

Understanding Pakistani Mothers' Use and Non-Use of Screen Media-based Devices: Gratifications, Strategies, and Design Implications

Neelma Bhatti
Habib University
Karachi, Pakistan
neelmabhatti@gmail.com

Aisha Abdul Qadir*
Habib University
Karachi, Pakistan
aa07906@st.habib.edu.pk

Qurba Mushtaque*
Habib University
Karachi, Pakistan
qm08232@st.habib.edu.pk

Muhammad Huzaifah Riaz*
Habib University
Karachi, Pakistan
mr07741@st.habib.edu.pk

ABSTRACT

This study explores how Pakistani mothers, as primary caregivers, navigate the use and non-use of screen media-based devices (SMDs) in their parenting practices. Grounded in the *uses and gratifications theory*, we explore how mothers seek specific gratifications through their children's use of SMDs, and how unmet needs prompt them to adopt strategies for limiting SMD use. Through an analysis of interview and survey data, we present and discuss different patterns of SMD use among mothers, emphasizing their needs for religious education, cultural enrichment, family bonding, and early learning. These findings reveal a trend toward value-driven SMD use. We further compare these strategies with global digital parenting practices and identify opportunities for designing culturally relevant technological solutions to support digital parenting in this space.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI**.

KEYWORDS

digital childcare, digital parenting, screen media-based devices, uses and gratifications, child-computer interaction

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1 INTRODUCTION

The role of screen media-based devices (SMDs) in parenting has received growing interest in Human-Computer Interaction (HCI), and

particularly, parent-child computer interaction research [5–7, 53]. Their use by children as young as five year olds has become a worldwide practice [12], raising increasing parental concerns as more children engage with these devices during early childhood. This reluctant acceptance of SMDs in parenting led us to explore their role in digital parenting in the global south, with the lens of use and non-use [41] within HCI. We further ground our investigation in the uses and gratifications theory, arguing that parents seek certain gratifications through their children's use of SMDs. When these gratifications are unmet, parents are compelled to pursue strategies to regulate and promote the non-use of SMDs by their young children. Thus, we discuss the various uses of SMDs, the gratifications sought through their use, and ultimately, the strategies to limit or encourage the complete non-use of SMDs.

While research has examined the digital parenting behaviors of caregivers in various contexts [18–20, 27], the experiences of mothers in the global south have received limited attention. Our study is set in Pakistan, where mothers are often the primary caregivers, playing a key role in raising children and managing the household. They typically bear the primary responsibility for childcare, which encompasses teaching, education, and overall welfare of the child. This role is shaped by cultural, religious, and social factors that influence mothers' parenting practices [24]. Despite facing personal limitations in technology use [39], Pakistani mothers employ various strategies to manage their children's use of SMDs, balancing their traditional roles with contemporary demands. This interplay between cultural expectations, children's ages, and socio-economic context influences their use and non-use of SMDs as parenting tools, and the gratifications they seek from their children's use of these devices [6]. Understanding these specific gratifications is crucial for designing culturally relevant and effective technology solutions to support their parenting tasks.

Through this research, we aim to provide a comprehensive understanding of Pakistani mothers' SMD use and non-use with their young children. By using a mixed-methods approach, we seek to uncover the nuanced decision-making processes, sought gratifications, and broader trends, ultimately guiding the design of SMDs and digital media that align with the needs and preferences of mothers in the context of parenting in Pakistan.

*These authors contributed equally to this work.

1.1 Research Question and Contributions

Through this research, we aimed to address the overarching question: *How do Pakistani mothers' use and non-use of SMD as parenting assistants differ from and resemble those of other caregivers globally?* Within this framework, we explored the following sub-questions:

- (1) What **uses and gratifications** do Pakistani mothers and their young children seek from SMDs?
- (2) How do Pakistani mothers **strategize the use and regulation of SMDs** in their children's digital parenting?

Through a detailed analysis of the role of SMDs in Pakistani mothers' parenting practices, we contribute to HCI and Parent-Child Computer Interaction (PCCI) literature by offering insights into the common uses and gratifications sought by both mothers and children in Pakistan. By juxtaposing these practices with global digital parenting trends, we provide valuable implications for the design of culturally relevant technologies and digital media that cater specifically to the needs of this parent-child dyad.

2 RELATED WORK

In the subsequent sections, we situate our work within existing research on mothers' use and non-use of SMDs in parenting and examine how the uses and gratifications theory applies to this context. We focus on the motivations and gratifications parents seek through their children's interaction with these devices to better inform our study.

2.1 Use and Non-Use of SMDs in Parenting

Many parents believe that parenting today is significantly more demanding than in the past [3]. To manage daily tasks such as cooking, and household chores, or when they are unable to give their children undivided attention, parents often resort to using SMDs to occupy their children [6]. Among these SMDs, television remains the most common, with 88% of parents reporting that their child interacts with it. Additionally, 67% of parents report that their child uses or interacts with a tablet computer, while 60% report the same for smartphones [2].

The extent of SMD use allowed by parents can vary based on the child's age and developmental stage. As children grow and mature, parents recognize the need to adjust rules, shifting focus toward educating their children about digital safety while giving them more autonomy in accessing and using SMDs [46]. However, transitioning from use to non-use of SMDs can be challenging. A significant number of parents reported that their child throws a tantrum, whines, or resists ending SMD use at least occasionally, with the transition almost always ending in a struggle [21, 33]. Building on studies that emphasize the benefits of limiting SMD use, this research investigates the specific parental mediation strategies employed by Pakistani mothers.

2.2 Role of SMDs in Pakistani Mothers' Parenting

Studies have explored Pakistani parents' perceptions of mobile device use among infants under two years old, revealing both positive and negative outcomes shaped by parenting experiences

and challenges, with implications for screen time guidelines, childcare practices, and neurodevelopmental assessments [26]. However, there is limited research on how mothers in Pakistan manage SMD use within the country's unique cultural and socioeconomic context. Pakistani mothers, who often bear the primary responsibility for childcare within a framework of cultural, religious, and social norms, are essential to managing their children's use of SMDs. Juggling household duties and childcare, especially in joint-family living, leads them to use SMDs to engage their children. As a result, children average three hours of screen time per day, far above the recommended one hour, with only a few mothers aware of these guidelines [9]. These cultural expectations place significant emphasis on women's roles in nurturing and overseeing their children's education and health, often leaving them to navigate these responsibilities with limited external support [52]. Working mothers, in particular, face the added challenge of balancing their careers and family life, resulting in emotional and physical stress [25]. Given their critical role as primary caregivers, particularly in cultural settings like Pakistan, where they are central to child education and household management, this research explores their strategies to navigate the use of SMDs. This includes decisions about allowing SMD use for their children, the influence of other family members on SMD usage, the strategies mothers employ to limit SMD use when they disapprove, and the familial support or challenges they face while implementing these strategies.

