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Research Article

Association of Social Media Use with Family Connectedness and Parental Monitoring: A Survey Study of Young Adults in Pakistan

Amina Tariq [iD],[1] **Shanchita R. Khan [iD],**[2] **Oscar Oviedo-Trespalacios [iD],**[3,4]
and Amna Basharat [iD][5]

[1]*School of Public Health and Social Work, Faculty of Health, Queensland University of Technology, Australia*
[2]*Kirby Institute, University of New South Wales, Sydney, Australia*
[3]*Department of Values Technology, and Innovation, Faculty of Technology, Policy and Management,*
 Delft University of Technology, Netherlands
[4]*Faculty of Health, Queensland University of Technology, Australia*
[5]*FAST National University of Computer and Emerging Sciences, Pakistan*

Correspondence should be addressed to Amina Tariq; a.tariq@qut.edu.au

An increasing number of young adults are using social media platforms in collectivist family cultures like Pakistan, but little is known about how social media use is associated with family connectedness in this population. This study is aimed (a) at examining the social media usage patterns in Pakistani young adults and how they use it to connect with their parents and (b) at exploring the possible association between social media use and perceived family connectedness and parental monitoring. Data came from an online survey conducted among young adults in Pakistan. Patterns of use across various popular social media platforms were recorded. Additionally, family connectedness and parental monitoring were measured. Multiple linear regression analyses were used to examine the relationship between social media used to connect with parents and family connectedness and parental monitoring. A total of 421 participants responded to the survey. All participants regularly used at least two popular social media platforms. WhatsApp was the most used platform irrespective of gender or age, with about 91% of the participants reporting daily usage. Overall, 63% of participants connected with their parents using social media. This varied significantly among male and female participants with 69% of female participants connecting with their parents on social media compared to 59% of males. Connecting with parents on both Facebook and Instagram was highly associated with participants' perception of parental monitoring before and after adjusting for age and gender. The study highlights that while family connectedness in collectivist societies like Pakistan is not associated with social media usage, adult children perceive parents monitoring their social media activities.

1. Introduction

The use of social media has grown exponentially over the last two decades, particularly among young adults [1, 2]. These platforms have become an integral part of the lives of people all around the world, with more than half of the world (60%) now using these platforms [3]. Usage rates are high in many of the advanced economies including two-thirds or more of all adults in the United States, Australia, South Korea, Canada, Israel, and Sweden using social media

platforms [4]. Developing countries are quickly catching up, with Middle Eastern and North African countries reporting a median of 68% adult population using social media platforms [5]. Communication across these platforms range from private messages to group messages to public posts, from sending texts to voice calls to video calls, with almost all social media sites providing multiple modes for communication.

Most social media platforms state that their aim is to connect people with their families and friends [6]. Arguably,

the increase in social media-driven communication has been influencing interpersonal relationships such as parent-child relations [7]. There is emerging evidence on how parent-child relationships are evolving in the ever-changing social media landscape [7]. Findings from various studies highlight how unique social opportunities afforded by social media (e.g., quick sharing of various multimedia), cultural norms (e.g., family living arrangements), and increasing diversity of communication options (private messages versus public posts) impact various ways in which young adults choose to communicate with their parents using social media platforms. Most studies have focused on parent-adolescent child (<=20 years) relationships, and only a few have examined how these relationships differ across gender in context of social media use [8, 9]. Sampasa-Kanyinga et al. [10], in their survey of 9,732 adolescents in Ontario, Canada, found that heavy social media use was associated with greater odds of negative relationships between mothers and daughters, fathers and daughters, and fathers and sons, but not between mothers and sons. A handful of studies have also examined the impact of a parent connecting with adolescent children on social media on the quality of their relationships. Abar et al. [11] and Yang [12] in their studies found that adolescents frequently included parents in their social networks and granted them similar levels of access to their personal information as their friends. However, when it comes to parents sharing content about their adolescent children, Verswijvel et al. [13] found that adolescents, particularly boys, viewed this negatively.

Research on parent-adult child connectedness using social media has not kept up to speed with increase in social media use. A recent systematic review on the effect of social media use on family connectedness found that social media use between parents and adult children has generally been examined from a narrow viewpoint, mostly focusing on monitoring by parents or coviewing and "friending" [14]. A key limitation of existing evidence on the dynamics of social media use between parents and young children is its emergence from largely individualistic societies as in the United States, United Kingdom, Canada, and Australia. In these societies, parents emphasise children's independence, and there is a general expectation for adult children to leave home within a few years of finishing high school or college and be financially independent [15]. Less attention has been paid to patterns of social media use among parents and adult children from diverse racial and ethnic groups with varying family structures. For example, Asian and Latino families are considered classically as large, patriarchal, collectivistic, and joint families. Such traditional families function as a dominant influence in the lives of their individual members [16]. People who identify as collectivistic are individuals whose focus is the family or the group, rather than the individual [17]. It is possible that the influence of online and offline connections on parent-child relationships varies by culture, particularly in those from collectivistic backgrounds. However, this supposition has yet to be fully tested in the published literature.

