the level of smartphone dependence exhibited by mothers and behavioral problems in their children. However, no significant correlation was found between the mother's smartphone dependency and the emotional intelligence of their children. There was a significant correlation between the mother's dependence on her smartphone and the subscales measuring aggression, oppositional behavior, and emotional instability in the behavioral problems scale. According to the study, mothers of preschool-aged children who are highly dependent on smartphones and their childcare-related

experiences can be better understood in the future using qualitative measures. This research also suggests that future studies should focus on creating strategies to minimize this dependence in problematic mobile phone users.

In 2019, Carson and Kuzik examined the association between preschool-aged children's cognitive and social-emotional development and parent-child technological interference. The study took place in Edmonton, Canada, and used a cross-sectional design. One hundred parents and their children, selected from a sports camp, willingly participated in the study. Parent-child technology interference was measured using an adapted version of the Technology Device Interference Scale, and the child's social-emotional development was assessed using the Child Self-Regulation and Social Behavior Questionnaire. Objective assessment was used in the form of three iPad-based tasks from the Early Years Toolbox to collect data on the child's language and executive function development. Multiple linear regression, bivariate correlations, and descriptive statistics were used for analysis. The results showed that 95% of parents experienced parent-technology interference and that the mobile phone was the most problematic out of all the six technological devices. Greater parent-child technology interference was linked with decreased executive and self-regulation and increased behavioral issues. The research shows that using electronic devices frequently interrupts parents' interactions with their preschool-aged children. Several early childhood development subdomains may be negatively correlated with higher parent-child technological interference.

McDaniel and Radesky (2017) investigated whether parent-child interactions are disrupted by excessive parental technology use and whether this results in behavioral issues in kids. This study's goal was to determine whether there is a link between parents' problematic technology use and their children's behavioral issues since previous researches claim that

problematic parental technology use is solely connected with inferior parent-child relations. This was a cross-sectional study administered on 170 families in Pennsylvania consisting of a mother and a father. Volunteer sampling was employed. The researchers employed a self-report scale that was adapted from earlier studies to measure parental digital technology use that was problematic. A self-report tool developed from McDaniel's Technology Device Interference Scale was used to measure technology interference in the mother-child interaction as well. Using the Child Behavioral Checklist, parents reported externalizing and internalizing behavioral issues in their children. Centre for Epidemiological Studies Depression Scale, Co-parenting relationship scale, and Parenting Stress Index were also used to control for confounding factors such as quality of co-parenting, parental depression symptoms, and parenting stress. The Pearson correlation coefficient was used to analyze the data. The results indicated a correlation between troublesome parental digital technology use and disruption of parent-child interactions due to technology (termed as technoference). Additionally, higher perceived problematic digital technology usage in fathers was linked to higher internalizing behavior, more time spent on screen by children, and increased parenting stress; however, moms' problematic digital technology use was just linked to technoference. Technoference was linked to higher internalizing behavior and screen time for kids in both mothers and fathers. Additionally, as expressed by mothers, technoference in parent-child activities was linked to more externalizing behavior. The study comes to the conclusion that parents who use technology excessively face disruption in their interaction with their children, which in turn causes behavioral issues in children. However, it suggests that future studies should look at other contextual influences like parenting style, sensitivity, or family stressors.

In order to better understand how media usage by children, media use by mothers, and parent-child interactions predict behavioral strengths and weaknesses in children, Poulain et al. conducted a study in 2019. The research was carried out in Leipzig, Germany, with a sample size of 553 kids and their mothers. It was based on a cross-sectional study design, and volunteer sampling was employed. Children's and mothers' daily use of TV, gaming consoles, computers, and/or mobile phones was used to measure their screen time, and the frequency of shared activities at home was used to measure parent-child interaction. The Strengths and Difficulties Questionnaire (SDQ) was used to examine the behavioral abilities and difficulties of children. Simple and Multiple regression analyses were carried out. According to the research, children who had mothers who frequently used screens had a substantially higher likelihood of doing the same. Children who spent more time on screens had greater conduct issues, hyperactivity/inattention symptoms, and less prosocial behaviors. Mothers who spent a lot of time in front of the screen, their children had more emotional issues, behavioral issues, and signs of hyperactivity and inattention. In contrast, more frequent parent-child interactions were linked to children who had fewer conduct issues, fewer peer-relationship issues, and displayed more prosocial behavior. The study concluded that children might look to their mothers' media habits as an example of how to utilize media in general. Additionally, the results imply that parent-child interaction and media use by mothers and children separately influence children's behavioral problems and prosocial behavior.

Sundqvist et al. (2020) investigated the link between family technoference and child behavioral issues. The present research aimed at improving understanding of the correlation between children's internalized as well as externalized behaviors and prosocial behaviors and the usage of digital media in Swedish homes. This study was carried out in Sweden. Using volunteer

sampling, 133 mothers and 19 fathers of children aged 4-5 were recruited for the study. The study involved the administration of a survey comprising 60 items to parents, which aimed to gather information on their demographics, use of technology, instances of technofence, problematic use of smartphones, and their children's behavioral patterns as assessed by the Strengths and Difficulties Questionnaire (SDQ). The questionnaire related to media use, is based on the Comprehensive Assessment of Family Exposure (CAFE) tool, while questions concerning technofence have been adapted from McDaniel and Radesky's work. Spearman's rank correlation and Hierarchical Regression were used to analyze the data. The results of the current study implied that there is a significant positive association between parental and child cell phone use and internalized and externalized behaviors, whereas there exists a significant negative association between parental and child cell phone use and the prosocial scale of SDQ. Child and adult technofence, as well as internalized problem behavior, are all linked to parents' problematic mobile phone use. The findings indicate that the frequency of disruptions in interactions brought about by digital media can account for certain variability in the observable and covert behavioral manifestations of children. The research highlights that recurrent disruptions in communication resulting from the parent's engagement with digital media may lead to a decrease in parent-child interactions, a reduction in receptivity to the child's speech, and sometimes even an angry reaction. Overall, this leads to a less-than-ideal parenting approach and provides the kid with insufficient support for the development of emotional control. This could then lead to a pattern that resembles the findings of previous research, where children internally or externally attempt to regulate their behavior, both of which lead to behavior patterns that are significantly more problematic than those of a child whose parents report minimal technological interference.

Mothers' Problematic Smartphone Use and Mother-Child Relationship

Rothstein carried out a research in 2018 to compare the effects of a switched on and switched off cellphone on the quality of parent-child interaction. The interaction between parents and children is an essential component of the parent-child relation. The research was carried out in Stanislaus, California. The researcher utilized an experimental study design and recruited individuals by voluntary sampling. The research sample consisted of 39 parents and their children. Data on the quality of parent-child interactions was observed. There were two waiting periods, each of 8 minutes, during which parental behavior regarding the phone being on or off was categorized. Parenting Interactions with Children: Checklist of Observations Linked to Outcomes was used to code the videos made of these observations. Paired sample t-tests were conducted to compare the quality of parent-child interactions while the parents' smartphone was turned on and off. This study's findings reveal that the quality of parent-child interaction decreased when the smartphone was turned on. Specifically, values for responsiveness, affection, and encouragement were all considerably lower while the phone was on compared to when it was off. The current study aimed to measure how much time spent on smartphones by parents affects the quality of their interactions with their children.

Niu et al. (2020) investigated the correlation among parental phubbing (the degree to which parents are distracted by phones when in the presence of their children) and the problematic use of mobile phones by adolescents. The study also explored the role of child-parent relationship as a mediator and self-control as a moderator in this relationship. The purpose of this research was to analyze the correlation between parental phubbing and problematic mobile phone usage among adolescents, as well as the role that the parent-child relationship plays as a mediator and self-control plays as a moderator of this relationship. This study was

carried out in Wuhan, China. This study employed a cross-sectional research design and a convenient sampling strategy. The sample included 726 Chinese adolescents studying in grades 7-12 who were recruited through high schools. In order to collect information on these kids, the researcher utilized instruments, including the Mobile Phone Addiction Index, Parent-Adolescent Child Relationship Questionnaire, Mobile Phone Phubbing Scale, and an adapted self-control scale. The results showed that the connection between parental phubbing and adolescents' problematic mobile phone use was somewhat mediated by the parent-child relationship. Furthermore, the degree of self-control played a moderating role in the relationship between parental phubbing and problematic mobile phone use among teenagers. It also moderated the mediating effect of the parent-child relationship such that both effects were stronger for those with a low degree of self-control. Findings from this study have broadened the understanding of the factors that contribute to problematic teenage cellphone usage, as well as the influence of role of parents in this phenomenon.

In 2019, Hong et al. investigated the association between parental phubbing and children's problematic mobile phone use. The goal of this study was to evaluate this relationship, with a particular emphasis on the relationship between parents and children and self-esteem of children as mediators. This research was carried out in Beijing, China. A cross-sectional design and purposive sampling strategy were employed. The sample included 2,311 11-17 aged students from a secondary school. Chinese versions of a modified Partner Phubbing Scale with parent-related questions to assess parent phubbing, Family Adaptability and Cohesion Evaluation Scale to assess the parent-child relationship, Rosenberg Self-esteem Scale to assess self-esteem and Mobile Phone Problem Use Scale for problematic mobile phone use were used. To statistically analyze the data, Pearson product-moment correlation and mediation analysis were used. After

accounting for differences in gender and age, the results also revealed that parental phubbing was linked with children's PMPU both directly and indirectly where the parent-child relationship and children's self-esteem mediated the relationship.

Mother-Child Relationship and Maternal Perception of Child Behavioral Problems

Malakar (2021) looked at whether there were any appreciable differences in the problem behavior of kids depending on their family's socio-economic position and the parent-child relationship. The study used a cross-sectional design, a purposive sampling strategy, and it was conducted in schools in Kolkata. 100 Bengali parents between the ages of 30 and 45 who had children under the age of 10 made up the sample. Participants' data was gathered using a demographic form, the Modified Kuppaswamy Socioeconomic Status scale, the Child Behavior Checklist and the Parent Child Relationship Scale. Parents filled out the first two questionnaires, and the child filled out the last one. To examine the correlation among the dependent variable, problem behaviour, and the independent variables, socio-economic status and parent-child relationship one-way ANOVA was carried out. The findings showed that the socio-economic level of the family and the child-parent relationship strongly influenced the problem behavior in children in terms of both mother and father. The current study emphasizes the importance of the family's social class and the essence of the parent-child relationship in causing internalizing and externalizing problem behavior, which can lead to the development of chronic psychological disturbances.