2.3 Gratifications Sought by Mothers and Children Through the Use of SMDs

Uses and gratifications theory has evolved significantly in the 21st century to address the complexities introduced by new media technologies, emphasizing how individuals actively seek out the media to fulfill specific needs and gratifications [40]. In the context of parenting, technology serves as a tool for enhancing mothers' sense of confidence and control. Studies show that greater marital harmony and advanced occupational identity status are linked to more confident parenting, highlighting the importance of a supportive environment for achieving these gratifications [15]. Dysfunctional parental attachment is another significant factor influencing adolescents' motives for internet use and the risk of internet addiction, emphasizing the importance of healthy parent-child relationships for achieving desired gratifications through technology use [45]. These studies have focused on the parent-child dynamics, and uses and gratifications of technology use by adolescents, with a special focus on internet use. We orient our work towards the use of SMDs, and the digital media hosted on them.

Although uses and gratification theory has provided insight into media consumption motivations, existing literature on SMDs as parenting aids [6, 19, 20] has yet to fully address the digital parenting practices of Pakistani mothers, who are the primary caregivers of their young children. Understanding the gratifications sought by Pakistani mothers during their children's use of SMDs is essential for designing culturally relevant technology solutions. With this study, we aim to uncover the specific gratifications mothers seek through their own, and their young children's use of SMDs, to support and enhance their parenting role. We leverage the theory to examine the factors influencing parental decision-making and

SMD use, and to uncover insights into how these practices affect child development and family dynamics in Pakistani households to identify opportunities in this technology design space.

3 METHODS

This study employed a mixed-methods research design to explore how mothers navigate the use and regulation of SMDs for their children under five years of age. Data was collected through semi-structured interviews to gain in-depth insights into mothers' decision-making strategies, and through an online survey to identify broader trends in the gratifications sought through SMD use and non-use.

3.1 Data Collection

We conducted interviews with 22 Pakistani mothers of children aged 1 to 5, recruited via social media, word-of-mouth, and snowball sampling. The interview questions were designed to explore the attitudes, behaviors, and strategies of mothers and their young children regarding SMD use. The guide was informed by key themes in the literature, such as SMD use duration, content type, parental monitoring, safety concerns, and the gratifications mothers seek through their children's use of SMDs. An honorarium of PKR 2500 (approximately \$10) was provided to each participant as a token of appreciation for their time. Since we aimed to recruit a diverse sample of mothers for interviews, we opted to conduct the interviews online so that mothers from different cities could participate. Out of the 22 interviews, 20 were conducted online via Zoom. One in-person interview was with a house helper who lacked digital literacy and preferred face-to-face interaction. The other in-person interview was with a co-worker of one of the researchers, who, being familiar with the interviewer, also opted for an in-person interview. Each interview lasted 20 to 60 minutes and was audio-recorded with the participant's consent. 21 out of 22 interviews were conducted in both English and Urdu based on participants' indication of being comfortable in conversing in both languages, while one was conducted completely in Urdu. Conducting the interviews online proved to be feasible and convenient, allowing participants to be comfortable while reducing logistical challenges and time constraints.

We also circulated an online survey¹ consisting of 58 questions, similar to those in the interviews but formatted as close-ended to reduce response time and encourage higher participation. The online survey was circulated on platforms such as Facebook and LinkedIn, as well as through personal contacts to allow broad and diverse responses. The survey remained open for ten days.

3.2 Approaching and Recruiting Mothers

We approached mothers of young children through their personal networks and social media postings, inviting them to participate in the interview study. The call for participation mentioned an equivalent of \$10 as a compensation for their time. Interested mothers were asked to complete a pre-survey asking them about the number and age of children, as well as their demographics, to screen participants. We received 34 completed pre-surveys, out of which we selected 22 mothers who met the inclusion criteria². Details

¹Online survey linked [here](#)

²Mothers who had children under the age of 5

about participating mothers are given in **Table 1**. While we asked for participant ages in the first two interviews, we stopped asking the remaining 20 participants about their ages after the second participant commented:

"It's just that, it is impolite to ask ladies about their age. It's not something confidential, I don't mind telling it, but for a recording and for a research purpose I would rather not."

3.3 Ethical Considerations

The study was reviewed, and the study protocol was approved by our institutional review board (IRB). Following due procedure, all participants were briefed about the purpose, time commitment, and potential risks and benefits associated with their participation, monetary compensation for participation in the interview, emphasizing that their participation was voluntary, and they could withdraw at any time. As an important aspect of our study was seeking and obtaining consent from participants, particularly seeking consent for participation in the interview study, consent for keeping the front camera on during interviews on Zoom, and consent for sharing pictures of children depicting their engagement with SMDs, we noted some interesting observations from the consent process below:

3.3.1 Consent for participation. Most mothers who completed the pre-study survey consented to participate in the study by understanding the study context, its aims and objectives, and the expected contributions. Some mothers even brought their own questions to seek clarification about the study. Notably, these mothers had completed higher education degrees and had some autonomy to make decisions about their participation. On the other hand, participants who belonged to the lower socio-economic class were curious whether the *interview* would be published in the newspaper or broadcast on radio or television, based on their understanding of the term. These participants were briefed about the nature of the study, referring to the *interview* as *conversation about their young children's use of SMD*, after which they felt comfortable and consented to participate.

3.3.2 Consent for being live on Zoom. Face-to-face online meetings, such as video conferencing, are often perceived as more intimate compared to other forms of digital communication. This is due to the ability to see facial expressions and body language, which enhances the sense of presence and emotional connection [43]. However, when asked to turn on their cameras to help establish rapport with the researchers, only 8 out of 20 mothers agreed to both using the camera and being recorded. Additionally, nearly all participants expressed discomfort with the possibility of a male interviewer and inquired whether any male members of the research team would be present during the interview. In light of this, 18 out of 20 Zoom interviews were conducted by female researchers. All participants consented to being audio-recorded.