Pakistan, one of the most populated countries in the world, traditionally had a joint family system. However, like many other Asian countries, over time, balance is shifting towards the nuclear family system [18]. Despite the shift, adult children are likely to live with their parents well into their adulthood, until they are married. This young adult group is the early and significant adopter of social media platforms. Pakistan had 71.70 million social media users in January 2022 (31.5% of total population) [19]. YouTube and Facebook remain the most popular social media platforms followed by WhatsApp and Twitter [19]. Most of the country's internet and social media users are those aged 18–35, and most Facebook users (about 80.3%) and Twitter users (about 88.2%) are male. Other studies on young adults in Pakistan indicate that social media usage was higher among this cohort with almost 90% using social media sites [20, 21]. Facebook and YouTube were reported to be the most accessed sites among this cohort [20]. Pakistan, for its demographic, cultural and strong religious ties, has been a region of interest to examine the adoption of digital technologies and their social impact [22]. Like other South Asian countries, Pakistan also has the highest reported gender digital divide, with the widest gaps in mobile and internet usage [23]. This also has implications on social media usage, and as reported by Schoemaker in his survey of 900 mobile data users (2015), 85% of the male respondents reported that they mostly use Facebook, compared to only 47% of female respondents. By contrast, 45% of women said that they used WhatsApp, compared to only 13% of men. While preference for WhatsApp among women can be seen for its financial affordance while enabling privacy and reinforcement of religious social norms, there is limited evidence on how parents, in collectivist societies like Pakistan, can influence social media use [24]. In the evolving social media landscape and increased intergenerational usage of these applications, Pakistan offers a unique opportunity to investigate how social media use across gender can be influenced by parents, who play an instrumental role in shaping the lives of their adult children [25].

There is growing interest in exploring how social media is impacting family relationships in Pakistan, with a primary focus on exploring implications associated with its usage. Several preliminary studies have reported a common negative perception about social media and family communication among young adults. A study across 175 young adults (20-26 years) reported that 85% of participants agreed that social media sites made family relationships nonexistent [26]. A recent study on college students in Pakistan reported that around 74% of the participants perceived that people prefer spending more time on social media than with family. However, some also report positive perceptions around family social media use. A recent study on 200 college students from Faisalabad, Pakistan, found that 75% of the participants believed that social media family groups play a vital role in family connectedness [27].

While there are prevailing negative perceptions, research is limited on whether and how young adults in Pakistan engage with their parents on social media. This includes exploring any potential links between social media interactions and the sense of connection between parents and children, as well as young adults' views on parental monitoring

within the realm of social media usage. Therefore, in this exploratory study, we aim to investigate patterns of social media use among young adults and their parents and its perceived association with family connectedness and parental monitoring. We also examine any differences in these perceptions across different gender groups.

2. Materials and Methods

An online cross-sectional survey was used to collect data from young adults in Pakistan. The survey was disseminated using convenience sampling strategies. We used a convenience sampling approach due to its affordability, efficiency, and availability of participants. We acknowledge that a random sampling approach would have produced more representative findings.

The link to the questionnaire was sent to eligible participants (900 students) in a university where one of the authors (AB) is a full-time academic. The survey was also advertised via relevant group pages on social media platforms (Facebook and Twitter). A total of 421 (response rate: 46.8%) participants aged 17-30 years took part in the survey.

The participants reported the following: (1) *demographic information*: age, gender, marital status, parental employment status, participant employment status, family income, family size, and living arrangement; (2) *access to electronic devices*: shared computer at home, shared computer at work/university, personal computer/laptop, smart phone, and tablet; (3) *frequency of use of social media platforms*: which platforms are used and frequency of their usage: Facebook, YouTube, WhatsApp, Instagram, Snapchat, Twitter, LinkedIn, Tumblr, Tinder, Tango, imo, Viber, Skype, Hangouts, Pinterest, TikTok, Duo. Responses ranged from never to several times daily [28]; (4) *use of social media with parents*: participants were asked if they connected with their parents on social media, and if yes, how often they used each social media platform with their parents (5-point scale ranging from "Never" to "Several times daily"). Those who did not use social media platforms to connect with parents were given a list of reasons for not connecting and ask to choose. The options included "My parents don't have smart phones," "My parents don't use social media," "I don't want to," "I like connecting with only my friends," and "I like my own privacy"; (5) *family connectedness and parental monitoring*: We adapted family connectedness [29] and parental monitoring scales [30] from existing studies where these have been previously validated. As there have been no previous studies around this topic in the unique cultural context of Pakistan, these scales were adapted for specific age (young adults) and cultural context (Pakistan); therefore, the psychometric properties of the original scale are not applicable. We therefore measured the reliability of our adapted scales as reported in the next section. Participants' family connectedness was measured by 7 items on a 5-point Likert scale ranging from "strongly agree" to "strongly disagree." This multi-item scale was adapted for young adults from the family connectedness scale (closeness with family) validated by Waters and Cross [29]. Parental monitoring was measured directly and indirectly. Firstly, participants were asked if their parents monitored their internet/mobile phone usage or computer-related activity. Secondly, parental monitoring was measured using four items adapted from The Good Starts study [31]. Items in both scales were modified to suit the age and cultural values of the participants.