In 2018, Mohil et al. investigated how parent-child relationships affected the likelihood that preschoolers will experience behavioral issues. According to them parents play an important role in development of child during these ages so the purpose of this study was to assess the

degree of parent child relationship and occurrence of behavioral problems among preschoolers. The study was carried out in Mullana, Ambala, Haryana. A descriptive correlational research design was used. The study involved 154 parents of 3–4 year olds who were between the ages of 31 and 35. Convenient sampling technique was used to select parents who visited the OPD ward of M.M. Institute of Medical Sciences and Research. The Preschooler Behavioral Questionnaire and a structured Parent Child Relationship Assessment Tool were used to gather the data. The results showed that while two preschoolers had neglectful levels of parent-child relationships, half of the preschoolers had appropriate levels. The study came to the conclusion that there was a strong, negative association between parent-child relationships and the prevalence of behavioral issues in preschoolers.

The relationship between maternal sensitivity and internalizing issues in preschoolers was investigated by Kok et al. (2013). This study seeks to explain this connection by employing a longitudinal, bidirectional model in two large prospective population-based cohorts. A longitudinal study method was employed for this investigation. An estimated 1800 mother-child pairs were included in the sample. Child internalizing issues were reported using the Child Behavior Checklist, which was completed by the mother of the child. Observation of maternal sensitivity was made during mother-child interaction tasks. Structural equation modelling was used in order to see whether comparable patterns of relationships between maternal sensitivity and child internalizing issues were discovered. Over the preschool years, there were slight but constant negative correlations between maternal sensitivity and internalizing issues in both populations. In both populations, the connections between mother sensitivity and child internalizing issues were clear. Child to mother pathways were only visible in the NICHD SECCYD sample. Preschoolers need attentive parenting if they are to flourish, but the study's

findings place more emphasis on overall behavioral problem patterns than on internalizing ones alone. This research does not disprove the two-way nature of mother-child relationships, but it does show that parenting has a far greater impact on developing children than the opposite.

The relationship between mothers and children and children's behaviors as measured by Aytac and Pike (2018), was analyzed in the context of two countries. The goal of this research was to examine how factors such as mother's mental health, family dynamics, and the mother-child bond affect children's ability to adapt. Two regions, Sussex in England and Central Anatolia in Turkey, were used for the research. It was similar to a previous design. The sample consisted of 118 mothers whose family took part in the Sisters and Brothers Study between 2002-2003 carried out by Pike, Coldwell, and Dunn. Purposive sampling was used. The Strengths and Difficulties Questionnaire, Parent-Child Relationship scale (1992), Confusion, Hubbub, and Order Scale, and Malaise Inventory were all administered to the mothers in order to collect data. Through the use of multilevel modelling, we they were able to investigate both inter- and intra-family differences, as well as the potential moderating effect of culture. All 5 hypotheses were either partly or completely supported by the results. Differential parenting inside families, as well as parenting between families, was shown to have varying meanings across cultures. Furthermore, the results of the present research showed that children's ages, genders, levels of household disorder, and mothers' emotional well-being were all important predictors of child behavioral outcomes. Additionally, distinguishing between family-wide and child-specific parenting suggests that detailed results may only be obtained by evaluating multiple children in a family.

In 2019, Dijk et al. investigated the possibility that the relationship between mother-child interactions and teacher reported externalizing behaviors in preschoolers could be explained by

inhibitory control. The study's goal was to evaluate a longitudinal model that suggested affective dyadic flexibility and maternal negative affect predicted as well as interacted with one another to predict hyperactive/impulsive behavior and aggressive conduct, with preschoolers' inhibitory control acting as a mediator. The study was conducted in Utrecht, Netherlands. It used a purposive sampling strategy and a correlational study design. 173 mothers and their children were included in the sample, of whom 78% were clinically referred and 22% were in the generally developing category. The first observations of mother-child interactions were utilized to quantify affective dyadic flexibility as well as the negative maternal affect, which included negative emotions such as anger/disgust, distress, and disregard. The study employed three executive function tasks, namely the "Shape School Inhibit, Modified Snack Delay, and Go-No-Go", to measure the inhibitory control of children (Schoemaker et al. 2012). The Caregiver-Teacher Report Form for Ages 1.5-5 was used to gauge the preschoolers' externalizing behavioral issues. The findings support the prediction; Affective dyadic flexibility and maternal negative affect predicted as well as interacted with one another to predict hyperactive/impulsive behavior in children but not their aggressive behavior. Preschoolers' hyperactivity and impulsivity were linked to the structure and content of mother-child interactions, and inhibitory control was identified as the mediator responsible for this relationship.

Indigenous Studies

In 2013, Goraya and Shamama-tus-Sabah carried out this study. Understanding the relationships between parenting and social information processing and behavioral issues in children was the key objective to carry out this study. The study was conducted in Lahore and made use of a correlational research design. 52 boys and 54 girls between the ages of 8 and 11 made up the study's sample, together with their mothers and instructors. In order to evaluate

parenting practices, children's social information processing, and their behavioral issues, three different questionnaires were used: The Parent Questionnaire, the Home Interview with Child and the Child Behavior Checklist. Hierarchical multiple regression was used to analyze the data statistically. Positive parenting negatively correlated with behavioral difficulties in children, but negative parenting positively correlated with behavioral issues in children. In addition to parenting, children's hostile social information processing positively correlated with and elevated behavioral difficulties. The knowledge about distinctive function of children's SIP in exacerbating their behavioral issues is a significant contribution to existing literature.

Naz et al. (2016) investigated the association between parent-child communication conflicts, interaction difficulties (socio-emotional impairments and aggressiveness), and depressive symptoms in depressed children. The purpose of this study was to evaluate the association between parent-child communication disputes and depressed symptoms being mediated by interaction difficulties. The research was conducted in Lahore. The study employed a correlational research design and a purposive sampling technique. The study's participants comprised of 70 male and 70 female individuals who were diagnosed with depression and recruited from the psychiatric departments of Lahore's government hospitals. Parent-child communication conflicts were evaluated using the Parent-Child Conflict Scale, interactive problems were evaluated using the Buss-Perry Aggression Questionnaire and Child Adjustment Scale, and depressive symptoms were evaluated using the Centre for Epidemiological Studies Depression Scale. Children's interactive problems were shown to be significantly predicted by parent-child conflict. Emerging as strong predictors of children's interactive difficulties (such as social-emotional deficits, aggressive behaviour, and depressive symptoms), parental communication issues are worth further exploration. The findings might

have important implications for health professionals and parents interested in learning more about these issues in children with depression.

In 2020, Lakhtir et al. did a study to determine the link between parent-child relationships and physical aggressiveness. This study was conducted in Pakistan. This study utilized a cross-sectional design and two-stage cluster sampling. The sample consisted of 5192 school-going adolescents aged 11–16 years whose data was obtained from the Global School-based Student Health Survey (2009) in the form of secondary data. A self-reported questionnaire was utilized to collect data on dietary habits, self-care practices, mental health, physical activity, protective factors, tobacco use, and violent and unintentional injury. Parent-child relationship was assessed by the fact whether parents supervise academic and social activities and understand child's problems using a three point likert scale. Data was analyzed using multilevel cox proportional regression. 41% of children exhibited physical violence, and 27% of these children had a poor parent-child relationship. The study also found that boys had physical aggression regardless of the nature of relationship with their parents whereas girls who had poor relationship with parents were more likely to engage in physical violence than those with strong parental bonds.

Saleem et al. (2017) conducted a study to examine the correlation between attachment styles and emotional and behavioral issues in school-aged children. The goal of this study was to examine the parent-child attachment style and emotional and behavioral difficulties in teenagers living in extreme slum areas and those living in mainstream environments. The research was conducted in Pakistan using a cross-sectional design. Purposive sampling was adopted as the sampling approach. The sample consisted of 408 children between the ages of 12 and 18, half of whom were from mainstream neighborhoods and the other half from slum regions. Participants

were surveyed using a demographic questionnaire, the School Children's Problems Scale, and the Attachment Questionnaire for Children. The findings reveal that children from slum regions have a more ambivalent attachment to their parents. In terms of anxiety, academic issues, aggression, and overall mental health issues, they scored higher than those living in mainstream regions. The students living in mainstream areas obtained higher scores on withdrawn and somatic problems. In light of the data, it may be concluded that children from slum regions have ambivalent attachments, which contribute to greater emotional and behavioral issues.

This study was conducted by Rafiq et al. (2022) to evaluate the association between the quality of the parent-child relationship and interpersonal issues with emotional regulation. The research was conducted in Lahore, Pakistan. A correlational study design was used. The study included 300 university students (males and females) ranging in age from 18 to 25, who were chosen using stratified random selection from private and public institutions. Indigenous Quality of Parent-Child Relationship Scale (developed by the researcher), Emotional Regulation Scale and Interpersonal Difficulties Scale were used to collect data. According to the findings, people who had negative or less satisfactory connections with their parents experienced greater difficulties with their emotions and new relationships. The strength of the parent-child connection was found to be a favourable indicator of students' emotional control and interpersonal issues. According to the current study, children who have a poor or less pleasant relationship with their parents face more challenges with their emotions and relationships. According to the study, less pleasant child-parent interactions cause a variety of psychological and social health issues in adults.

Summary of Literature Review

16 out of 18 articles used a correlation research design. From among these two were based on a longitudinal approach. Another common factor between the majority of the studies was the sample that they used. In 12 out of 18 studies, data was collected from mothers, among which six studies included collecting data from both parents. Regarding measures used, the Strengths and Difficulties Questionnaire was used to assess behavioral problems in children in three of the research studies. The Technology Interference Scale was used to assess interruption in parent-child interaction in two of the studies (McDaniel, 2017; Carson, 2019). In assessing the correlation between problematic smartphone use among mothers and their perception of child behavioral problems, all five articles pointed towards a significant positive correlation between the two, where a technological interruption in the interaction between parents and child leads to externalizing and internalizing behavioral issues in the latter. In the second relationship, that is, mother-child relationship and maternal perception of child behavioral problems, all articles pointed towards a significant relationship, but all did not necessarily point towards a positive correlation. The major limitation in majority of the studies was that they all used a correlational design; hence conclusions cannot be made about cause and effect. Most studies only made use maternal or parental reports and hence these results should be replicated using multiple methods, including observations of the child as well to develop reliability of results through various methods of assessment. Moreover, a large number of studies were only conducted in the west and only one out of the 15 non-indigenous ones included a sample from the East. Future implications in existing studies deal with carrying out longitudinal and experimental studies on the same topic to assess cause and effect.