3.3.3 Consent for sharing children's pictures. Towards the end of a few interviews, we asked the participants if they would be willing to share a picture of their child using SMD. We planned to include pictures with children's faces blurred out to visually depict how mothers and children use SMDs, which was explained to the

PID	Age (C)	Education (M)	Occupation (M)	Family Setup	Screen-time (C)
P1	4 y	Matriculation	Online Business	Joint	4
P2	3 y	Pursuing PhD	Working Woman	Joint	1.5
P3	3.5 y	Masters	Teacher	Nuclear	1
P4	4 y	-	Online work	Nuclear	1
P5	5 y	-	Housewife	Joint	7
P6	5 y	Double Masters	Martial Arts Teacher and Montessori Directress	Joint	2
P7	1.5 y	Bachelors	Housewife	Joint	0.75
P8	4 y	Bachelors	Housewife	Nuclear	1
P9	4.5 y, 3 m	Masters	Housewife	Joint	0.5
P10	1.9 y	Bachelors	Housewife	Joint	1
P11	2.5 y	Pursuing PhD	Professor	Nuclear	8
P12	3.5 y	Bachelors	Part-time consultant	Joint	3
P13	2.5 y	Pursuing MPhil	Clinic practitioner	Joint	2
P14	1.25 y	Matriculation	Housewife	Joint	0.75
P15	4 y, 1.5 y	Masters	Housewife	Nuclear	2
P16	4 y	Matriculation	Housewife	Joint	1
P17	4 y, 8 m	Masters	Housewife	Joint	2
P18	3 m and 5 y	High School	Housewife	Nuclear	4
P19	4 y	-	Graphic Designer	Joint	2
P20	5 y	PhD	Professor	Nuclear	4
P21	2 y and 5 y	-	Working Woman	Joint	3
P22	3.5 y	-	Housewife	Nuclear	2

Table 1: Participants' coded names alongside the ages of their children under 5 years. Screen time is self-reported and rounded to the nearest hour, with an average of 2.5 hours across all 22 participants. Notably, two participants (P2 and P11) were pursuing PhD, while one (P13) was pursuing an MPhil. Two participants chose not to disclose the nature of their work, while 5 did not disclose their academic qualifications (denoted by '-'). "C" denotes of Child, and "M" denotes of Mother.

participants beforehand. All the mothers were open to the idea and agreed to share their child's pictures. For example, P10 who didn't have a picture at the moment still agreed to share one later, saying: "I will have to look for it. As soon as I get it, I can give it to you. Tell me when you need it." These interactions initially suggested that the mothers were willing to contribute to the study, demonstrating a level of trust and collaboration with the researchers, as well as an understanding of the study's objectives and the significance of their contributions. However, none of the mothers ultimately shared a picture of their child with the research team, even after a reminder, which may imply that their agreement was influenced by social desirability bias [48] or concerns about privacy and digital sharing [29].

3.4 Data Analysis

For analyzing the interview data, three researchers anonymized and coded participants' names in the interview transcripts. Each interview was translated, transcribed, and proofread for accuracy by two researchers, with pairs alternating across different transcripts. Three researchers independently coded the 22 interview transcripts, with each transcript assigned to two researchers, resulting in each coder being responsible for coding 13 to 14 transcripts. This process resulted in a total of 44 coded transcripts. Inter-coder reliability was calculated by assessing the pairwise agreement between researchers, using the percentage of matching codes for jointly coded

transcripts. Cohen's Kappa was applied to adjust for chance agreement, yielding an overall inter-coder reliability of 80%, indicating a reasonable level of consistency in the coding process [13].

After coding, the researchers collaborated to create a **codebook**, ensuring there were no duplicate codes [16]. We then performed affinity mapping [17] (session visualized in figure 1). on the 59 axial codes identified during the transcript review to organize the open codes into clusters, facilitating the identification of connections and the combination of codes into broader, generalized categories or themes [4]. Through this process, we identified three main themes corresponding to our research questions:

- (1) Strategies to regulate or promote non-use of SMDs
- (2) Uses and gratifications of SMDs by mothers and young Children
- (3) Use and non-use of SMDs as parenting assistants in Pakistan vs globally.

4 INSIGHTS

In this section, we detail the influence of family members on children's use of SMDs, the gratifications sought by both mothers and children through SMDs, and the strategies mothers employ to regulate or discourage their use, as discussed in the interviews. While the mothers frequently referred to their child's SMD use as "screen time," we have replaced it with the term "SMD use" (except in direct quotes) for consistency throughout the analysis.



Figure 1: Affinity mapping session in progress. Top left: 59 axial codes pasted on the whiteboard; bottom left: three researchers reading, organizing, discussing, and reorganizing codes by themes; left: emerging themes after affinity mapping.

4.1 Parenting in Pakistan: Mothers as Primary Caregivers

In most households, mothers were the primary caretakers who made key decisions related to their children's use of technology, including screen time limits, content selection, and device permissions. Fathers often acknowledged this and supported these decisions, understanding the mother's closer day-to-day interaction with the child. For instance, P10 explained: "It all depends on me. I decide. My husband understands that he (child) is with me all day, I observe him more, and I know what things are happening. So if I say something, my husband agrees to it." However, this level of understanding was not consistent across all families. For instance, P13 shared a contrasting perspective, highlighting her disapproval for her husband's involvement in the decision-making, stating his own excessive use of SMDs around the child. P1 also mentioned how her mother-in-law, who lived with them, enforced gentle parenting, while her approach was more authoritarian when it came to handling her child's use of SMDs. She said:

"During the four years of his [child's] life, me and my mother-in-law never fought over anything, but we had huge fights over his use of SMDs. My mother-in-law is like: 'Don't even think about touching your kid. You can scold him and all but don't touch.' But I am very impatient and have very little tolerance, so we fought a lot. I told her that too much use of SMDs is not great for him. Ultimately, she saw the changes in his [child's]

behavior, so she kind of realized it. Now, we are on the same page, but we were not at some point."

Another important aspect we observed in the interviews was the influence of extended family on children and their upbringing. While some families were understanding and supportive, others were unintentionally influencing the children negatively. Mothers living in joint family setups often lacked control over the actions of other family members and could not prevent them from influencing their children. P19 reported how her child began to demand a mobile phone after seeing their cousins had one. A few more mothers shared similar concerns about grandparents and extended family allowing their children extra time for using SMDs as an act of love, which they often disapproved. P13 said: "My sister often gives my daughter a phone, thinking it is a way to show affection. But I don't see it that way. It's not love; it's actually harmful. By doing this, you are not helping the child; you are being an enemy to them." P22, whose 3.5-year-old child was on the autism spectrum and had a speech delay, described how her older children often had mobile phones in their hands. As a result, the 3.5-year-old also felt the need to use one when watching them.

P3, who formerly lived in a joint family setting, also commented "In a joint family, children are often given a lot of screen time to comfort or distract them. For example, if the child is crying or eating, a device is handed out. In such settings, you cannot really enforce your own rules because you must respect the elders and follow their way of doing things. However, in my own home, I follow my own rules and manage screen time as I see fit."