Ethics approval for the study was obtained from the university ethics committee in Pakistan and ratified by human research ethics at QUT, Brisbane.

2.1. Data Analysis. A data matrix was produced from the completed questionnaires using SAS 9.4 for Windows (SAS Institute Inc.). Descriptive statistics were used to present demographic data and to evaluate the frequency of use of social media platforms. We summarized data as frequencies (numbers and percentages) for categorical variables. Appropriate statistical tests (chi-square) were used to conduct analysis. Results were converted to mean values, analysis of frequencies, and associations using chi-square tests, where required; $p \le .05$ was considered significant. Total scores of family connectedness were summed to range from 7 to 35, with higher scores representing higher self-perceived family connectedness. Total scores of parental monitoring were summed to range from 4 to 20, and higher scores represented higher self-perceived parental monitoring.

To assess the measurement properties of the family connectedness and parental monitoring scales in a sample of Pakistani young adults, factor analysis with Varimax rotation was performed. This measured the unidimensionality of the scales. Cronbach's alpha was also computed for the factors. The index for the family connectedness scale showed a moderate internal reliability with a Cronbach's alpha of 0.65. The parental monitoring scale also showed an acceptable internal reliability with a Cronbach's alpha of 0.8.

The Box-Cox technique was used to find the optimal normalising transformation for both family connectedness and parental monitoring [32]. Multiple linear regression analyses were used to examine the relationship between social media use to connect with parents and family connectedness and parental monitoring separately. Both crude and adjusted beta coefficients are reported. Covariates include age and gender.

3. Results

The mean age of survey participants in this study was about 22.6 years (Table 1). About 61% of the participants in this study were male, and 86% were current undergraduate or postgraduate students. Almost 96% of the participants were unmarried, and about 72% lived at home with family. All participants had access to at least one electronic device like smart phone or laptop. More than 90% of participants had a personal smart phone, and 82% had a personal laptop or computer.

3.1. Patterns of Social Media Use. All participants in the study were using at least two social media platforms with 88.4% engaging with more than five platforms, irrespective of the types of devices participants accessed.

TABLE 1: Demographic characteristics of study participants.

Characteristics	Mean (SD)/N (%)		p value
	Male	Female	
Age	22.35 (2.26)	23.14 (2.33)	<.001
Gender	257 (61.19)	163 (38.81)	
Currently studying			0.009
Yes	231 (89.88)	132 (80.98)	
No	26 (10.12)	31 (19.02)	
Lives with family			<.001
Yes	161 (62.65)	140 (85.89)	
No	96 (37.35)	23 (14.11)	
Access to device(s)			0.04
Computers, no smart phone or tablet	26 (10.12)	10 (6.3)	
Computers and smart phones and/or tablet	213 (82.88)	131 (80.37)	
No computers, only smart phones and/or tablet	18 (7.0)	22 (13.5)	
Access to computers			0.07
No access to computers	18 (7.0)	22 (13.5)	
Only shared computer at home and/or work	24 (9.34)	11 (6.75)	
PC/laptop +/- shared computer	215 (83.66)	130 (79.75)	
Access to smart phones			0.39
Yes	230 (89.49)	150 (92.02)	
No	27 (10.51)	13 (7.98)	
Social media platforms used			0.67
2–4 platforms	32 (12.45)	17 (10.43)	
5–9 platforms	197 (76.65)	131 (80.37)	
10+ platforms	28 (10.89)	15 (9.2)	
Social media use			
Facebook			0.04
Never or rarely	37 (14.4)	36 (22.09)	
Sometimes	54 (21.01)	41 (25.15)	
Very often or all the time	166 (64.6)	86 (52.77)	
YouTube			0.03
Never or rarely	5 (1.95)	4 (2.45)	
Sometimes	43 (16.73)	42 (25.77)	
Very often or all the time	209 (81.32)	117 (71.78)	
WhatsApp			0.17
Never or rarely	6 (2.33)	0 (0)	
Sometimes	19 (7.39)	14 (8.59)	
Very often or all the time	232 (90.27)	149 (91.42)	
Instagram			0.06
Never or rarely	48 (18.68)	16 (9.82)	
Sometimes	36 (14.01)	21 (12.88)	
Very often or all the time	173 (67.31)	126 (77.3)	
Snapchat			<.001
Never or rarely	122 (47.47)	44 (26.99)	
Sometimes	39 (15.18)	32 (19.63)	
Very often or all the time	96 (37.35)	87 (53.38)	

