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Editor's Note/From Editorial Desk

Foundation University Islamabad's mission is to nurture creativity and promote research to develop personal and professional growth of its students. Issuance of the Foundation University Journal of Psychology (FUJP) is a step forward towards this direction. The journal accepts and publishes original articles, research papers and reviews of high quality.

Due to interdisciplinary nature of Psychology, it is related to various other fields of study including Sociology, Anthropology, Education, Gender Issues, Organizational Behaviour, Life Sciences and Psychiatry etc. Therefore, all contributions related to these fields of study are considered for publication. As an effective means of knowledge sharing, FUJP encourages articles on theoretical perspectives, grounded theories, innovative measurement tools and procedures.

We are looking forward to an enthusiastic response and active participation of not only students and teachers of Foundation University, but also of all the sister institutions to make this initiative a success.

Parent-Adolescent Relationship, Escape Motive and Problematic Internet Use Among University Students: Gender in Context

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Abstract

Objective. Present study attempted to assess problematic internet use among university students as affected by parent-adolescent relationships and escape motive; such that, escape motive mediates the relationship between parent-adolescent relationship and problematic internet use.

Method. Data were collected through purposive sampling technique from students ($N = 585$, $M = 21.62$ years) in public and private universities of Islamabad and Rawalpindi, Pakistan.

Results. It was conceptualized that secure parent-adolescent relationship negatively associates with escape motive and problematic internet use, whereas escape motive positively associates with problematic internet use. Gender was added to the model as a covariate. Mediation analysis demonstrated that escape motive significantly mediated association between secure parent-adolescent relationship and problematic internet use irrespective of an individual's gender ($p < .001$). Secure parent-adolescent relationship was negatively associated with low escape motive and problematic internet use.

Implications. Study presented empirical evidence for parents' role in shaping children's behaviours. Secure parent-adolescent relationship help reduce development of escape motive which is associated to problematic internet use among university students. It could help develop an intervention for addressing escape motive and hence reducing the problematic internet use.

Keywords. *Internet use, parenting, escape motive, higher education.*

Foundation University Islamabad

Introduction

Today, the technological world is witnessing the escalated internet use (Tankovsha, 2021) and no one could bear the thought of life without it. Problematic internet use refers to the inability to control internet usage, which results in marked distress and functional impairment (Zhu & Mok, 2020). Young (1999) is an authority figure for her classical work on internet addiction and she enlisted at least five of eight diagnostic criteria to be referred to as problematic internet users. This includes a) a need to devote more and more time to online activities, b) internet preoccupation, c) inability to effectively manage time, d) withdrawal symptoms, e) recurrent ineffective efforts for decreasing online period, f) environmental distress (i.e., from family, school, work, and friends), g) deception about time spent online, and h) mood modification through internet use (Zhu & Mok, 2020). Kim et al. (2010) postulated internet usage over long durations, isolation from social gatherings, and shifting one's whole attention towards a variety of online activities as problematic internet use. These criteria could help to distinguish between problematic and normal internet users.

Researchers reported a rapidly increasing rate of problematic internet among university students worldwide (Ahmad et al., 2020), which results in various physical and psychological problems. In particular, the academic success of students is challenged with excessive internet use because of associated low academic motivation, poor achievement, absent-mindedness in class, and inability to meet deadlines for assignments as outcomes of problematic internet use among students (Winskel et al., 2019). Ansar et al. (2020) found that almost half of 231 students reported excessively using internet and their academic performance was poor. Moreover, above 9% students have severe internet addiction. Researchers reported excessive use of social networking sites among Pakistani students that adversely impact their academic performance, physical health, psychological wellbeing, and interpersonal relationships (Ahmad et al., 2020; Akhter, 2013; Javaeed et al., 2020; Khan et al., 2019).

Parenting

Literature demonstrated that parents play a major role in the psychosocial development and wellbeing of adolescents and young adults (Faltynkova et al., 2020). High wellbeing among adolescents can be ensured by improving parent-adolescent relationship, whose core components are attachment and warmth (Hart et al., 2019; Stanik et al., 2013).