4.2 Uses and Gratifications of SMDs by Mothers and Young Children

The mothers in the study acknowledged that SMDs have become integral to their children's lives and their parenting. While they were aware of the consequences and wished to reduce SMD use, they often relied on SMDs to keep their children occupied, especially during household chores. By providing stimulating content like colorful cartoons and music, mothers used SMDs to capture their children's attention for longer periods. [28].

Gratifications Sought by Mothers

4.2.1 Religious Education. Religious values played a significant role in shaping Pakistani mothers' views on what media is appropriate and beneficial for their children's development. Mothers in our study prioritized using SMDs for religious education, viewing religious content as a key educational resource. This focus on learning extended beyond just educational values to include religious values, highlighting the important role religion plays in Pakistani households. This approach is not unique to Pakistan; around the world, many mothers view passing on their faith as an essential aspect of parenting [23]. P10, for example, emphasized religious content, preferring videos without music and carefully selecting YouTube videos like versions of Coco-Melon without instruments. Similarly, P16 stated:

"I used to play poems without music from Madni Channel on YouTube. I chose these because her father, who

is involved in Islamic missionary activities, avoids music. He would suggest playing something religious, like 'Allah Hoo Allah Hoo'³, so the kids could learn from it."

Another mother, P11, added: *"Instead of cartoons, he (child) watches programs like Lulu Kids, Arabic content, Bismillah⁴, and the Six Kalmas⁵. He's especially interested in the Bismillah program."* For mothers with lower levels of education and a strong religious orientation, SMDs are often used to provide both educational and religious content. The SMDs also helped mothers instill cultural and religious values in their children as well as give them important moral and ethical lessons through stories and characters they could relate to. As P23 shared:

"I encourage my kids to listen to 'Naat'⁶ and learn 'Kalma', as these have valuable (religious) lessons. I also use my mobile phone in their presence, so I sometimes play Naat or 'Labaik Allahuma Labaik'⁷ before switching to their cartoons. I want them to benefit from the mobile in a positive way."

4.2.2 Cultural Enrichment. Mothers also sought cultural enrichment and Urdu language learning from SMD use. The majority showed an aversion towards shows dubbed in the Hindi language, stating their preference for their kids to learn English, or at least Urdu instead of Hindi. P15 stated *"My elder one used to watch Co-melon and Quaid-e-Azam ki Baatein (Youtube Channel) but is now more into vlogs, which have become a trend. However, I strictly avoid Hindi-dubbed cartoons and streaming content. I don't allow that at all."* This aligns with research indicating that parents often perceive foreign-language media, especially Hindi-dubbed content, as a threat to their children's native language and cultural identity. They fear that it may undermine local cultural values and hinder language acquisition [30].

P13, who was a working woman, and had a non-supportive husband, would drop off her daughter at her mother's home during her clinic hours. She reported her daughter primarily being an Urdu content watcher, so she resorted to showing her Islamic content to have her watch what she considered *quality* or *valuable* content in Urdu after her failed attempts of showing her English content to help her develop her secondary language (English).

"I tried introducing her to English cartoons initially, but she wasn't interested. My (mother's and in-laws) family mostly speaks Urdu, so she naturally gravitated toward Urdu cartoons and poems. She's very fluent in Urdu and uses complex words you would not expect from a small child. Now, as she has learned to scroll, she watches reels, particularly those featuring a child named Anaya, and mimics sentences like 'aam le lo' (selling mangoes) and 'keile lelo.' (selling bananas.) I noticed she quickly

copies what she sees in these videos. To minimize this, I started showing her Urdu Islamic cartoons on a laptop, as she would not engage with English cartoons."

With vlogging being a popular content choice among children, P11 expressed a preference for foreign vloggers over local ones, appreciating their mannerisms and the opportunity for children to learn English:

"Vlad and Niki are very popular vloggers, and they engage in a lot of activities together. What I like is that they also teach good manners, like washing hands before eating. In comparison, I find Pakistani vloggers' style of vlogging quite different. The foreign vloggers focus on teaching positive things, and our children's English language skills also improve."

Despite children's enthusiasm for these vlogs, some mothers also had concerns about their impact. They worried that vlogs could influence their children's language, foster materialistic desires, and promote feelings of ingratitude. As P1 explained: *"I'm not really into vlogs, you don't learn much from them. I worry that when he (child) gets older, he might feel envious or ungrateful, thinking, 'I don't have those things, like big cars or fancy toys.' It concerns me that watching these vlogs might make him less appreciative of what he already has."* These maternal concerns are also supported by existing research, as Harsha Gangadharbatla's study found that 78% of children who watch vlogs are more likely to make purchase demands, with refusals often leading to tantrums, indicating that vlogs, particularly those featuring daily life or unboxing content, can foster materialism in children [31].

4.2.3 SMD-Facilitated Family Bonding. Mothers in our study sought to foster family connections and togetherness by allowing their children to use SMDs to stay connected with family and friends, reflecting the core values of Pakistani society. P6 shared: *"In my family, most of the male members, including my brother and cousins, work on merchant ships. They communicate with their children primarily through video calls."* As her husband was also in the Navy and often away from home, she emphasized that video calling plays a crucial role in keeping the family connected, allowing the father to maintain an emotional bond with his daughter despite his absence. This aligned with the research reporting mobile phones as the most common tool for keeping children connected with distant relatives, strengthening familial bonds, and providing a sense of closeness despite physical distance through video calls [32, 50].

As primary caregivers, mothers also frequently used SMDs to bond with their children. This aligns with global findings where parents engage in digital activities, such as playing video games, to strengthen relationships with their children [49]. For instance, P1 mentioned playing video games with her son by taking turns, while P20 highlighted watching TV together as a family. *"While I prepare breakfast, it is his father's responsibility to choose a movie everyone will enjoy. Once breakfast is served, we will continue watching the movie until it ends, even after we finish breakfast. Following that, there will be a discussion."* Mothers also co-watched educational media with the child, making them reflect on positive themes [8]. P2 mentioned:

³An Islamic devotional phrase meaning "God is." It combines "Allah" (God) and "Hoo" (He is). Often used in Sufism (a branch of Islamic mysticism focused on seeking deeper spiritual closeness to God through devotion, inner reflection, and love) chanting or prayer to signify God's presence.

⁴Commonly used Islamic phrase meaning "In the name of Allah"

⁵foundational statements in Islam related to faith, often taught to children.

⁶Islamic devotional poetry sung in praise of the Prophet Muhammad.

⁷A religious phrase often recited by Muslims during acts of worship, especially during the Hajj pilgrimage, translating to "Here I am, O Allah, here I am" to express complete submission and readiness to obey God's call.