Rationale

The advent of modern mobile phone technology, particularly smartphones, has created more opportunities for social interactions and communication between human beings. It has also created concerns for deterioration of the quality of mother-child relationships and adverse developmental and behavioral problems in children due to parental phubbing – parents engaged with their smartphones while ignoring their children's personal interaction or physical presence. The study addresses these emerging health problems by evaluating the relationships between mothers' problematic smartphone use and mother-child relationships with the maternal perception of child behavioral problems. This study's results will inform the significance of mothers' self-monitoring and regulation of smartphone use.

Most literature on problematic smartphone use, parent/mother-child relationships, and child behavioral problems has contributed much information on the strengths and associations between these variables. However, there are significant gaps in some of the literature. This study will account for some of those gaps.

Firstly, there is a gap in analysis among the various literature reviewed. While emerging evidence suggests that mothers' problematic smartphone use is a contributing factor to child behavioral problems, the association between these two variables is not well understood, possibly because there is a limited understanding of the mediating factors. Most studies either focus on finding the correlation among maternal problematic smartphone use and child behavioral problems or predicting the effect the former has on the latter. None of these studies have explored the role of the mother-child relationship as a mediating factor. Therefore, one of the goals of this study is to explore the mediating effect of the mother-child relationship on the

association between mothers' problematic smartphone use and child behavioral problems. It is to understand better the critical risk factors associated with mother-child relationships, which could lead to children developing behavioral problems.

Secondly, the reviewed literature possesses a significant gap in knowledge such that all the quantitative Pakistani studies, to the best of my knowledge, contain samples of children only (Goraya & Shamama-tus-Sabah, 2013; Naz et al., 2016; Saleem et al., 2017; Lakhtdir et al., 2020). This means that they lack the mothers' perspective on how they perceive their relationships with their children and their behavioral problems. For this reason, it is crucial to carry out research in Pakistan that focuses on mothers' assessment of the two variables mentioned above to obtain additional information on the differing perspectives of mothers instead of children.

Thirdly, a gap in concepts emerges when some of the studies presented a broad picture of the relationship between parents' problematic smartphone use or parent-child relationships and child behavioral problems (Carson & Kuzik, 2019; McDaniel & Radesky, 2017; Sundqvist et al., 2020; Malakar, 2021; Mohil et al., 2018). Other studies narrowly focused on mothers' problematic smartphone use or mother-child relationships and child behavioral problems (Kim et al., 2022; Poulain et al., 2019; Kok et al., 2013; Aytac & Pike, 2018; Dijk et al., 2019, Goraya & Shamama-tus-Sabah, 2013; Lakhtdir et al., 2020; Abid et al., 2019; Saleem et al., 2017; Naz et al., 2016). Therefore, we observe that some studies focus on parents while others focus exclusively on mothers. This study chooses to focus on mothers exclusively, based on the reasoning that while fathers are no less capable than mothers in providing children with responsive and sensitive care (Lamb, 1997), mothers are most often the primary caregivers for children regardless of the employment status (Bianchi et al., 2006).

Fourthly, there is a gap in population among the studies reviewed. All Pakistani studies focus on the relationships between mother-child relationship and child behavioral problems (Abid et al., 2019; Saleem et al., 2017; Lakhdir et al., 2020; Naz et al., 2016; Goraya & Shamama-tus-Sabah, 2013). To date, no research conducted in Pakistan has investigated the potential correlations between mothers' problematic mobile phone use and behavioral issues in children. Any available literature on the latter relationships stems from the west. Due to differences in society and culture, the results of west-based studies cannot be generalized to Pakistanis in particular. Therefore, the gap calls for effective research into the relationships between mothers' problematic smartphone use and child behavioral problems, as well as the mother-child relationship and child behavioral problems in Pakistan. It will allow Pakistani researchers and researchers of similar cultures and societies to understand better the direction and strength of the relationships between these variables to educate mothers about the detrimental effects of problematic smartphone use that might translate to child behavioral problems if not monitored or regulated.

This study will focus on mothers' problematic smartphone use, mother-child relationships, and child behavioral problems in the context of Pakistan. It will produce results that can either be similar or different relative to previous studies in the west. If the results are similar, it will enhance the external validity of the results. If the results are different, it will entail new insights which would help inform parents, teachers, counselors, clinical psychologists, and policymakers on the risk factors and associations between mothers' problematic smartphone use and child behavioral problems. It would also inform them about how mother-child relationships mediate the relationship between mothers' problematic smartphone use and child behavioral problems. On a larger scale, the study would likely benefit social and clinical aspects, as

understanding these relationships would help devise effective and proper prevention and treatment plans.

Objectives

- To find out the relationship between mothers' problematic smartphone use, mother-child relationship and maternal perception of child behavior problems.
- To investigate the mediating role of the mother-child relationship between mothers' problematic smartphone use and maternal perception of child behavior problems.

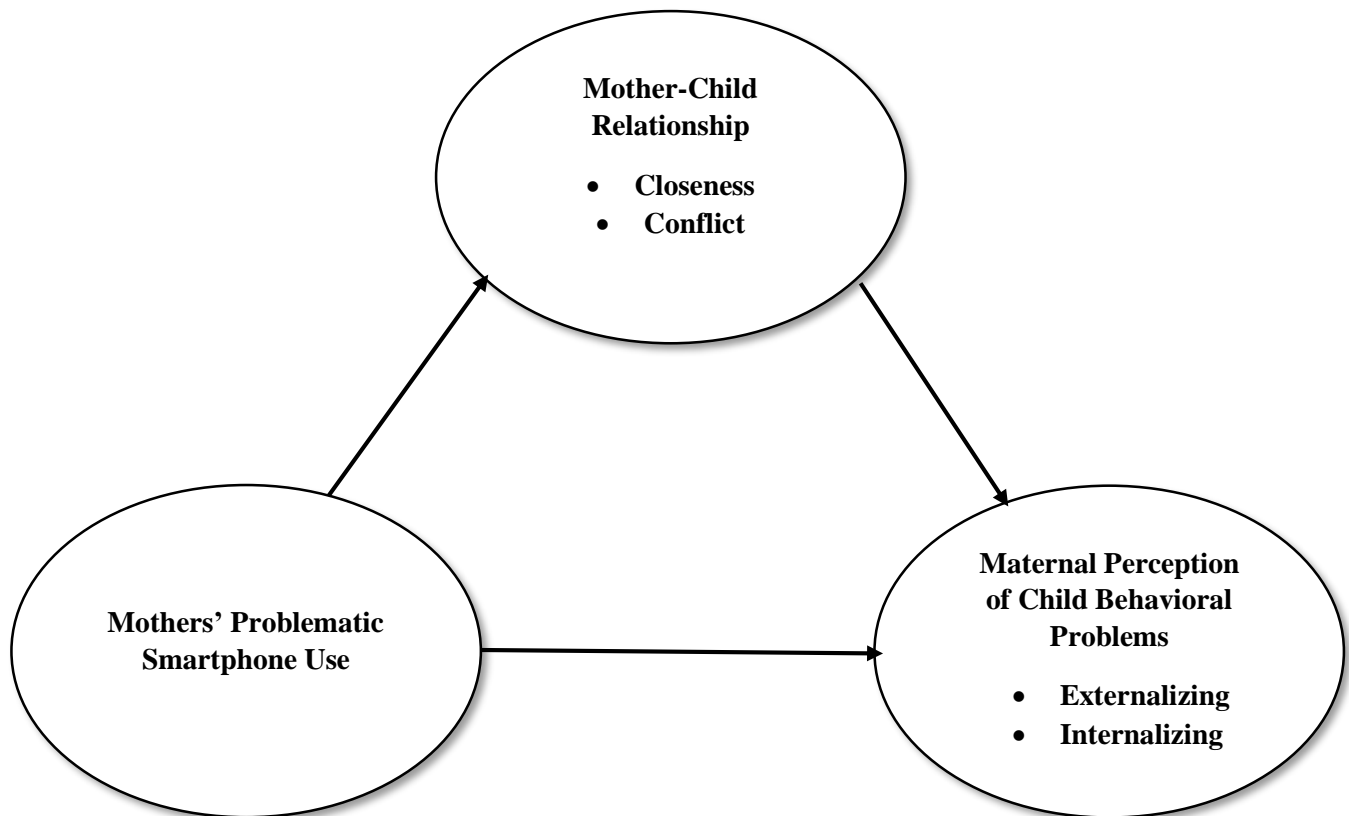
Hypotheses

- There is likely to be a positive relationship between mothers' problematic smartphone use and conflict domain of mother-child relationship.
- There is likely to be a negative relationship between mothers' problematic smartphone use and closeness domain of mother-child relationship.
- There is likely to be a positive relationship between conflict domain of mother-child relationship and maternal perception of child behavioral problems.
- There is likely to be a negative relationship between closeness domain of mother-child relationship and maternal perception of child behavioral problems.
- There is likely to be a positive relationship between mothers' problematic smartphone use and maternal perception of child behavioral problems.
- Mother-child relationship significantly mediates between mothers' problematic smartphone use and maternal perception of child behavioral problems.

Proposed Theoretical Model

Figure 1.1

Proposed Model of Mothers' Problematic Smartphone Use, Mother-Child Relationship and Maternal Perception of Child Behavioral Problems



Chapter II

Method

Research Design

A correlational research design was used in this study.

Participants (Sample & Sampling Strategy)

For this, research participants comprised of mothers of young children. The sample consisted of 100 mothers from the metropolitan area of Lahore. The sampling strategy that was used was purposive sampling along with the snowball sampling strategy.