Two studies found that parent-adolescent attachment acted as a protective factor for problematic internet usage such that, problematic internet use was low in the presence of secure parent-adolescent attachment (Asyriati, 2020; Lan & Wang, 2020). Many researchers also depicted the linkage of problematic internet usage to poor early parental bonding, harsh parental rules, parental overprotection, and lack of communication with parents (Faltynkova et al., 2020; Kalaitzaki & Birtchnell, 2014). Parents lacked love and responsiveness in the case of punitive and over-intrusive rearing practices that consequently led to distancing from parents and diversion towards problematic internet use (Xiuqin et al., 2010). Deatherage et al. (2014) demonstrated that the life stressors in the family context play an important role in the development of escape motive of internet use. They found that problematic internet use was positively associated with an effort to cope with familial stress in case of poor parent-adolescent relationship. The relationship between parent and adolescent has also increased significance especially in the context of collectivistic culture (Agishtein & Brumbaugh, 2013). For instance, Pakistani researchers reported the nature of the parent-adolescent relationship as a significant predictor of problematic internet use among university students (Irfan & Zulkefly, 2021; Khalid et al., 2018; Zafar & Suneel, 2018; Zonash, 2017).

Escape Motives

Many studies have focused on the role of motives enhancing problematic internet use (Deatherage et al., 2014). Islam et al. (2018) highlighted information seeking, social interaction, and entertainment as basic motives behind problematic internet use. Among these motives, escape motive is found to be a significant predictor for problematic internet use (Soh et al., 2014). Kardefelt-Winther (2014) extrapolated that an individual engages in repetitive internet use in the presence of unfulfilled needs of real-life. The problems thus start to seem less distressing because of the emotional reward gained during media use activity. As a result, habitual internet use becomes a way to escape from all problems that eventually lead to challenging consequences (Kardefelt-Winther, 2014). Literature also indicates the use of the internet to seek escape from negative parent-adolescent relationship and interactions (Chng et al., 2015). Thus, escape motive is associated with both parental attachment and problematic internet use.

It is also evident from the aforementioned literature that escape motive could be a significant predictor of problematic internet use. However, there exists a gap in Pakistani literature on the role of escape motive for the problematic use of the internet or its association with parent-adolescent relationship.

Literature revealed a varied trend among men and women about prevalence of internet usage. Studies from Pakistan found that men more actively used internet and spent time online than women (Ahmad et al., 2020; Akhter, 2013) and are thus more inclined towards the problematic internet usage (Billieux & Van der Linden, 2012). However, a study by Haroon et al. (2018) demonstrated prevalence of problematic internet use more among women. Another study found no gender-related differences for problematic internet use (Khan et al., 2017). So, the present study aimed to assess the effect of gender as a controlled variable (i.e., covariate) for the association between variables.

Hypotheses

1. Secure parent-adolescent relationship will be negatively associated with escape motive and problematic internet use.

2. Escape motive will be positively associated with problematic internet use.

3. The escape motive will mediate the association between parent-adolescent relationships and problematic internet use.

4. Problematic internet use will be higher among men than women.

Method

Participants

The sample of the study ($n = 585$) was purposively selected from the public and private universities of Islamabad and Rawalpindi. It comprised of both male ($n = 294$) and female ($n = 291$) students with age range from 18 to 25 years ($M = 21.62$, $SD = 2.14$). The majority of the students were enrolled in undergraduate programs and belonged to natural sciences. A major proportion of university students used the internet on their laptops and smartphones. The inclusion criteria of the participants were regular internet users in the past six months and having both parents alive. Table 1 presents the demographic characteristics of the sample.