Children's U&G of SMDs	Quote
Social Connection	P9: "She enjoys talking to her cousins, uncles, and aunts who are abroad on mobile. She gets happy and excited during video calls with them."
Parental Approval	P21: "At times if the kids want to make me happy they would play the recitation of Yaseen ⁸ "
Alleviating Boredom	P4: "When he says he's getting bored, I suggest he watch a show for 10 minutes and let him do so in front of me. He also asks if he can watch this content on his mobile phone."
Self-Expression	P1: "He likes to use Snapchat and often posts embarrassing stories. My friends end up texting and calling me, asking about what he has posted on my Snapchat."
Digital Creativity	P18: "My daughter enjoys creating art while watching sketching tutorials. I've encouraged her to use a drawing app on her phone, and now she often draws things digitally while following along with a drawing channel."
Entertainment	P15: " There's a new trend of family vlogs with kids, and some children really enjoy them. One vlog they particularly like features a family of four, Marwa and Abdul Rehman, who live in Dubai. They create short vlogs, and the kids are very interested in watching them."
Mealtime Diversion	P9: "Now, for example, we have to go to a party tonight. Now, at that party, I'm sure that five out of ten children will use the phone while eating. And then my daughter will bother me so much."

Table 2: Insights into the varied uses of SMDs by children: social connection, self-expression, entertainment, and the role of parental approval. The table also highlights the impact of technology on family dynamics and social settings. U&G denotes uses and gratifications.

"Recently, we had a very interesting learning experience from an episode of Blippi (educational show), where they explain how roads are constructed. It included a bulldozer and other machinery, which I found fascinating because I didn't know how these machines contribute to road construction. It was a valuable learning experience for both me and my child."

4.2.4 Early Learning and Development. Besides using SMDs as a source of distraction, many mothers preferred to use them for educational purposes. In the early (0-3) years, mothers often introduced their children to SMDs to help them learn the alphabet and counting. *P18* shared: "We try to put on educational and useful content on TV for them to watch and learn from. I turn on educational YouTube channels that include poems, alphabets, and more. I've learned a lot, including prayers, from these channels. My children have also learned a lot from them. My younger daughter, who is three years old, enjoys apps with musical sounds, like poems or ABCD songs.". I also have a touch pen for mobile, so they play it and give it to me and tell me to listen saying 'we know you like listening to this.'

While most mothers utilized SMDs for educational content like *Blippi*, which introduces children to various concepts such as shapes, numbers, and how things work supporting cognitive development and early learning [35], a few mothers also mentioned how specific shows, such as *Ms. Rachel*, helped address their children's delayed speech. As *P22* noted:

"She used to watch nursery rhymes. However, when her speech was delayed, she became fixated on watching only those. To help with her speech, we introduced her to Miss Rachel's educational content on YouTube. It really helped her learn a lot of words and sentences, which she continues to use."

Similarly, *P2* shared: "I gave him (child) a mobile phone and made an effort to ensure he watched educational content, such as videos on phonics." These uses of SMDs and digital media platforms for language acquisition in young children have been documented in the literature, where children under five improve language skills through watching YouTube videos [36], and quality tablet-based experiences support literacy and language learning [34].

Gratifications Sought by Young Children

While mothers have their own preferences and gratifications they seek from SMDs, there were some areas where children's gratifications overlapped briefly with those of their mothers. We report them in the **Table 2**.

4.3 Strategies to Regulate or Promote Non-Use of SMDs

While some mothers observed significant cognitive gains in their children, others reported limited success, preferring hands-on learning experiences. This aligns with research indicating that children experience greater language activation when engaged with traditional learning methods, such as reading books with adults, compared to passive activities using SMDs [22].

4.3.1 Consistent Rules Across Caretakers. *P9* mentioned the support from grandparents who lived with them in regulating their children's use of SMDs.

"Her (child's) grandmother has a very good habit. As soon as we go downstairs and she sees that [child name] has come, she turns off the TV immediately. She gives importance to the child. She doesn't watch dramas. Because our Pakistani dramas are not like that which can be watched with kids. So, she doesn't watch them at all. She says that there are things like multiple marriages, divorce, and such things. So, she doesn't watch it in front

⁸A chapter in Quran(holy scripture of Islam) often referred to as the "heart of the Quran"

of the kids because the kids then ask questions about everything, what does it mean what does that mean? And they are too young to understand these things/topics. And it is good for them to learn things at the appropriate ages."

P2, who lived with her maternal family as she was pursuing a PhD while her husband worked out of country, described how all parents in the household followed same rules for allowing SMD use. She said *"I have two children, and my two brothers have three children. All of us have set timers on our children's (screen media-based) devices. Everyone knows that once the timer goes off, no one will give them the device. At a specific time, someone will turn it (SMD) on and give it to them, but as soon as the timer is up, no one gives it again. So, everyone is on the same page."*

On the other hand, P12 adopted environmental control strategies in the absence of consistent rules for usage of SMDs across households, such as avoiding visits or stays at places where the children would exceed their allowed SMD use.

"We never allow them unlimited (SMD) use. When we go to my mom's house, she can't control their use of screens. So we have strictly stopped going to my mom's house or sending our kids there because of the fact that they are unsupervised in front of the screen. So that's not how I want to raise my daughters. So I would rather not go to a home where this is happening because it's not okay. At our home, we would make sure that this is not happening."

4.3.2 Timed use of SMDs. Many mothers effectively monitored and limited their children's SMD use by relying on timing apps and devices that track and restrict SMD use [42]. P2, for instance, mentioned using a timer that automatically shuts off the screen after a set period and prevents it from being turned on again until a specific time: *"I monitor the content of the app. I also have a timer. The app goes off after a certain time. You cannot turn it on again before 12 o'clock. Kids know that when the app goes gray, they will not turn it on again."*

Some mothers adopted strategies documented in the literature [21], such as P18 turning off the internet device to make it seem down, effectively reducing her child's SMD use. *"When I don't want them to watch TV, I turn off the WiFi and tell them the network isn't working [...] I often do this, either by turning off the data or the WiFi, so they think the network is down and there is no TV or mobile today."* Similarly, P8 used a creative strategy by telling her son the TV was broken to limit his SMD use, and he eventually settled without it.

Other mothers employed more structured approaches, such as setting specific times for SMD use. For instance, P12 described how she managed her daughter's SMD use: *"Before Maghrib (sunset), we kept her busy playing. After Maghrib, she would watch the screen for a while before bedtime and then turn it off."*

4.3.3 Persuasion and Role Modeling. Mothers also revealed an interesting strategy to make children withdraw from watching certain type of content: talking and explaining things kindly. For instance, P4 noticed the adverse effects of a TV program on her child and decided she no longer wanted her child to watch it:

"One day, I went to the commercial area with [child name] and bought some chips. He saw a cartoon where a thief named John steals things, but Motu Patlu (the protagonists in the cartoon) catch him. When I picked up the chips, [child name] asked, 'Mom, are you stealing?' I was embarrassed, and the shopkeeper noticed. This showed me that children can pick up things from content unexpectedly, and you only realize it when it's too late. I explained to [child name] that stealing was wrong, and I lovingly told him not to watch Motu Patlu and explained my reasons. After that, he stopped watching it entirely. Even if it came on, he would skip it."