WhatsApp was the most used platform irrespective of gender or age, with about 91% of the participants reporting daily usage. All participants who had a personal smart phone were users of WhatsApp. This was followed by YouTube (78%), Instagram (71%), and Facebook (60%) as the most popular social media sites used daily. Only 43% reported

that they used Snapchat, and 7% used TikTok daily. The use of Facebook and YouTube was significantly higher in males ($p = 0.04$ and $p = 0.03$, respectively), while female participants were more likely to use Instagram and Snapchat ($p = 0.06$ and $p < 0.001$, respectively). There was no gender difference in the use of WhatsApp, which was the most widely used social media app among this cohort of Pakistani youth.

3.2. Patterns of Social Media Use with Parents. Overall, 63% of participants connected with their parents using social media. This varied significantly among male and female participants with 69% of female participants connecting with their parents on social media compared to 59% of males ($p = 0.04$; Table 2). WhatsApp was the most reported social media app used by participants (91%) to connect with parents with 71% reporting using it all the time to communicate with parents. More than half of the participants reported using Facebook to communicate with parents, with 24% reporting using it very often. YouTube (47%), Instagram (33%), and Snapchat (20%) were the other commonly used social media sites that participants reported to connect with parents. The platforms used to connect with parents did not vary by gender with males and females connecting on Facebook, YouTube, WhatsApp, and Instagram. However, females reportedly used Snapchat to connect with parents in significantly higher numbers than males ($p < 0.001$). Living with or away from family was found to have no association with connecting with parents on social media.

For those who do not connect with their parents on social media (37%), when asked about the reasons for not doing so, the most common reason (61%) cited by participants was that their parents did not use social media (Table 2). The second most cited reason (27%) was participants concerned about their privacy and preserving it by opting not to connect with their parents.

3.3. Social Media Use, Family Connectedness, and Parental Monitoring. Family connectedness was measured using seven questions. The median family connectedness score was 31, very high for this cohort of participants; however, it is reflective of the patterns in this region, with family being a very strong unit. The score did not vary with gender, age, family size, or if coliving with family. Results from multiple linear regression analyses examining the association between the use of social media to connect with parents and family connectedness are presented in Table 3. Both adjusted and unadjusted models show no association between any of the social media platforms used to connect with parents and participants' perception of family connectedness.

Overall, 19% of the participants (female: 23%; male: 17%) reported that their parents monitored their internet/device usage when asked directly (Table 2). Parental monitoring was also measured indirectly using 4 items. The median parental monitoring score was 18.0, and it varied with gender with more than 55% of females reporting experiencing higher monitoring compared to 45% of males ($p = 0.05$). Parental monitoring did not vary significantly with age, family size, or if coliving with family.

Table 3 presents results from multiple linear regression analyses examining the association between the use of social media to connect with parents and parental monitoring. Connecting with parents on both Facebook and Instagram was highly associated with participants' perception of parental monitoring before and after adjusting for age and gender. This was not the case for the most used platform WhatsApp.

4. Discussion

Our study is aimed at exploring patterns of social media use between Pakistani adult children and their parents. Pakistan's cultural context is notable for its prominent display of heritage and ancestral traditions. Like other densely populated South Asian countries in the region, it emphasises traditional, collectivist values, focusing on interdependence and community ties [33]. Young adults well into their adulthood live with their parents and obeying them is central to the family values [34]. To the best of our knowledge, this is one of the very few studies that explore the impact of social media platforms on parent-child relationships in the collectivist family cultural context of Pakistan [35]. Our study advances the much-needed evidence on how adult children's increased social media consumption possibly relates to traditionally collectivist, interdependent values and culturally relevant parental goals of South Asian parents.

All participants were active social media users using diverse available platforms, despite some variation in device access with 90% having a personal smart phone. Our findings confirm that although the percentage of men and women using social media is comparable, there are gender differences in terms of preference and frequency on specific social media platforms. WhatsApp is the most popular social media platform irrespective of gender and age. The nature of WhatsApp, which is mostly to communicate with your own contacts and not an unknown audience, highlights that the principal role social media has is communication with others rather than entertainment. The next most popular platforms were Facebook and YouTube, which are mostly used for entertainment activities such as media consumption and sharing. Importantly, Facebook also includes a texting function that is used for communication. When looking at gender differences, Facebook and YouTube were more popular among males whereas female participants were more likely to use Snapchat and Instagram. These patterns corroborate with those reported in other studies and reported social media statistics [36, 37].