Inclusion Criteria

- Mothers who were housewives were approached.
- Mothers who had a smartphone were included.
- Mothers who had at least one child between the ages of 3-11 were selected (Erikson, 1950)
- Mothers aged 18-45 were approached (Malakar, 2021; Rothstein, 2018; Sundqvist, 2020)
- Mothers who had a minimum of one and a maximum of three children were selected.
- Mothers who knew how to read and understand English were approached.

Exclusion Criteria

- Mothers with physical disabilities were excluded.
- Mothers with diagnosed psychotic disorders were not included.
- Mothers who were divorced or separated were not included.

- Mothers with children having developmental disorders (e.g., intellectual disability, autism spectrum disorder, cerebral palsy, etc.) were excluded.
- Mothers not belonging to Pakistani origin or who did not identify with its culture were excluded.

Table 2.1

Mean, Standard Deviation, Frequencies and Percentages of Demographic Characteristics of Participants (N=100)

Variables	M(SD)	f (%)
Age	33.53 (4.88)	
Education		
Intermediate/A levels		5 (5%)
Undergraduate/Bachelors		40 (40%)
Postgraduate/Masters		52 (52%)
Ph.D./Doctorate		3 (3%)
Religion		
Islam		100 (100%)
Family System		
Joint		69 (69%)
Nuclear		31 (31%)
Monthly Family Income	291280 (243354.38)	
Number of Children		
1		15 (15%)
2		47 (47%)
3		38 (38%)
Number of children in age bracket		

1	48 (48%)
2	41 (41%)
3	11 (11%)
Average hours spent on smartphone	4.43 (1.80)
Husband satisfaction with smartphone use	
Very unsatisfied	7 (7%)
Unsatisfied	16 (16%)
Neutral	52 (52%)
Satisfied	20 (20%)
Very satisfied	5 (5%)
Psychological Illness	
No	100 (100%)

Note. *M* = Mean, *SD* = Standard Deviation.

Conceptual and Operational Definition of Variables

The variables selected for the research were mothers' problematic smartphone use, mother-child relationship and maternal perception of child behavior problems.

Kwon et al. (2013) defined problematic smartphone usage as excessive smartphone use with accompanying dysfunction, withdrawal problems, craving, tolerance, disruption in everyday life, the inclination for cyberspace-oriented relationships and other characteristics akin to substance addiction. It was operationally defined as participants scores' obtained on the Smartphone Addiction Scale- short version devised by Kwon et al. (2013)

The variable of mother-child relationship was measured by the Child-Parent Relationship Scale- short form. Pianta (1992) stated that the parent-child relationship refers to how parents see their interactions with children. The parent-child relationship is distinct from the total of their interactions or the sum of their individual characteristics; it has its own identity that is distinct from both of these (Sroufe, 1989). This variable determined the level of closeness and conflict in their relationship with their child. Conflict referred to negative interactions with their child (e.g child and mother always seem to be struggling with each other, child becomes easily angry at them or remains angry or is resistant after being disciplined etc.). Closeness referred to the interaction being marked by warmth, affection, and open communication. (Pianta 1992). It was operationally defined as participants' scores obtained on the closeness and conflict subscale of the Child-Parent Relationship Scale-short form developed by Pianta (1992)

Child behavioral problems, evaluated by the "Strengths and Difficulties Questionnaire," pertain to children's externalizing and internalizing problems as reported by parents. According to Goodman (1997), externalizing problems are characterized by conduct problems and hyperactivity, whereas internalizing problems are characterized by emotional and peer-related problems. Externalizing problems were defined as scores obtained on the conduct and hyperactivity subscales and internalizing problems were defined as the scores obtained on the emotional and peer problems subscales of the Strengths and Difficulties Questionnaire (Goodman, 1997)

Measures

The following measures were used in the research.

Demographics Form

A demographics form was employed to gather fundamental demographic data about the participants, including but not limited to the level of education, age, total children, children's age, ethnicity, number of hours of phone used, and any existing physical or psychological disorders.

Smartphone Addiction Scale- Short Version (SAS-SV)

To measure participants' problematic smartphone usage, a brief version of the Smart Phone Addiction scale devised by Kwon et al. (2013) was employed. SAS-SV contains six key components that describe problematic and addictive mobile phone usage, including disruption in everyday life, degree of tolerance, mobile phone overuse, positive anticipation, discontinuation, and online relationships. It has ten items measured on a 6-point Likert-scale where 1 denotes strongly disagree and 6 denotes strongly agree. The Cronbach alpha value for the test is 0.91. A high score on this test indicates a high level of problematic cell phone use.

Child-Parent Relationship Scale- Short Form (CPRS-SF)

The Child-Parent Relationship Scale developed by Pianta (1992) was used to assess the mother-child relationship variable. It was completed by mothers and obtained data regarding their perceptions of their relationships with their child. It contains 15 items that are measured on a Likert scale consisting of 5 options and the results can be averaged into groupings of items that correlate to the two subscales, conflict (measuring negative aspects) and closeness (measuring

positive aspects). The conflicts subscale has eight items and the closeness subscale has seven items. Cronbach alpha for the conflict subscale is 0.83, and Cronbach alpha for the closeness subscale is 0.72. The conflict and closeness scales represent two separate aspects of parent-child relationships, as indicated by the weak correlation ($r = 0.16$) that exists between them.

Strengths and Difficulties Questionnaire (SDQ)

Child psychiatrist Goodman developed the "Strengths and Difficulties Questionnaire" (1997). It is a behavioral assessment scale for individuals aged 4 to 17. The parent report version that was used in the present study has 25 items. There are 5 subscales and each subscale has 5 items. These subscales include emotional symptoms items, conduct difficulties, hyperactivity/inattention, peer interaction problems and prosocial behavior. Parents have to choose from a 3-point Likert scale where 0 is not true, 1 is somewhat true and 2 is definitely true. The first four subscales add together to form a total difficulty score. In all, 15 items highlight difficulties and ten items show strengths, five of which are from the Prosocial subscale. For the general population, it may be preferable to divide the SDQ into three subscales. The first being the internalizing difficulties which includes the 10 items of the emotional and peer subscale and the second being the externalizing difficulties which includes the 10 items of the conduct and hyperactivity subscale, respectively. The third subscale includes the 5 items of the prosocial subscale. Since only difficulties were being assessed in this study, the internalizing and externalizing problems subscales were used. The SDQ has strong internal consistency, with Cronbach's alpha values between 0.63 and 0.85, as shown by a number of studies, including those by Deighton et al. (2014) and Haywood et al. (2014).

Procedure

Institutional approval was sought and consent from the authors of the scales was taken. The participants who met the inclusion criteria were approached and were then briefed about the different aspects of the research, including their rights and responsibilities regarding participation. Participants were asked to sign an informed consent form once they completely agreed to take part in the research. The consent form explained the ethics and rights to withdraw.

Furthermore, the participants were asked to fill out the demographics sheet to attain basic information. This was kept confidential throughout the whole research process and didn't require any sensitive personal data. After the demographics form was filled out, the participants were administered the three scales that were Smartphone Addiction Scale- Short Version (SAS-SV), Child Parent Relationship Scale – Short Form (CPRS-SF) and Strengths and Difficulties Questionnaire- Parent version (SDQ). Individual administration took place and it took participants approximately 15-20 minutes to fill the form. A google form including the informed consent, demographic form and questionnaires was also used to collect data online. 35-40 participants filled data online. Cases that did not fall within the inclusion criteria were eliminated and data was recollected until required sample size was reached.

After collecting the data, the data analysis including the statistical analysis was carried out in order to test the relationship between the independent and dependent variables.

Ethical Consideration

The following guidelines were followed to ensure that the research was ethical:

1. Once the concerned authorities and boards had given their approval, only then the research took place.
2. The participants gave their informed consent to take part in the research.
3. It was made sure that the participants were not harmed in any way.
4. The collected data was kept private, and no personal information about the participants was disclosed.
5. Participants had the option to leave the research at any time.

Statistical Analyses

Statistical package for social science (Version 22) was used to analyze data. Descriptive statistics such as mean, standard deviation, frequencies, and percentages were computed to identify the demographic characteristics of the sample. Pearson Product Moment Correlation Coefficient was used to determine the relationship between the specified variables. Parallel mediation analysis was also carried out to look at the mediation effect of the mother-child relationship between mothers' problematic smartphone use and maternal perception of child behavioral problems.

Chapter III

Results

The aim of this research was to study the relationship between mothers' problematic smartphone use, mother-child relationship and maternal perception of child behavior problems. It also aims to examine the mediating role of mother child relationship between mothers' problematic smartphone use and maternal perception of child behavior problems. The findings of the study are explained in this chapter, Table 3.1 shows the psychometric properties of the variables, Table 3.2 demonstrates the correlation coefficient between the variables and Table 3.3 presents the findings of the mediation analysis to determine the indirect effect of problematic smartphone use on maternal perception of child behavioral problems through mother-child relationship.

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Table 3.1*Psychometric Properties of Major Study Variables of the Sample (N=100)*

Measures	k	M	SD	α	Range
1. SAS-SV	10	31.26	10.64	0.88	10-60
2. CPRS-SF					
Conflict	8	20.79	6.82	0.85	8-40
Closeness	7	32.14	2.85	0.68	7-35
3. SDQ					
Internalizing	10	4.60	3.34	0.74	0-20
Externalizing	10	5.95	3.09	0.70	0-20

Note. n = No. of items, M = Mean, SD = Standard Deviation, α = Cronbach's alpha, SAS-SV = Smartphone Addiction Scale-Short Version, CPRS-SF = Child Parent Relationship Scale-Short Form, SDQ = Strengths and Difficulties Questionnaire.

The central limit theorem states that the distribution of sample means approximates a normal distribution as the sample size gets larger than 30, regardless of the shape of the original populations distribution (Gravetter & Wallnau, 2017). By assuming central limit theorem, we consider that the data was normally distributed for this research study because it consisted of a sample size of 100. Reliability analysis of the scales used was done to determine the internal

consistency of the scales as evidenced by the Cronbach alpha values of the scales in table 3.1.

With a Cronbach alpha value of 0.88, the Smartphone Addiction Scale-Short Version demonstrated good reliability. The Cronbach alpha value for the Conflict subscale of the Child Parent Relationship Scale-Short Form indicated good reliability, while for the Closeness subscale it was acceptable (Cresswell, 2005, 2010; Pallant, 2001; Sekaran, 1992). Whereas both the Internalizing subscale and Externalizing subscale of the Strength and Difficulties Questionnaire demonstrated fair reliability with a Cronbach alpha value of 0.74 and 0.70, respectively.