She also adopted emotional persuasion to get her child into her preferred routine. *"If [child name] refused, I'd say, 'You are Mama's world and friend. If you don't play with her, who will?' I would pretend to cry, saying bad people might catch me because I cry too much. [Child name] would respond, 'Okay, Mama, let's play' and gradually started enjoying it. Over 3-4 months, I slowly reduced screen time and got him used to playing with me."* P21, who was the least educated mother from the interviewees, modeled good [as per her perception] SMD habits to make the best use of SMDs. She said: *"I also use my mobile phone in front of them [children], so I try to set an example. Sometimes, I play Naat or Labaik Allahuma Labaik for them before putting on their cartoons. I want them to learn positive things from the mobile."*

4.3.4 SMD and Platform Restrictions. In addition to content filtering, some mothers allowed their kids to access content through specific devices only such as laptops or televisions. This helped them gain more supervision on their child's content, avoiding personal devices which can sometimes be harder to supervise. P19 reported allowing her children to only access laptop and television while disallowing mobile phones. Similarly, P18 said on not allowing personal devices to her children: *"We have a smart LED TV. So, the kids watch something on it. We haven't given them anything personal or individual. We haven't organized a tablet or a laptop for our kids."*

Device restrictions often went hand in hand with platform restrictions, where mothers allowed selective platforms which they deemed as child friendly. For instance, P1 only allowed Netflix's kids section to her child, believing it would provide more appropriate and child friendly content. More educated mothers, such as P20, actively monitored and relied on Netflix kids, or family approved games for her kid:

"I don't remember leaving them (both kids) unsupervised ever. I am not comfortable that I am working in the kitchen and they are using their screen. So usually I am around, either working on my laptop or watching my own movie. So if they are watching movies, it's usually Netflix, the kids' section, and if there is a game, then I would know the exact game which all their cousins are playing. I would know that it's a safe family game because her chacha (paternal uncle) and mamoo (maternal uncle) are also playing (it)."

However, the majority of mothers preferred YouTube over Netflix due to its wider range of culturally and religiously relevant content options.

4.3.5 Engaging in Screen-free Activities as a Diversion. Mothers countered the challenge of excessive SMD use by offering alternative activities such as outdoor play or non-screen interactive games [38]. More than half of the participants also reported that their kids preferred physical and non-screen-based activities themselves. As P2 explained: *“It really depends on the activities we offer them. For example, if we set up the pool, they’ll drop everything and jump right in. As long as they’re engaged in something they enjoy, they don’t even think about screens.”* This also included their reliance on a packed schedule, P1 commented: *“He (child) will start school in August. Then he will be going to his tuition. He won’t get enough time to use the screen or anything else. He will be tired after a long day, after school, after tuition. Then he will be going to his madarsa⁹”*

P5 went a step further, engaging the entire family in these activities, creating more engagement and limiting the child’s SMD use much more effectively. She said:

“For now what we have done is his father sometimes play cricket with him inside the house and we have brought board games for them. Currently he is playing UNO and Jenga and Ludo so we all sit together and play so we can reduce his screen time and incorporate more family time.”

4.4 Survey Analysis

We received a total of 34 survey responses, out of which, three responses completed by fathers were excluded due to mothers being our primary focus, and the remaining six responses were excluded because the mothers did not have a child under the age of 5. This left us with 24 valid responses for analysis. Since we did not get sufficient responses, and the obtained responses were mostly aligned with the insights from the interviews, we have briefly summarized the survey findings below.

While 58% of the respondents were housewives, survey data also showed that most mothers were well-educated, with the majority holding at least a bachelors degree. Household sizes tended to include either 4 or 7 members, reflecting the common presence of extended family. 50% of respondents’ children were introduced to SMDs by the age of 1, with television and mobile phones being the most commonly used devices. Children generally had a screen-time between 1-3 hours daily, primarily in the afternoon or evening, while their mothers often engaged in regular household chores. The most popular apps used by children included YouTube and YouTube Kids, with educational and animated content being the top preferences. The data shows that most respondents are familiar with parental control tools such as YouTube Kids, app locks, and Google Family Link, highlighting proactive involvement in managing their children’s digital experiences. Mothers also expressed significant concerns about the impact of SMD use on their children’s physical activity and eye strain, while being generally aware of the apps their children use and taking active steps to monitor and regulate the use of SMDs.

⁹An Islamic school or educational institution focusing on religious studies, including the Quran, theology, and Arabic. Common in many Muslim-majority countries, they often play a central role in religious education and the community’s cultural life.

5 DISCUSSION

5.1 Comparing Survey and Interview Insights

In the survey, 35% of mothers considered their child’s use of SMDs acceptable, and 26% were unsure about it. However, the interview data painted a different picture: approximately 85% of the mothers expressed dissatisfaction with the amount of time their children spent using SMDs, with many expressing a strong desire to reduce it. This discrepancy may suggest that mothers may view and report their child’s SMD use duration differently in a structured survey compared to a more in-depth interview setting, where they might feel more comfortable expressing their concerns. On the note of self-reflection, half of survey respondents admitted to SMD addiction, but this was not consistently echoed in the interviews. Many mothers, while frequently using SMDs for social media, dramas, or work, did not view themselves as addicted, typically using SMDs when their children were occupied. This suggests that mothers may have a nuanced understanding of their own SMD use, highlighting a difference between their survey responses and interview narratives. Finally, interview participants highlighted a range of concerns related to their children’s use of SMDs, prominently behavioral issues. Many mothers noted that their children were adopting inappropriate language from the content they consumed or were becoming overly reliant on SMDs to the extent that they would refuse to eat or sit still without watching something. Interestingly, the survey responses did not reflect these concerns as strongly; instead, mothers were more focused on the physical health implications of extended SMD use, such as a lack of physical activity, eye strain, and poor posture. This difference may suggest that while immediate behavioral issues were top-of-mind during interviews, broader health concerns were more likely to be reported in the survey. Exposure to inappropriate content was a recurring concern in both the surveys and interviews. Additionally, mothers expressed a preference for YouTube over YouTube Kids, citing the former’s broader content selection and more Islamic content as key reasons for this preference. This was consistent across both data collection methods, indicating a shared concern about content quality and appropriateness.