In terms of the use of social media platforms with parents, 63% of participants connected with their parents on at least one social media platform. Our study provides insight into patterns of connecting with parents across specific social media platforms. WhatsApp was the most preferred platform used by adult children to connect with their parents and used frequently. This pattern aligns with the ongoing research on how users choose different social platforms based on the presence of specific contacts [38]. As highlighted by Taipale and Farinosi [39] in their examination of WhatsApp for family communication, the WhatsApp platform offers many modalities which allow

TABLE 2: Social media use with parents.

Characteristics	N (%)		p value
	Male	Female	
Connect with parents using social media			0.04
Yes	152 (59.14)	113 (69.33)	
No	105 (40.86)	50 (30.67)	
Reasons for not using social media to connect with parents			
Parents do not have smart phones	26 (16.67)		
Parents do not use social media	95 (60.9)		
I do not want to	28 (17.95)		
I like connecting with only my friends	28 (17.95)		
I like my privacy	42 (26.92)		
Social media platforms to connect with parents			
Facebook			0.83
Never or rarely	74 (48.68)	51 (45.13)	
Sometimes	43 (28.29)	33 (29.2)	
Very often or all the time	35 (23.03)	29 (25.66)	
YouTube			0.84
Never or rarely	83 (54.97)	58 (51.33)	
Sometimes	29 (19.21)	24 (21.24)	
Very often or all the time	39 (25.83)	31 (27.43)	
WhatsApp			0.95
Never or rarely	13 (8.55)	9 (7.96)	
Sometimes	30 (19.74)	24 (21.24)	
Very often or all the time	109 (71.71)	80 (70.80)	
Instagram			0.07
Never or rarely	109 (71.71)	69 (61.06)	
Sometimes	23 (15.13)	17 (15.04)	
Very often or all the time	20 (13.16)	27 (23.89)	
Snapchat			0.004
Never or rarely	133 (87.5)	83 (73.45)	
Sometimes	10 (6.58)	9 (7.96)	
Very often or all the time	9 (5.92)	21 (18.58)	
Do parents monitor device use?			0.13
Yes	43 (16.73)	37 (22.7)	
No	214 (83.27)	126 (77.3)	

choosing of the most desired and most suitable mode of communication for every family member individually in a safe environment [39]. Popularity of WhatsApp between parents and children therefore may be indicative of their preference to keep the communication private as much as possible. Privacy is not usually afforded on that level by Facebook and Instagram, and the other popular social media platforms are used to connect with parents but used less frequently. Privacy as a preference was also indicated as one of the most common reasons by those who do not connect with their parents on social media. Our findings also highlight gender differences in choice to connect with parents—female young adults are more likely to connect with their parents using social media. This perhaps affirms the idea that females tend to use social media plat-forms to maintain existing social relationships as compared to males who use these platforms more for expressing their opinion [40, 41].

In terms of family connectedness, 72% of participants in the study lived with their parents and had very high per-ceived family connectedness. This is indicative of how fami-lies are the strongest unit in Pakistan driven by collectivist family values [42]. This pattern of strong family connected-ness is similar to that reported in studies examining family connectedness in other collectivist societies in the Arab countries. Dwairy et al. [43] reported high family connected-ness in Arab societies, and when compared to the connect-edness of American adolescents, their study reported Arab societies scoring higher than the American adolescents [43]. The high family connectedness score in our study also

TABLE 3: Association between connecting with parents using social media, family connectedness, and parental monitoring.

Social media platform	β (95% CI) Unadjusted	p value	β (95% CI) Adjusted[^]	p value
Connecting with parents using social media and family connectedness				
Facebook	0.032 (-0.106, 0.171)	0.64	0.031 (-0.107, 0.17)	0.66
WhatsApp	0.029 (-0.149, 0.207)	0.75	0.026 (-0.153, 0.204)	0.78
Instagram	-0.014 (-0.159, 0.131)	0.85	-0.009 (-0.155, 0.138)	0.91
Snapchat	0.032 (-0.139, 0.202)	0.71	0.052 (-0.122, 0.226)	0.56
Connecting with parents using social media and parental monitoring				
Facebook	0.255 (0.115, 0.395)	<.001	0.25 (0.108, 0.387)	<.001
WhatsApp	-0.005 (-0.189, 0.18)	0.96	-0.006 (-0.189, 0.177)	0.95
Instagram	0.267 (0.121, 0.414)	<.001	0.244 (0.096, 0.391)	0.001
Snapchat	0.193 (0.018, 0.368)	0.03	0.154 (-0.024, 0.332)	0.09

[^]Adjusted for age and gender.

adds to the evidence on a significant difference in the connectedness between the individualistic western and collectivist eastern societies. As demonstrated by Dwairy and Achoui [44] in their study, adolescents in France, Poland, and Argentina were less connected to their parents than adolescents in Kuwait, Algeria, Saudi Arabia, Bedouins in Israel, Jordan, and India [44]. Our findings also extend the evidence to support that despite the increase in urbanisation, modernisation, and industrialisation in collective cultures, the closely knit family patterns continue to exist [45].