Table 3.2

Descriptive Statistics and Pearson Product Moment Correlation among Mothers' Problematic Smartphone Use, Mother-Child Relationship and Maternal Perception of Child Behavior Problems

Variables	<i>N</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. SAS-SV	100	3.13	1.06	-----				
2. Conflict subscale of CPRS-SF	100	2.60	0.85	0.56***	-----			
3. Closeness subscale of CPRS-SF	100	4.59	0.41	-0.46***	-0.50***	-----		
4. Internalizing subscale of SDQ	100	0.46	0.33	0.42***	0.53***	-0.40***	-----	
5. Externalizing subscale of SDQ	100	0.60	0.31	0.41***	0.57***	-0.44***	0.39***	-----

Note. *N* = Sample size, *M* = Mean, *SD* = Standard Deviation, α = Cronbach's alpha, *SAS-SV* = Smartphone Addiction Scale-Short Version, *CPRS-SF* = Child Parent Relationship Scale-Short Form, *SDQ* = Strengths and Difficulties Questionnaire. (one-tailed test)

* $p < .05$. ** $p < .01$. *** $p < .001$

Pearson product moment correlation analysis was used to investigate the relationship between mothers' problematic smartphone use, mother-child relationship and maternal perception of child behavioral problems. The results indicate that mothers' problematic smartphone use had a significant, positive and strong correlation with conflict domain of mother-child relationship whereas it had a significant, negative and moderate correlation with the closeness domain of mother-child relationship. This suggests mothers who had problematic smartphone use were less likely to have a positive interaction with their child marked by warmth, affection, and open communication and more likely to have a negative interaction with their child (e.g child and mother always seem to be struggling with each other, child becomes easily angry at them or remains angry or is resistant after being disciplined etc.). The results indicated that there is a significant, positive and moderate relationship between mothers' problematic smartphone use and maternal perception of child behavior problems namely internalizing and externalizing behavioral problems. This implies that mothers who had problematic smartphone use perceived their children to exhibit internalizing behaviors, which are primarily characterized by internal processes like anxiety, depression, and somatization, as well as externalizing behaviors, which are primarily characterized by actions like hostility, aggression, and antisocial behavior (Düren & Yalçın, 2022). Conflict domain of mother child relationship had a significant, positive and strong correlation with both domains of maternal perception of child behavior problems. This implies mothers perceived that their children were more likely to display internalizing and externalizing behaviors if they had a relationship with them characterized by negative interactions. Moreover, there is a significant, negative and moderate relationship between closeness domain of mother child relationship and both domains of maternal perception of child behavior problems. This shows that the if mother-child relationship was characterized by

warmth, affection, and open communication it is less likely that the mother perceived their child exhibited internalizing and externalizing behavioral problems.

Table 3.3

Parallel Mediation Analysis showing Direct and Indirect Effect of Mother-Child Relationship in Predicting Maternal Perception of Child Behavioral Problems (N = 100)

Criterion Variable	Predictor Variable	<u>95% CI</u>			
		β	p	LL	UL
Direct Effects					
Internalizing	MPSU	.04	.23	-.03	.11
Conflict	MPSU	.43***	<.001	.29	.57
Closeness	MPSU	-.15***	<.001	-.21	-.08
Internalizing	Conflict	.15**	.001	.06	.23
Internalizing	Closeness	-.08	.36	-.26	.09
Internalizing	Age	-.00	.93	-.01	.01
Internalizing	NOHSOS	.02	.24	-.01	.06
Indirect Effect					
Internalizing	MPSU through Conflict	.06	---	.03	.11
Internalizing	MPSU through Closeness	.01	---	-.01	.04
Direct Effects					
Externalizing	MPSU	.01	.70	-.05	.07
Conflict	MPSU	.43***	<.001	.29	.57
Closeness	MPSU	-.15***	<.001	-.21	-.08
Externalizing	Conflict	.16***	<.001	.08	.23
Externalizing	Closeness	-.11	.17	-.26	.05
Externalizing	Age	-.01	.06	-.02	.00
Externalizing	NOHSOS	.02	.29	-.01	.05
Indirect Effect					
Externalizing	MPSU through Conflict	.07	---	.03	.11
Externalizing	MPSU through Closeness	.02	---	-.01	.04

Note. MPU =Mothers' Problematic Smartphone Use, NOHSOSP =Number of Hours Spent on Smartphone, LL = Lower Limit, UL = Upper Limit, * $p < .05$, ** $p < .01$, *** $p < .001$. The analysis took into account covariates such as age of participant and average numbers of hours spent on smartphone.

The SPSS Macro PROCESS developed by Hayes (2013) was run to investigate the mediating role of mother child relationship between mothers' problematic smartphone use and maternal perception of child behavioral problems. According to Hayes (2013) parallel mediation involves two or more than two variables mediating the relationship between the independent and dependent variable (s). These variables may or may not correlate with each other but no causality should exist between them (Kane & Ashbaugh, 2017). In this study the two mediators were the two dimensions of mother-child relationship namely conflict and closeness. A bias-corrected nonparametric bootstrapping technique with 5,000 resamples was employed to estimate the direct, indirect, and total effects of mothers' problematic smartphone use on maternal perception of child behavioral problems. The mediating role of the two dimensions of mother child relationship was explored with reference to two domains of maternal perception of child behavioral problems (dependent variable), namely internalizing and externalizing behavioral problems.

Covariate variables such as, age of mother and number of hours they spent using their smartphone daily were also included to control for their effect on maternal perception of child behavioral problems and reduce bias and unexplained variability as well.

The table shows that the direct effect of problematic smartphone use (independent variable) on conflict domain of mother-child relationship (mediator) is significant and positive. Whereas the direct effect of problematic smartphone use (independent variable) on closeness domain of mother child relationship (mediator) is significant and negative. This means that mothers who have problematic smartphone use are more likely to have a relationship with their child characterized by negative interactions and less likely to have a relationship with their child based on open communication, affection and warmth. The direct effect of conflict domain of

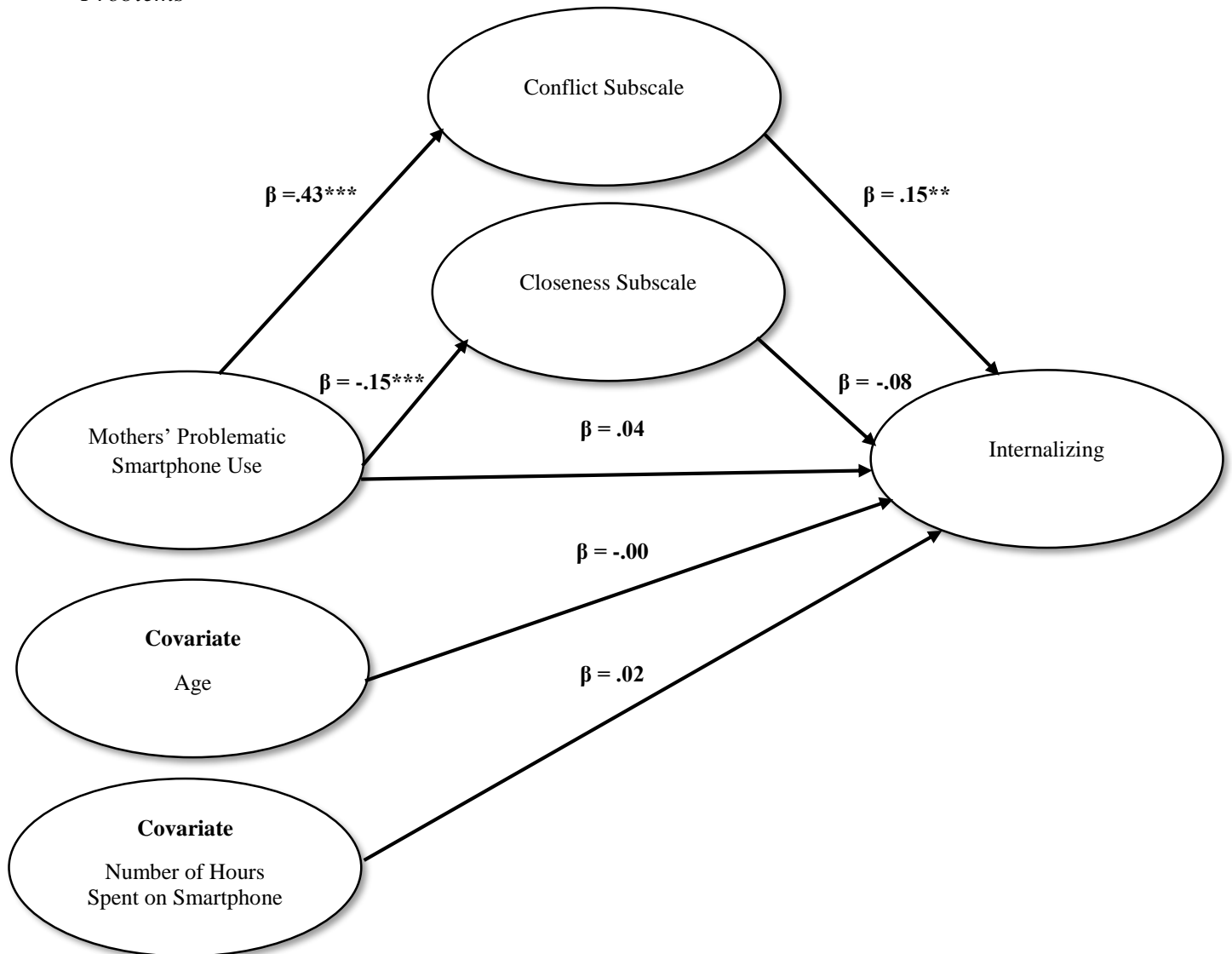
mother child relationship (mediator) on maternal perception of child internalizing behavioral problems (dependent variable) is also significant and positive, suggesting that those mothers' relationship with their child is characterized by conflict are more likely to perceive that their child has internalizing behavioral problems characterized by internal processes like anxiety, depression, and somatization. The direct effect of closeness domain of mother-child relationship on maternal perception of child internalizing behavioral problems is non-significant. The direct effect of problematic smartphone use (independent variable) on internalizing behavior (dependent variable) is also non-significant. The table also shows that the indirect effect of mothers' problematic smartphone use on maternal perception of child internalizing behavioral problems through conflict is significant. Therefore, conflict domain of mother-child relationship significantly mediates the relationship between mothers' problematic smartphone use and maternal perception of child internalizing behavioral problems. However, as the table indicates the indirect effect of mothers' problematic smartphone use on maternal perception of child internalizing behavioral problems through closeness is non-significant, hence, closeness domain of mother-child relationship does not significantly mediate the relationship between mothers' problematic smartphone use and maternal perception of child internalizing behavioral problems.