5.2 Use of SMDs by Pakistani Mothers and Global Caregivers as Parenting Assistants

Similar to caregivers globally, Pakistani mothers sought educational content through SMDs to facilitate their children’s learning and development. Educational shows and apps, such as those mentioned by the participants, helped them to introduce children to foundational concepts like the alphabet, counting, and cultural knowledge. These practices align with findings from previous studies that highlight the benefits of using SMDs to enhance vocabulary and comprehension in young children [44]. However, unlike other popular media platforms such as Netflix and Amazon Prime [1], YouTube emerged as the top choice among our participants. Both mothers and children preferred YouTube due to its free access, dual-purpose usability, and diverse range of content, including vlogs, educational videos, religious programs, and shows in Urdu. Participants cited the lack of culturally and religiously aligned content on other platforms as a key factor influencing their choice, despite concerns about

frequent advertisements and the higher risk of children encountering inappropriate content. We also attribute this preference to the affordability challenges faced by the average Pakistani household.

As reported in the literature from high-income countries, where parents preferred SMDs over voice interfaces and smart objects due to concerns about potential intrusion into parent-child space [10, 11, 37], mothers in our study mentioned allowing the use of mobile phones either by themselves or by the children's grandmothers during mealtimes to prevent tantrums and encourage the children to eat without fuss. The use of technology to maintain connections, especially with relatives living at a physical distance, also mirrors a global phenomenon where SMDs facilitate communication and emotional bonding across distances, with video calls and messaging apps offering a sense of closeness despite physical separation [50].

One distinctive aspect of Pakistani mothers' use of SMDs was the emphasis on *cultural and religious education*, offering a unique perspective on the intersection of technology, culture, and parenting. Mothers prioritized and selected media that aligned with their cultural and religious values. This reflects a broader global trend where mothers utilize SMDs to instill cultural and moral values in their children [47]. The integration of religious content in SMD use highlights the importance of cultural identity and religious teachings in parenting practices in Pakistan. The dynamic between children and mothers regarding technology use is also noteworthy. Similar to findings from studies with mothers in the United States [5, 7], Pakistani mothers also retain their high position in the family hierarchy despite the influence of spouses and extended family, thus playing a central role in decision-making and regulating technology use within the household. The phenomenon of *role reversal* has been documented globally, where children become technological experts guiding their parents and often surpass them in digital proficiency, leading to a shift in traditional family hierarchies [51]. This detraditionalization of parental authority can have mixed effects, fostering family cohesion in some cases while creating tensions in others. Although this concept exists globally, it was relatively uncommon among our study participants, primarily because of mothers' authoritative and gate keeping role due to children's young age.

Despite the educational and cultural benefits, Pakistani mothers also face challenges similar to those encountered by caregivers worldwide. The struggle to balance SMD use with offline activities, as well as the reliance on SMDs for distraction and engagement, is consistent with common parenting dilemmas in the digital age [6, 14]. This tension reflects broader concerns about the impact of SMD use on child development, where the convenience of technology often competes with the need for face-to-face interactions and physical activities. The challenge of balancing SMD use with appropriate developmental stimulation prompted mothers to implement strategic measures, including the use of timers, timeouts, effective parental controls, and restrictions on both devices and platforms.

5.3 Value-Driven SMD Use

Mothers in our study were found evaluating the potential positive and negative impacts of SMD use by themselves and their children, with an overall consensus that SMDs should be utilized when their use is purposeful. In this context, many mothers had taken special

measures to ensure that their child's SMD use is *meaningful* or *adds value* to the child's personal or mental growth. Thus, we present the notion of *Value-Driven SMD Use (VDSU)*, which refers to using SMDs for activities that have an added benefit of supporting the values and benefits sought by users (in this case, primarily mothers) through the use of SMDs. Here, VDSU refers to the practice of engaging with SMDs in ways that align with personal values and provide tangible benefits, much like value-added services. This concept emphasizes that SMD use should not only be meaningful and supportive of individual or cultural values but also contribute positively to one's well-being or personal growth. For example, many mothers used SMDs to kick start their child's preschool education, helping them learn the alphabet, counting, rhymes, and more. Notably, some children with speech delays begun picking up words and speaking after watching educational programs like *Miss Rachel*. Additionally, TV programs such as *Niki and Vlad*, which teach good manners and habits like washing hands, were also considered meaningful because they help children develop positive behaviors.

While Value Sensitive Design (VSD) emphasizes integrating human values into the design of technologies, VDSU focuses on how users, particularly mothers, engage with and regulate technology use in everyday life. VSD centers on aligning design with values during the creation of technology, whereas VDSU explores the cultural, social, and familial values that influence usage patterns and regulatory behaviors, particularly in the context of parent-child interactions. VDSU highlights the agency of parents in navigating these interactions, offering insights into how values shape technology use over time, rather than just focusing on the design phase.

In the Pakistani context, where religious education is an important aspect of children's upbringing, many mothers also used SMDs to help their children learn religious knowledge, such as verses from the holy book. This use of SMDs was reassuring to the mothers in a sense that it was adding value to their religious knowledge. Video calling was another form of meaningful use of SMDs, with mothers claiming that they helped bridge the gap between children and distant family members, such as a father working abroad or relatives living far away. Mothers often did not consider video calling as typical screen time, as they believed that this activity fostered connections and maintained bond with family members. This, in turn, was believed to promote healthy relationship habits and emotional well-being. VDSU also included performing activities such as watching movies or playing games, but only under the supervision of a parent, typically the mother. This supervision not only ensured that the content is appropriate but was also deemed to augment mother-child bond. For instance, SMD use was deemed meaningful when the whole family sits together to watch a movie, followed by a discussion about its positive and negative aspects. This not only encouraged children to express their opinions, but also turned the experience into a valuable learning opportunity, and fostered values of family bonding. Young children, on the other hand, often seek less mindful gratifications from SMDs, such as emotional and social connection through watching and sharing content, engaging in video chats, expressing themselves through creative activities, or simply enjoying entertainment without deeper engagement. This is mainly because mothers are the primary gatekeepers of SMD use of their children, thus children have limited uses and gratifications