Our study found no association between adult children's use of social media platforms with parents and their perceived family connectedness. In line with the collectivist family culture, young adults tend to live with their families, in parental homes for a much longer time. Therefore, bonding and relationship development is less reliant on social media technologies. However, the frequent use of social media platforms directed to communication such as WhatsApp does show the importance for social media for broader communication process without being associated with family connectedness. An implication of this finding is that technology-based solutions or interventions oriented to families might not be as widely accepted.

While participants in our study indicated a high degree of family connectedness, they were conscious of maintaining their privacy and their parents monitoring their social media use. This was indicative of the complexity and asymmetric nature of the parent-adult child relationship, meaning that parents and children have different roles and responsibilities in it [46]. During adulthood, the relationship is constantly changing due to the desires of independence and self-sufficiency of children, and it presents challenges that are unique to this period: parents go through a stage of acknowledging the child as an adult, and there is an interplay of autonomy and dependency between both parties [47, 48]. Surveys conducted in the United States indicate a high prevalence of parental social media monitoring in the context of parent and their teenage children [49]. It is likely that in Asian cultures including Pakistan, where adult children tend to colive and be

financially dependent for much longer, parents monitor their adult children's social media usage.

Several potential limitations of this study should be noted, as they also suggest opportunities for future research. First, because only cross-sectional data were used, the results of this study indicate associations between measures that should not be interpreted as causal relationships. Also, the use of a convenience sample of participants limits the generalisability of the study results. Further, as the study focused on young adults in Pakistan, a collectivist society at large that emphasise interdependence and family connectedness, it is unclear whether the patterns of results can be generalised to other cultures and individualistic societies. Our findings also highlight the prevalence of parental monitoring of social media use. Previous studies have demonstrated that such practices may increase conflict in individualistic families [50, 51]. The impact of such parental monitoring on family conflicts in collectivist cultures, especially those with strong religious ties, needs further investigation. Further, it is important to consider that the sample in this study had the means to access the social platforms and internet frequently. Many families, especially those living in rural regions in Pakistan, have limited access to the internet with some estimates suggesting 46% of all Pakistanis accessing the internet daily [52]. Future research therefore should explore how the lack of access to the internet and social media platforms might affect the degree of family connectedness and their possible association with family conflicts.

Another possible limitation of this study is that social media use with parents was assessed by a simple dichotomous measure (connecting with parents—Yes or No) and frequencies. Some variables of interest were measured using single items, which might not fully capture the underlying complexity of the constructs. However, the use of single items improved the efficiency of data collection by preventing participant fatigue and minimizing incomplete responses and contributed to expanding the diversity and comprehensiveness of the sample. An essential avenue for future research is to integrate qualitative in-depth investigations and employ finer-grained culturally relevant measures to

comprehend young adults' specific interactions with parents on social media platforms. This will enhance our understanding of how social media usage influences parent-child relationships.

Data Availability

The data is restricted as per the ethics policy of the study administering institutions (NUCES and QUT).

Conflicts of Interest

No potential conflict of interest was reported by the authors.

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References

[1] E. Frey, C. Bonfiglioli, M. Brunner, and J. Frawley, "Parents' use of social media as a health information source for their children: a scoping review," *Academic Pediatrics*, vol. 22, no. 4, pp. 526–539, 2022.

[2] E. O. Ospina, "The rise of social media," 2019, https://ourworldindata.org/rise-of-social-media.

[3] S. Kemp, "Digital 2023 April Global StatShot Report," 2023, https://datareportal.com/reports/digital-2023-april-global-statshot.

[4] Pew Research Center, "Social media use continues to rise in developing countries but plateaus across developed ones," 2018, https://www.pewresearch.org/global/2018/06/19/social-media-use-continues-to-rise-in-developing-countries-but-plateaus-across-developed-ones/.

[5] Pew Research Center, "3. Social network adoption varies widely by country," 2018, https://www.pewresearch.org/global/2018/06/19/3-social-network-adoption-varies-widely-by-country/.

[6] C. Gartenberg, "What is facebook?," *Just ask Mark Zuckerberg*, 2019, https://www.theverge.com/2019/3/8/18255269/facebook-mark-zuckerberg-definition-social-media-network-sharing-privacy.

[7] C. K. Barrie, J. P. Bartkowski, and T. Haverda, "The digital divide among parents and their emerging adult children: intergenerational accounts of technologically assisted family communication," *Social Sciences*, vol. 8, no. 3, p. 83, 2019.

[8] M. M. Leijse, I. M. Koning, and R. J. van den Eijnden, "The influence of parents and peers on adolescents' problematic social media use revealed," *Computers in Human Behavior*, vol. 143, article 107705, 2023.