Moreover, the table shows that in the mediation model of mothers' problematic smartphone use, mother child relationship and maternal perception of child externalizing behavior problems the direct effect of mothers' problematic smartphone use (independent variable) on conflict domain of mother child relationship (mediator) is significant and positive. Whereas the direct effect of problematic smartphone use (independent variable) on closeness domain of mother child relationship (mediator) is significant and negative. This signifies that mothers who have problematic smartphone use are more likely to have a relationship with their

child that is marked by negative interactions between them and less likely to have a relationship with their child based on closeness which is marked by open communication, affection and warmth. The direct effect of conflict domain of mother child relationship (mediator) on maternal perception of child externalizing behavioral problems (dependent variable) is significant and positive suggesting that those mothers whose relationship with their child is characterized by negative interactions between them are more likely to perceive that their children have externalizing behavioral problems including hostility, aggression, and antisocial behavior. The direct effect of closeness domain of mother child relationship (mediator) on maternal perception of child externalizing behavioral problems (dependent variable) is non-significant. The direct effect of mothers' problematic smartphone use (independent variable) on maternal perception of child externalizing behavioral problems (dependent variable) is also non-significant. The table also shows that the indirect effect of mothers' problematic smartphone use on maternal perception of child externalizing behavioral problems through conflict is significant. Therefore, conflict domain of mother-child relationship significantly mediates the relationship between mothers' problematic smartphone use and maternal perception of child externalizing behavioral problems. Whereas the indirect effect of mothers' problematic smartphone use on maternal perception of child externalizing behavioral problems through closeness is non-significant. Therefore, closeness domain of mother-child relationship does not significantly mediate the relationship between mothers' problematic smartphone use and maternal perception of child externalizing behavioral problems

Figure 3.1

Emerged Mediation Model showing Mother-Child Relationship as a Mediator between Mothers' Problematic Smartphone Use and Maternal Perception of Child Internalizing Behavioral Problems

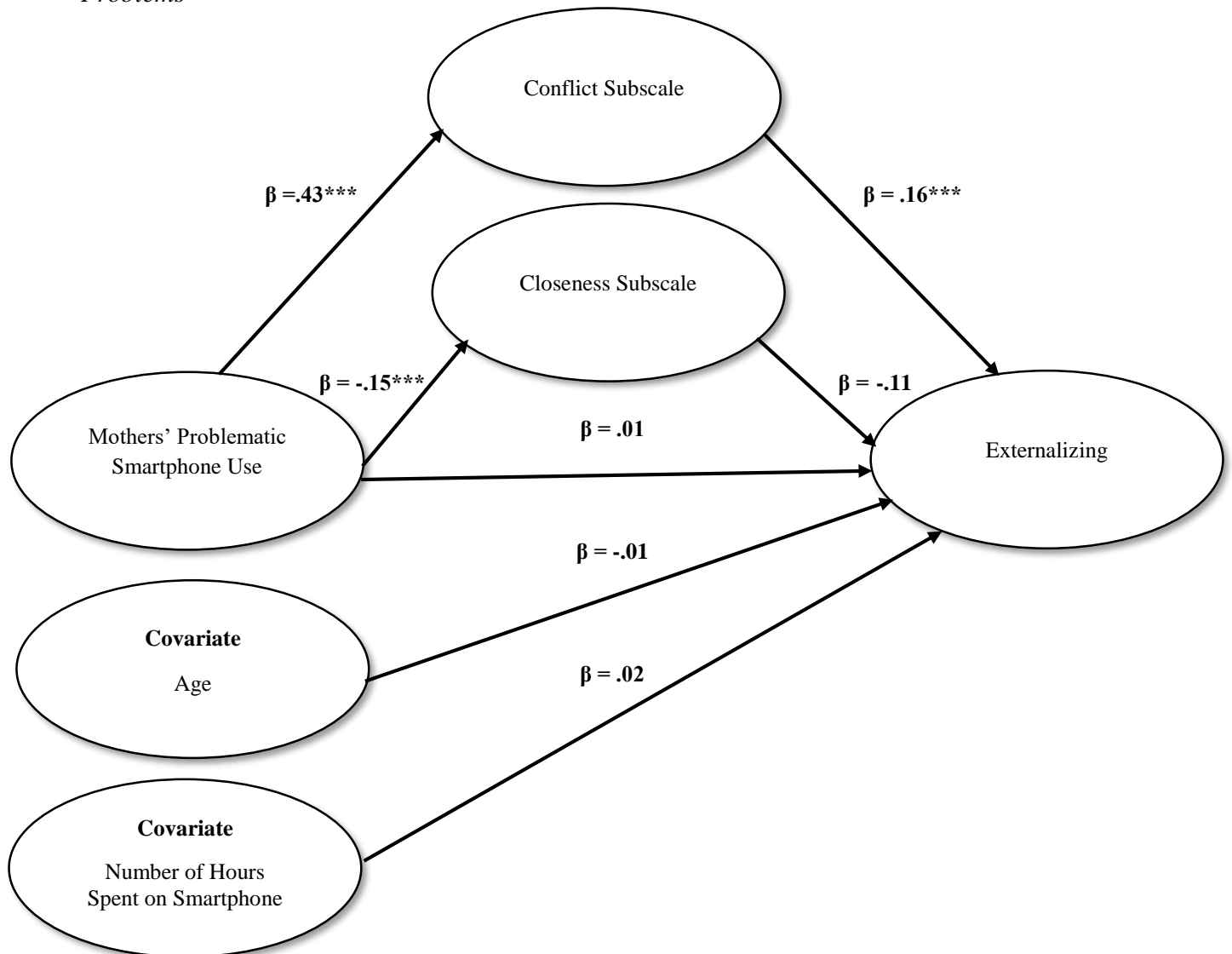


Indirect effect of conflict domain of mother-child relationship on maternal perception of child internalizing behavioral problems ($\beta = .06$) is significant: 95% CI = (.03, .11)

Indirect effect of closeness domain of mother-child relationship on maternal perception of child internalizing behavioral problems ($\beta = .01$) is non-significant: 95% CI = (-.01, .04)

Figure 3.2

Emerged Mediation Model showing Mother-Child Relationship as a Mediator between Mothers' Problematic Smartphone Use and Maternal Perception of Child Externalizing Behavioral Problems



Indirect effect of conflict domain of mother-child relationship on maternal perception of child externalizing behavioral problems ($\beta = .07$) is significant: 95% CI = (.03, .11)

Indirect effect of closeness domain of mother-child relationship on maternal perception of child externalizing behavioral problems ($\beta = .02$) is non-significant: 95% CI = (-.01, .04)

Chapter IV

Discussion

The objective of the current study was to examine the correlation between problematic smartphone use among mothers, mother-child relationships, and maternal perception of child behavioral problems. The present study also investigates the potential mediating effect of the mother-child relationship on the association between mothers' problematic smartphone use and their perception of their child's behavioral difficulties.

Correlates of Maternal Perception of Child Behavioral Problems

The findings of the research offer corroborative proof for three principal outcomes. First, mothers' problematic smartphone use had a significant positive relationship with the conflict dimension of the mother-child relationship but a significant negative relationship with the closeness dimension. Second, there is a positive relationship between the conflict dimension of the mother-child relationship and maternal perception of child behavioral problems. In contrast, the closeness dimension of the mother-child relationship had a negative relationship with the latter. Third, a significant positive relationship exists between mothers' problematic smartphone use and their perception of behavioral problems in their children.

This pattern of results is consistent with the previous literature, which indicates that parents' problematic technology use can lead to behavioral problems in children, specifically when it hinders parent-child interactions. Additionally, research suggests that increased parent-child interactions are associated with reduced behavioral issues in children (Kim et al., 2022; Carson & Kuzik, 2019; McDaniel & Radesky, 2017; Poulain et al., 2019; Sundqvist et al., 2020). Possible explanations for the associations between mothers' problematic media use and their

children's behavioral difficulties include that when a parent is frequently preoccupied with their phone or computer, they may not entirely engage in their interactions with their child. Hence media use reduces mothers' attention and responsiveness and also the number of meaningful interactions they have with their child, including play time (Hiniker et al., 2015). Children may become acclimated to not receiving parental attention, and experiencing a sense of neglect, leading to emotions such as frustration, anger, and detachment from the parent, which can result in behavioral issues such as ADHD symptoms, externalizing behaviors, as well as lower prosocial behaviors which include but are not limited to acting out, outbursts, or withdrawal (Radesky et al., 2015; Hiniker et al., 2015; Radesky et al., 2014; McDaniel & Radesky, 2018). On the other hand, frequent parental interaction with children has been associated with reduced behavioral problems in children, which was also corroborated by the results of the current study. It is likely because children feel more supported and validated when their parents are present and engaged with them. Positive behaviors such as empathy, self-regulation, and social skills are essential for healthy development, which can be fostered when parents spend more quality time with their children.

The finding can be explained through attachment theory, which posits that a child's emotional and social development is affected by the strength of his or her bond with the primary caregiver, often the mother (Bowlby, 1958). It helps explain how a mother's problematic smartphone use might influence her child's behavior. According to attachment theory, a secure attachment between a mother and child is defined by the child's confidence that their parent will be present and responsive to their needs, which is crucial for successful social and emotional development. Problematic smartphone use, on the other hand, may interfere with a mother's capacity to be present and attentive to her child's needs. For example, suppose she is regularly

distracted by her phone. In that case, she may miss significant cues from children or be unable to give emotional support, resulting in undesirable behaviors in the child.