Show	Language	Platform	Mentions	Perception	Official Description	Theme(s)
Kids Land	Urdu	YouTube	8	Positive	"Kids Land" aims to create awareness about the true essence and values of strengthening family bonds in the society, by publishing authentic knowledge for children and parents.	Animated content for children, focusing on Islamic teachings, values, and life lessons presented in an engaging format.
Omer and Hana	English	YouTube	4	Positive	Follow the journey of Omar, Hana, their family, and friends as they play, learn, and teach good Islamic characteristics and moral values through songs.	Features engaging Islamic cartoons designed for children, teaching values such as kindness, gratitude, and honesty through songs and stories.
Diana and Roma	English, others	YouTube	3	Negative	Millions of kids and families from all over the world join Diana and Roma every day to explore the world and learn about songs, numbers, nature, colors, shapes, animals, and more.	Features two siblings in fun, educational, and entertaining adventures designed for children. Promotes creativity and learning through imaginative stories.
Blippi	English	YouTube and Netflix	3	Positive	Blippi helps children's understanding of the world and encourages vocabulary development through fun adventures.	Features educational videos for preschoolers, exploring topics like colors, numbers, vehicles, and professions.
Motu Patlu	Hindi	YouTube	2	Negative	An Indian animated sitcom featuring two friends navigating humorous misadventures.	Focuses on friendship, teamwork, and the importance of helping others through humorous predicaments.
Harris and Friends	Urdu	YouTube	2	Positive	A series produced by Evolution Media Network Pakistan, revolving around Harris and his friends.	Addresses social themes like kindness, helping the poor, and celebrating cultural and religious values.
Sehrish and Luqman Family	Urdu	YouTube	2	Positive	Family vlogs featuring daily life, fun outings, celebrations, and educational content.	Themes include parenting, Islamic teachings, and positive life lessons.
Vlad and Niki	Multilingual	YouTube	2	Neutral	A global preschool phenomenon featuring two brothers in non-stop fun and crazy adventures.	Features playful sibling adventures, family bonding, imaginative scenarios, and toy role-playing. Encourages creativity and light learning.
Vir the Robot Boy	Hindi	YouTube	2	Neutral	An adventurous robot boy tackling challenges and solving problems.	Highlights friendship, courage, and kindness through heroic adventures.
Ms Rachel	English	YouTube	2	Positive	Toddler learning videos focusing on speech and language development.	Research-backed content promoting key developmental milestones such as phonics and social-emotional growth.

Table 3: Summary of content consumed by children, highlighting 10 shows with diverse themes, language, platform, and frequency of mention by parents, along with their perceived value and thematic focus. The shows vary in cultural and educational emphasis, ranging from Islamic teachings and family values to playful sibling adventures, imaginative storytelling, and early learning milestones.

at this stage, while mothers have several. To summarize, as noted by P20:

"I wouldn't unnecessarily restrict [the use of SMDs]. If they (children) are engaging in the right kind of activities on the device, that's my priority. Instead of passively watching a movie, I would prefer my daughter watch 10 videos and then share with me what she learned. I would rather have her involved in more meaningful learning opportunities online, rather than focusing too much on how many hours or minutes she spends on the device."

5.4 Opportunities for Design

To identify design opportunities in this space, we analyzed the interview transcripts to determine which shows and content were most frequently mentioned by mothers as being consumed by their

children. We then researched these shows and channels to obtain their official descriptions, and to identify the primary themes they cover, as summarized in Table ???. We then juxtaposed them with uses and gratifications sought by mothers, and strategies used by them to limit the use of SMDs, as detailed in section 4.2 and 4.3 respectively. This exploration revealed several opportunities for design that merit further pursuit, particularly in addressing mothers' preference for VDSU.

While there was no notable demand for a specific type of SMD, there appeared to be a limited supply of local digital media that could align with mothers' desired gratifications. Mothers expressed satisfaction with a few programs which aligned with VDSU, such as **Blippi**, and speech development channels, such as **Miss Rachel**, none of which were locally produced. Conversely, they were wary of channels promoting consumerism (e.g., excessive or expensive toys) and hyper-stimulating content, such as vloggers **Vlad and Niki**—which promoted non-Islamic celebrations like Halloween—and

Diana and Roma. Additionally, they criticized shows like **Motu Patlu** for using culturally inappropriate language and concepts from neighboring countries. Although some local YouTube channels cater to these gratifications, such as **Pakkay Dost** (a Sesame Street-style channel focusing on young children’s Urdu language learning and entertainment) and **Meissa and Mama** (a channel run by a Pakistani actress who narrates stories of Islamic Prophets), the mainstream media does not offer much digital content. With YouTube being the most popular platform among study participants, we believe that encouraging local content creators and educational professionals to develop content that aligns with cultural and educational needs can promote a more inclusive ecosystem for children’s media. Policies around tech development, particularly in global platforms like YouTube, could be designed to prioritize cultural sensitivity in both content and interface design. Encouraging the creation of shows that celebrate diverse cultural norms and values while avoiding content that may conflict with local customs could help better deliver the gratifications sought by Pakistani mothers.

In addition to the need for localized educational content, another opportunity for design lies in vlogging content, which was a popular choice among children but was met with caution by mothers. While vlog-style content is engaging and widely consumed by children, mothers expressed concerns about its potential to promote inappropriate behavior, excessive consumerism, and cultural content that conflicted with their values. To address this, there is an opportunity to design vlogging platforms that align with cultural and religious values, while maintaining the entertainment and educational aspects that make vlogs appealing to children. The said platform can encourage creation of vlogs that combine educational themes, cultural stories, and Islamic teachings in an entertaining and child-friendly manner. This would provide a safer alternative that meets both the children’s entertainment needs and the mothers’ desire for culturally appropriate and value-driven content.

Finally, in terms of controlling children’s use of SMDs, an opportunity exists to integrate smart activity recommendations within existing SMD use management tools, like Google Family Link or Apple’s Screen Time. These tools could suggest real-world activities based on children’s SMD usage patterns and interests, such as recommending science crafts after watching science-related educational videos. Moreover, these apps could enable parents to coordinate and set schedules that balance SMD use with physical activities, such as outdoor play or family board games. By tracking offline activities and rewarding participation, this would provide a more balanced approach to screen media, helping mothers better regulate their children’s SMD use.

5.5 Challenges and Generalizability Considerations

Our study’s generalizability is influenced by a few key limitations. First, our sample was restricted to mothers who had access to digital services, such as personal mobile phones and social media, which were used for recruiting participants. This selection criterion may have excluded mothers from lower socio-economic backgrounds who face barriers to accessing these technologies. Furthermore, participants from lower socio-economic backgrounds encountered difficulties with Zoom, potentially narrowing the diversity of our

sample. To address these challenges, we offered alternative methods for participation, including phone interviews and in-person meetings, to ensure that socio-economic barriers did not entirely exclude valuable contributions. Furthermore, judging by their Islamic names, we assume that all participants belonged to the Islamic faith, which may have influenced their orientation towards seeking more religious gratifications from SMDs. Hence, the impact of these limitations must be considered when interpreting the findings. The results may not fully represent the experiences of all mothers, particularly those with limited access to digital technologies, or those from varying socio-economic contexts or religious backgrounds.

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