[9] T. Poulain, C. Meigen, W. Kiess, and M. Vogel, "Media regulation strategies in parents of 4- to 16-year-old children and ado-

[10] H. Sampasa-Kanyinga, G. S. Goldfield, M. Kingsbury, Z. Clayborne, and I. Colman, "Social media use and parent–child relationship: a cross-sectional study of adolescents," *Journal of Community Psychology*, vol. 48, no. 3, pp. 793–803, 2020.

[11] C. C. Abar, S. Farnett, K. Mendola, K. Koban, and S. Sarra, "Relationships between parent–child social media interactions and health behaviors," *Journal of Substance Use*, vol. 23, no. 3, pp. 335–337, 2018.

[12] C. C. Yang, "Social media as more than a peer space: college freshmen encountering parents on Facebook," *Journal of Adolescent Research*, vol. 33, no. 4, pp. 442–469, 2018.

[13] K. Verswijvel, M. Walrave, K. Hardies, and W. Heirman, "Sharenting, is it a good or a bad thing? Understanding how adolescents think and feel about sharenting on social network sites," *Children and Youth Services Review*, vol. 104, article 104401, 2019.

[14] A. Tariq, D. Muñoz Sáez, and S. R. Khan, "Social media use and family connectedness: a systematic review of quantitative literature," *New Media & Society*, vol. 24, no. 3, pp. 815–832, 2022.

[15] N. Evason, "American culture," 2016, https://culturalatlas.sbs.com.au/american-culture/american-culture-family#american-culture-family.

[16] R. K. Chadda and K. S. Deb, "Indian family systems, collectivistic society and psychotherapy," *Indian Journal of Psychiatry*, vol. 55, Supplement 2, pp. S299–S309, 2013.

[17] B. Balayar and M. Langlais, "Technology makes the heart grow fonder? A test of media multiplexity theory for family closeness," *Social Sciences*, vol. 10, no. 1, p. 25, 2021.

[18] K. Ahmad, A. Farooq, and A. K. Kayani, "Marriage and family structures in the rural Punjab," *International Journal of Sociology and Social Policy*, vol. 35, no. 5/6, pp. 306–324, 2015.

[19] Datareportal, "Digital 2022: Pakistan," 2022, https://datareportal.com/reports/digital-2022-pakistan.

[20] M. W. Javed and R. Bhatti, "Usage of social media by medical and dental students at Nishtar Medical College, Multan, Pakistan," *Journal of Hospital Librarianship*, vol. 15, no. 1, pp. 53–64, 2015.

[21] M. B. Nawaz and A. W. Khan, "Social media and youth: uses, problems, and prospects in Southern Punjab (Pakistan)," *Global Regional Review*, vol. 4, no. 1, pp. 138–146, 2019.

[22] E. Schoemaker, *Digital faith: Social Media and the Enactment of Religious Identity in Pakistan, [Ph.D. thesis]*, The London School of Economics and Political Science, 2016, http://etheses.lse.ac.uk/3578/1/Schoemaker_digital_faith%20.pdf.

[23] GSMA, "The mobile gender gap report 2022," 2022, https://www.gsma.com/r/wp-content/uploads/2022/06/The-Mobile-Gender-Gap-Report-2022.pdf?utm_source=website&utm_medium=download-button&utm_campaign=gender-gap-2022.

[24] E. Schoemaker, "Pakistan's 'digital purdah': How gender segregation persists in social media," 2015, https://blogs.lse.ac.uk/southasia/2015/08/03/pakistans-digital-purdah-how-gender-segregation-persists-in-social-media.

[25] S. M. Stewart, M. H. Bond, L. M. Ho, R. M. Zaman, R. Dar, and M. Anwar, "Perceptions of parents and adolescent outcomes in Pakistan," *British Journal of Developmental Psychology*, vol. 18, no. 3, pp. 335–352, 2000.

[26] R. Ali, "Social media and youth in Pakistan: implications on family relations," *Global Media Journal*, vol. 14, no. 26, 2016.

[27] A. Iqbal, R. Firdos, and T. Hussain, "Social media and family integration: perception of college students of Faisalabad," *Global Regional Review*, vol. 6, no. 2, pp. 12–19, 2021.

[28] Pew Research Center, "Social media update 2014," 2015, https://www.pewresearch.org/internet/2015/01/09/social-media-update-2014/.

[29] S. Waters and D. Cross, "Measuring students' connectedness to school, teachers, and family: validation of three scales," *School Psychology Quarterly*, vol. 25, no. 3, pp. 164–177, 2010.

[30] C. McMichael, S. M. Gifford, and I. Correa-Velez, "Negotiating family, navigating resettlement: family connectedness amongst resettled youth with refugee backgrounds living in Melbourne, Australia," *Journal of Youth Studies*, vol. 14, no. 2, pp. 179–195, 2011.