Indirect Effect of Mother-Child Relationship on Maternal Perception of Child Behavioral Problems

The research employed a mediation model to examine the role of the mother-child relationship as a mediator between problematic smartphone use by mothers and maternal perception of child behavioral problems. The findings, shown in Table 3.3, revealed that the two dimensions of mother-child relationship had distinct roles in mediating the association between problematic smartphone use and maternal perception of child behavioral problems. The conflict dimension of the mother-child relationship significantly mediates the relationship between problematic smartphone use and maternal perceptions of internalizing and externalizing behavioral problems in children, however, the closeness dimension does not significantly mediate this relationship.

The results of this study appear to reflect the findings of McDaniel and Radesky (2017), who suggest that disruptions in parent-child interactions mediated the association between mothers' use of media and externalizing and internalizing problem behavior in children aged one to five. In another study, excessive maternal screen time and a reduced frequency of parent-child interactions were each independently linked with more behavioral difficulties in children, including conduct-related issues, hyperactivity, and problems with emotion such as sadness and depressive mood (Poulain et al., 2019). This association can be explained through findings of another study which reported that mothers who were highly dependent on their smartphones engage in negative parenting or display parenting attitudes and behaviors that are passive such as rejection, coercion, and being chaotic, in turn triggering problem behaviors in children such as

aggression (Kim et al., 2020). A literature review by Kildare and Middlemiss (2017) discovered that excessive use of phones by parents led them to become less sensitive and receptive to their children, resulting in poor child-parent relationship. Maternal smartphone dependence has also been observed to raise parental stress, which leads to parent-child conflict.

Parent-child conflict is a component of the parent-child relationship characterized by disruptive or hostile interactions in which both the parent and child exhibit negative behaviors and emotions. The results of previous studies indicated that parent-child conflict was related to poor childhood adjustment, including more significant levels of externalizing and internalizing behavioral problems, a lower level of social competency, and worse performance in school (Weaver et al., 2014). Characteristics of mother-child conflict, namely inconsistency and average negativity, positively correlate with child behavioral problems (Villarreal et al., 2021). Burt et al.'s (2005) research pointed towards a more specific finding that a bidirectional association exists between parent-child conflict and childhood externalizing symptoms. In other words, greater levels of parent-child conflict predicted more significant levels of externalizing symptoms and vice versa. Another research by Lougheed et al. (2021) validates the results of the present study by establishing the correlation between mother-child conflict and child internalizing problems over time; more significant conflict between mother and child at age five, leading to more significant internalizing problems at age eight.

The quality of relationships between parents and children (whether based on conflict or closeness) and how these ties may influence a child's development are better understood within the context of attachment theory. The most predominant theory on parent-child relationships contends that children have a single, close relationship with one attachment figure, usually their mother. This close bond is essential to a child's emotional and social growth (Grant & Carlson,

2016). Studies that have revealed that mothers' problematic smartphone use may have severe consequences for their relationships with their children and lead to behavioral issues in their offspring reported that these mothers had lower levels of parental responsiveness and sensitivity, two critical factors in a secure attachment relationship. Thus, hyperactivity, emotional difficulties, and conduct problems were more common among children whose mothers engaged in problematic smartphone use. Additionally, literature has demonstrated that maternal behavior, characterized by affection and positive regard expressions, is a significant predictor of children's attachment security. It, in turn, is a predictor of their psychosocial functioning. More specifically, children who exhibit more secure attachments with their mothers demonstrate superior social competence, lower levels of anxiety and depression, and fewer behavioral issues than those who exhibit insecure attachments

Pakistan is a collectivist culture in which family and community ties are highly prized. Throughout history, man has been viewed as the provider, and caregiver roles have been associated with women. Women are expected to remain at home and perform all domestic and parental duties. In this framework, the mother's role is seen as critical for the raising children and socialization of children (Rass & Salahuddin, 2021). Pakistani mother-child relationships are profoundly influenced by culture. Mothers are supposed to prioritize the needs and well-being of their children before their own. As a result, in this cultural setting, mothers' problematic smartphone use may be seen negatively as disregarding needs of their children and straying from conventional maternal duties.

Numerous religious practices and social levies permeate Pakistani culture. Families, and parents in particular, are crucial because they not only provide the child with sustenance and nourishment, but they also cover all educational and other expenses until the child enters

professional life and sometimes even longer. In cultural contexts, parents are exclusively responsible for the upbringing of their offspring, while children are obligated to show deference and compliance towards their parents. In the event of conflicting disputes between children and parents, the child is expected to give in to the parents' demands regardless of the child's emotions. These unresolved emotions and conflicts are sufficient for developing neurotic behavior characterized by aggression and depressive symptoms. It is also noted in Pakistani literature that certain levels of parent-child conflicts may be more strongly associated with the development of behavioral problems, such as hostility or depression. (Naz et al., 2016).

Strengths

To the best of my knowledge, the current study embodies particular strengths, including being the first of its kind in Pakistan, which employed parallel mediation analysis to assess the relationship between mothers' problematic smartphone use, mother-child relationship, and maternal perception of child behavior problems. Furthermore, it also controlled for demographic variables, which was done to enhance the study's external validity by limiting the effect of confounding variables. An example of this was taking only housewives as participants, which would ensure that smartphone use was not for work purposes. Another variable that was controlled was limiting the number of children to three. It would ensure that limited interactions with children were not due to having more number of children.

Limitations

Although the present study supports the hypotheses presented and led to significant results, it is appropriate to recognize potential limitations. The study employed a correlational research design; hence conclusive results about the causal inferences among the measured

variables cannot be drawn. It also used self-report measures that have a high risk of desirability bias rather than experimental or observational methods (as used in previous studies), which might have yielded more valid results. Moreover, mothers' perception of a child's behavioral problems might be subjective, and it would have been better to ask the child themselves.

Conclusion

Despite its limitations, this study has elucidated the complex relationships between mothers' problematic smartphone use, mother-child relationships, and maternal perception of child behavioral problems. The research aligned with the previous findings and indicated that mothers' problematic smartphone use was significantly and positively correlated with conflict and negatively correlated with the closeness domain of the mother-child relationship. The study also found that the conflict domain of the mother-child relationship had a significant and positive relationship with maternal perception of child behavioral problems. The closeness domain had a significantly negative relationship with maternal perception of child behavioral problems. A significant positive correlation existed between mothers' problematic smartphone use and maternal perception of child behavioral problems. The conflict domain of the mother-child relationship emerged as a significant mediator between mothers' problematic smartphone use and maternal perception of child behavioral problem

Future Implications

Regarding future research, it would be beneficial to expand upon the present results by investigating the viewpoint of children. The present study results are based on maternal reports of children's behavior. However, it is imperative to consider the child's individual experiences and perceptions of their own behavior. Consequently, incorporating a self-report questionnaire

for children in future research endeavors would yield significant perspectives on their behavioral issues.

Implications of current research findings can help mental health practitioners realize the importance of looking into variables associated with the mother, including their problematic smartphone use (leading to low levels of sensitivity and responsiveness) and conflict in mother-child relationships when assessing children with internalizing and externalizing behavioral problems as findings from the present study demonstrate that being present and responsive to children's needs, is crucial for their behavioral adjustment.

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[Pianta/fbfff730fcf8c6b490a34714271325c3e7c44d73](https://www.semanticscholar.org/paper/Mothers%E2%80%99-and-fathers%E2%80%99-perceptions-of-conflict-and-Driscoll-Pianta/fbfff730fcf8c6b490a34714271325c3e7c44d73)

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Appendix A

Questionnaire Permission Forms

Pianta, Robert C (rcp4p) <rcp4p@virginia.edu> 3 September 2022 at 13:33
To: Anosha Amir <noshposh1999@gmail.com>

Thank you for your interest in using the CPRS in your study. You may find the relevant materials if you go to the page linked below and look under 'measures'. I recommend you use the short form of 15 items and you will find the scale and scoring guide on the site

Robert C. Pianta, Ph.D.

*Batten Bicentennial Professor of Early Childhood Education
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Kwon Min <200032003@hanmail.net>
To: Anosha Amir <noshposh1999@gmail.com>

5 September 2022 at 05:13

Dear,

I'm Min Kwon, first author of the SAS and SAS-SV.

Thank you for the interest in Smartphone Addiction Scale.

You can use my tools.

The SAS consists of 33 questions and is grouped into six subscales, all weighted equally on a 6-point scale.

The six subscales' scores are summed up to yield a total SAS score with a 33–198 range, where a higher score indicates more serious smartphone addiction.

Cut-off of the SAS has not been proven yet, and you can do the comparison on the smartphone addiction severity.

The SAS-SV consists of 10 questions without subscales, and all weighted equally on a 6-point scale. And the scale is cut-off value of 31 in boys and cut-off value of 33 in girls.

I attach the material you ask me and you can review this information through to attach paper.

Please let me know about the results of future studies.

Good luck for your study and keep me posted of your progress.

Best Regards,

MIN KWON, RN, PhD.

Assistant Professor

Department of Nursing, The University of Suwon

Youthinmind <support@youthinmind.com>
To: Anosha Amir <noshposh1999@gmail.com>

3 September 2022 at 11:50

Dear Anosha,

Thank you for your interest in the SDQ.

All information you need is on our website.

If you want to collect data using the paper questionnaires (pen and paper method), you are welcome to download them from our website, exactly as found on our website (absolutely no modifications to the SDQ are allowed): <https://sdqinfo.org/py/sdqinfo/b3.py?language=Urdu>

We recommend that you register for scoring paper versions of the SDQ directly via this email: sdqplus@youthinmind.com

Our online scoring is not free (US\$ 0.25 per SDQ scored) but tried and tested, with a track record of accurately scoring well over half a million SDQs per year. We don't recommend hand scoring: it is prone to human error and generates an inferior report.

You would need to register for scoring SDQ via our scoring website to register and then score the SDQ using our scoring system in English.

For more information see: <https://admin.sdqscore.org>

If you would like to make your own electronic/online versions, then you would need to buy a license from us to create your own electronic version of the SDQ and get your own IT people to develop a web-based system for administering and scoring SDQs. We would need to review your electronic version of the SDQ before you are authorized to use it.

Let me know if you want to find out more about our online licensing.

Best wishes,
Helena Hamilton
Youthinmind

[Quoted text hidden]

Appendix B

Informed Consent Form

This study aims to examine the mediating role of mother-child relationship between mothers' problematic smartphone use and maternal perception of child behavior problems.