[31] S. Gifford, I. R. Correa, and Sampson, *Good Starts for Recently Arrived Youth with Refugee Backgrounds*, La Trobe Refugee Research Centre, 2009.

[32] R. M. Sakia, "The Box-Cox transformation technique: a review," *Journal of the Royal Statistical Society: Series D*, vol. 41, no. 2, pp. 169–178, 1992.

[33] J. V. Chen, D. C. Yen, W. Pornpriphet, and A. E. Widjaja, "E-commerce web site loyalty: a cross cultural comparison," *Information Systems Frontiers*, vol. 17, no. 6, pp. 1283–1299, 2015.

[34] P. M. Greenfield, H. Keller, A. Fuligni, and A. Maynard, "Cultural pathways through universal development," *Annual Review of Psychology*, vol. 54, no. 1, pp. 461–490, 2003.

[35] S. Keshavarz and R. Baharudin, "The moderating role of gender on the relationships between perceived paternal parenting style, locus of control and self-efficacy," *Procedia-Social and Behavioral Sciences*, vol. 32, pp. 63–68, 2012.

[36] B. Dean, "Snapchat demographic stats: how many people use snapchat in 2021?," 2021, https://backlinko.com/snapchat-users.

[37] H. Seligson, *Why Are More Women Than Men on Instagram?*, The Atlantic, 2016.

[38] M. Nouwens, C. F. Griggio, and W. E. Mackay, ""WhatsApp is for family; Messenger is for friends": Communication Places in App Ecosystems," in *Proceedings of the 2017 CHI conference on human factors in computing systems*, Denver, CO, USA, 2017.

[39] S. Taipale and M. Farinosi, "The big meaning of small messages: the use of WhatsApp in intergenerational family communication," in *International Conference on Human Aspects of IT for the Aged Population*, pp. 532–546, Las Vegas, NV, USA, 2018.

[40] A. Colley and J. Maltby, "Impact of the Internet on our lives: male and female personal perspectives," *Computers in Human Behavior*, vol. 24, no. 5, pp. 2005–2013, 2008.

[41] E. Hargittai and Y. L. P. Hsieh, "Predictors and consequences of differentiated practices on social network sites," *Information, Communication & Society*, vol. 13, no. 4, pp. 515–536, 2010.

[42] P. R. Blood, *Pakistan: A Country Study*, Library of Congress, Washington, DC, USA, 1995.

[43] M. Dwairy, M. Achoui, R. Abouserie, and A. Farah, "Adolescent-family connectedness among Arabs," *Journal of Cross-Cultural Psychology*, vol. 37, no. 3, pp. 248–261, 2006.

[44] M. Dwairy and M. Achoui, "Adolescents-family connectedness: a first cross-cultural research on parenting and psychological adjustment of children," *Journal of Child and Family Studies*, vol. 19, no. 1, pp. 8–15, 2010.

[45] B. Mayer, "Family change theory: a preliminary evaluation on the basis of recent cross-cultural studies," in *Intergenerational Relations: European Perspectives in Family and Society*, I. Albert and D. Ferring, Eds., pp. 167–187, Policy Press, 2013.

[46] K. van Houdt, M. Kalmijn, and K. Ivanova, "Perceptions of closeness in adult parent–child dyads: asymmetry in the context of family complexity," *The Journals of Gerontology: Series B*, vol. 75, no. 10, pp. 2219–2229, 2020.

[47] K. S. Birditt, L. M. Miller, K. L. Fingerman, and E. S. Lefkowitz, "Tensions in the parent and adult child relationship: links to solidarity and ambivalence," *Psychology and Aging*, vol. 24, no. 2, pp. 287–295, 2009.

[48] D. Muñoz, B. Ploderer, and M. Brereton, "Towards design for renegotiating the parent-adult child relationship after children leave home," in *Proceedings of the 30th Australian Conference on Computer-Human Interaction*, pp. 303–313, Canberra, Australia, 2018.

[49] Pew Research Center, "Parents, teens and digital monitoring," 2016, https://www.pewresearch.org/internet/2016/01/07/parents-teens-and-digital-monitoring/.

[50] I. Beyens and K. Beullens, "Parent–child conflict about children's tablet use: the role of parental mediation," *New Media & Society*, vol. 19, no. 12, pp. 2075–2093, 2017.

[51] S. Nelissen and J. Van den Bulck, "When digital natives instruct digital immigrants: active guidance of parental media use by children and conflict in the family," *Information, Communication & Society*, vol. 21, no. 3, pp. 375–387, 2018.

[52] The Express Tribune, "Country's internet penetration stands at 54%," 2021, https://tribune.com.pk/story/2312994/countrys-internet-penetration-stands-at-54.