NAME OF THE RESEARCHER: Anosha Amir

RESEARCH TOPIC: Mothers' Problematic Smartphone Use, Mother-Child Relationship and Maternal Perception of Child Behavior Problems

DEGREE PROGRAM: BSc. Honors Applied Psychology

UNIVERSITY: Kinnaird College for Women University, Lahore

SUPERVISOR'S NAME: Miss Sara Asad, Lecturer at Department of Applied Psychology, Kinnaird College for Women University, Lahore.

Selection basis:

Mothers aged 18-45 who are housewives and own smartphones are required. These mothers must have a minimum of one and a maximum of three children and at least one child of theirs must be between the ages of 3-11. They must be of Pakistani origin and possess ability to read and comprehend in English. The selected participants must not be physically disabled, divorced or separated, have diagnosed psychotic disorders or have children with developmental disorders (e.g., intellectual disability, autism spectrum disorder, cerebral palsy, etc.).

Time Duration:

About 15 to 20 minutes of your time is going to be needed for this.

Confidentiality:

The Researcher will not disclose your name and will only utilise any data collected exclusively for academic reasons.

Voluntariness:

Your participation in this study is fully optional; you are under no obligation to take part in this study.

Withdrawal:

You are free to leave the study at any time, without any repercussions.

Whom to Contact:

Questions about the study will be addressed by the Researcher. You can also reach them at noshposh1999@gmail.com.

I have fully comprehended all of the research's terms and conditions. I have been granted the authority to answer all of my research-related questions. I willingly consent to participate in the study. I have been guaranteed that my privacy would not be violated. I am informed of my right to withdraw at any time without penalty. I now understand how the data will be put to use in research, publications, discussions, and archives. Both the researcher and I are willing to sign and date this form of informed consent.

Agree

Appendix C

Sample Copy of Questionnaire

Demographic Information Sheet

1. What is your age (in years)?

2. What is the highest degree or level of education you have attained (e.g. Bachelors, Masters etc.)?

3. What is your nationality

Pakistani

Other _____

4. What religion do you identify with?

Islam

Christianity

Hinduism

Other _____

5. Which family system do you live in

- Joint
- Nuclear

6. What is your estimated per month family income (in PKR)?

7. Are you a housewife?

- Yes
- No

8. Total number of children (in digits)?

9. Number of children that are within the age bracket of 3-11 years?

10. Do you own a smartphone?

- Yes
- No

11. Average number of hours(daily) spent on your Smartphone?

12. How satisfied do you think your husband is with your daily phone use?

- Very unsatisfied
- Unsatisfied
- Neutral
- Satisfied
- Very satisfied

13. Do you have any physical illness?

- Yes
- No

If yes, then Specify

14. Do you have any psychological illness diagnosed by a mental health professional?

- Yes
- No

If yes, then specify

15. Does your child/children that falls within the age bracket of 3-11 years have a physical disability

Yes

No

If yes, then specify

16. Does your child/children that falls within the age bracket of 3-11 years have a psychological illness diagnosed by a mental health professional?

Yes

No

If yes, then specify

Smartphone Addiction Scale-Short Version

English Version of SAS-SV

Items	Strongly disagree	Disagree	Weakly disagree	Weakly agree	Agree	Strongly agree
1 Missing planned work due to smartphone use	1	2	3	4	5	6
2 Having a hard time concentrating in class, while doing assignments, or while working due to smartphone use	1	2	3	4	5	6
3 Feeling pain in the wrists or at the back of the neck while using a smartphone	1	2	3	4	5	6
4 Won't be able to stand not having a smartphone	1	2	3	4	5	6
5 Feeling impatient and fretful when I am not holding my smartphone	1	2	3	4	5	6
6 Having my smartphone in my mind even when I am not using it	1	2	3	4	5	6
7 I will never give up using my smartphone even when my daily life is already greatly affected by it.	1	2	3	4	5	6
8 Constantly checking my smartphone so as not to miss conversations between other people on Twitter or Facebook	1	2	3	4	5	6
9 Using my smartphone longer than I had intended	1	2	3	4	5	6
10 The people around me tell me that I use my smartphone too much.	1	2	3	4	5	6

Child Parent Relationship Scale-Short Form

Definitely does not apply	Not really	Neutral, not sure	Applies somewhat	Definitely applies
1	2	3	4	5

1. I share an affectionate, warm relationship with my child.	1	2	3	4	5
2. My child and I always seem to be struggling with each other.	1	2	3	4	5
3. If upset, my child will seek comfort from me.	1	2	3	4	5
4. My child is uncomfortable with physical affection or touch from me.	1	2	3	4	5
5. My child values his/her relationship with me.	1	2	3	4	5
6. When I praise my child, he/she beams with pride.	1	2	3	4	5
7. My child spontaneously shares information about himself/herself.	1	2	3	4	5
8. My child easily becomes angry at me.	1	2	3	4	5
9. It is easy to be in tune with what my child is feeling.	1	2	3	4	5
10. My child remains angry or is resistant after being disciplined.	1	2	3	4	5
11. Dealing with my child drains my energy.	1	2	3	4	5
12. When my child is in a bad mood, I know we're in for a long and difficult day.	1	2	3	4	5
13. My child's feelings toward me can be unpredictable or can change suddenly.	1	2	3	4	5
14. My child is sneaky or manipulative with me.	1	2	3	4	5
15. My child openly shares his/her feelings and experiences with me.	1	2	3	4	5

Strengths and Difficulties Questionnaire

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restless, overactive, cannot stay still for long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often complains of headaches, stomach-aches or sickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shares readily with other children (treats, toys, pencils etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often has temper tantrums or hot tempers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rather solitary, tends to play alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally obedient, usually does what adults request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many worries, often seems worried	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helpful if someone is hurt, upset or feeling ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Constantly fidgeting or squirming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has at least one good friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often fights with other children or bullies them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often unhappy, down-hearted or tearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally liked by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easily distracted, concentration wanders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nervous or clingy in new situations, easily loses confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kind to younger children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often lies or cheats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picked on or bullied by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often volunteers to help others (parents, teachers, other children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thinks things out before acting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steals from home, school or elsewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gets on better with adults than with other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many fears, easily scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sees tasks through to the end, good attention span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix D

SPSS Outputs

Cronbach Alpha

SAS-SV

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.874	.875	10

CPRS-SF (Conflict)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.855	.854	8

CPRS-SF (Closeness)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.668	.677	7

SDQ (Internalizing)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.724	.741	10

SDQ (Externalizing)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.680	.697	10

Pearson Product Moment Correlation

		Correlations				
		Mean of SAS_SV	Mean of Conflict Subscale of CPRS	Mean of Closenes Subscale of CPRS	Mean of Internalizing Subscale of SDQ	Mean of Externalizing Subscale of SDQ
Mean of SAS_SV	Pearson Correlation	1	.558**	-.460**	.415**	.408**
	Sig. (1-tailed)		.000	.000	.000	.000
	N	100	100	100	100	100
Mean of Conflict Subscale of CPRS	Pearson Correlation	.558**	1	-.501**	.534**	.574**
	Sig. (1-tailed)	.000		.000	.000	.000
	N	100	100	100	100	100
Mean of Closenes Subscale of CPRS	Pearson Correlation	-.460**	-.501**	1	-.400**	-.443**
	Sig. (1-tailed)	.000	.000		.000	.000
	N	100	100	100	100	100
Mean of Internalizing Subscale of SDQ	Pearson Correlation	.415**	.534**	-.400**	1	.391**
	Sig. (1-tailed)	.000	.000	.000		.000
	N	100	100	100	100	100
Mean of Externalizing Subscale of SDQ	Pearson Correlation	.408**	.574**	-.443**	.391**	1
	Sig. (1-tailed)	.000	.000	.000	.000	
	N	100	100	100	100	100

** . Correlation is significant at the 0.01 level (1-tailed).

Mediation Analysis

OUTCOME VARIABLE:						
Conflict						
Model Summary						
	R	R-sq	MSE	F	df1	df2
	.579	.335	.499	16.118	3.000	96.000
						p
						.000
Model						
	coeff	se	t	p	LLCI	ULCI
constant	.710	.631	1.126	.263	-.542	1.963
SAS_SV	.428	.070	6.109	.000	.289	.567

OUTCOME VARIABLE:

Closenes

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.573	.329	.114	15.677	3.000	96.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	5.425	.302	17.951	.000	4.825	6.025
SAS_SV	-.147	.034	-4.393	.000	-.214	-.081

OUTCOME VARIABLE:

Internal

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.575	.330	.079	9.274	5.000	94.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.249	.549	.454	.651	-.841	1.339
SAS_SV	.041	.034	1.214	.228	-.026	.108
Conflict	.149	.042	3.517	.001	.065	.233
Closenes	-.082	.088	-.930	.355	-.257	.093
Age	-.001	.006	-.093	.926	-.012	.011
Hrs_phn	.021	.018	1.189	.237	-.014	.056

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TOTAL	.076	.020	.038	.116
Conflict	.064	.020	.027	.104
Closenes	.012	.013	-.010	.041

OUTCOME VARIABLE:
Conflict

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.579	.335	.499	16.118	3.000	96.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.710	.631	1.126	.263	-.542	1.963
SAS_SV	.428	.070	6.109	.000	.289	.567

OUTCOME VARIABLE:
Closenes

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.573	.329	.114	15.677	3.000	96.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	5.425	.302	17.951	.000	4.825	6.025
SAS_SV	-.147	.034	-4.393	.000	-.214	-.081

OUTCOME VARIABLE:
External

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.632	.399	.061	12.488	5.000	94.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.908	.482	1.885	.063	-.049	1.866
SAS_SV	.012	.030	.390	.697	-.047	.070
Conflict	.158	.037	4.261	.000	.084	.232
Closenes	-.108	.078	-1.398	.165	-.262	.046
Age	-.010	.005	-1.894	.061	-.020	.000
Hrs_phn	.016	.015	1.055	.294	-.014	.047

Indirect effect(s) of X on Y:				
	Effect	BootSE	BootLLCI	BootULCI
TOTAL	.084	.021	.047	.127
Conflict	.068	.019	.033	.108
Closhenes	.016	.013	-.008	.044

Appendix E

Plagiarism Report

Second Chance June Defense 2023

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