Table 1

Demographic Characteristics of the Participants (N=585)

Variables	Groups	N	%
Gender	Male	294	50.3%
	Female	291	49.7%
Levels of education	BS	341	58.3%
	M.Sc.	148	25.3%
	M.Phil.	96	16.4%
Field of study	Natural Sciences	231	39.5%
	Social Sciences	126	21.5%
	Management Sciences	53	9.1%
	Computer Sciences	64	10.9%
	Literature	22	3.8%
	Arts	89	15.2%
Internet use	Smartphone	585	100%
	Laptop	336	57.4%
	Computer	95	16.2%
	Tablet	72	12.3%

Measures

Inventory of Parental and Peer Attachment-Revised. Armsden and Greenberg (1987) developed this self-report measure to assess adolescent's positive and negative perceptions of affective and cognitive dimensions of relationships with parents and intimate friends; particularly how well these figures served as a source of psychological security. Only parental attachment subscale was used in the current study combining the Mother and Father Attachment Forms to obtain a Parent Form; such as the word "mother" or "father" was replaced by "parents" in all the items. It comprised of 25 items with a 5-point Likert scale that ranged from 1 *(strongly disagree)* to 5 *(strongly agree)*. The total scale score ranged from 25-125 and the high score indicated a high degree of psychological security in parent-adolescent relationships. The reliability coefficient for the parents' form was .93, which reflected a high internal consistency.

Internet Motive Scale. Huang (2004) developed this self-report measure that was later adapted and modified by Hooi (2011). The present study administered the adapted version of the scale and used only the subscale of escape motive to assess escape motive among university students. The measure consisted of 6 items and evaluated the internet motive in terms of six factors; entertainment, escape/pass time, social interaction, surveillance/ information, product information, and eroticism. Its five-point rating scale ranged from *strongly disagree* (1) to strongly agree (5). The score ranged from 6-30 and a high score indicated a high escape motive. The internal consistency of the scale was acceptable ($\alpha = .70, p < .05$).

Problematic Internet Use Questionnaire. Thatcher and Goolam (2005) developed this self-report questionnaire to assess problematic internet use. It consisted of 20 items based on three factors i.e., online preoccupation, adverse effects, and social interactions. Items were scored on a five-point Likert scale from 1 (strongly disagree) to 5 (*strongly agree*). The score range was 20-100. The high score represented the prevalence of problematic internet use. The scale reported a high value of internal consistency ($\alpha = .90$).

Procedure

Prior permission was pursued from authorities of the universities for evading possible issues in the data collection process. Students were approached in their classrooms, libraries, and common rooms. After receiving informed consent for their voluntary participation, participants were ensured of the anonymity and confidentiality of data. They were provided with questionnaire booklets and asked to respond as honestly as they could. The study measures were administered with different sequences to avoid response bias. The online questionnaire administration was also utilized through Google forms.

Results

The primary objective of the study was to examine the mediation effect of escape motive on the association between parent-adolescent relationships and problematic internet use. Gender was entered in the analysis as a covariate. The findings showed that all measures had high internal consistency and were psychometrically reliable for further analyses. The values of skewness indicated the normal distribution of the data

Table 2

Psychometric Properties and Correlation Coefficients of Study Variables (N=585)

Variables	k	α	M(SD)	Skew	Range		2	3
					Actual	Potential		
1. Parent-adolescent relationship	25	.94	89.48(19.52)	-.89	32-125	25-125	-.31**	-.40**
2. Escape motive	6	.83	19.48(5.15)	-.36	9-30	6-30	-	.59**
3. Problematic internet use	20	.91	53.64(14.14)	.18	20-97	20-100		-

**p<.01*

Correlation coefficients in Table 2 shows that secure parent-adolescent relationship has a significant negative association with escape motive and problematic internet use, whereas escape motive has a significant positive association with problematic internet use. Though the magnitude of these correlation coefficients is low, these findings support hypotheses about the direction of association among study variables.

Table 3

Mediation Effect of Escape Motive for Parent-Adolescent Relationship and Problematic Internet Use (N=585)

Variables	Predictors	B	p	95% CI	
				LL	UL
Problematic internet use	Parent-adolescent relationship	-.29***	.00	-.35	-.24
Problematic internet use	Escape motive	1.45***	.00	1.27	1.63
Escape motive	Parent-adolescent relationship	-.08***	.00	-.10	-.06
Problematic internet use	Parent-adolescent relationship through escape motive	-.17***	.00	-.22	-.12

**p < .01, ***p < .001

Another objective of the study was to examine the mediating effect of escape motive on the association between parent-adolescent relationship and problematic internet use such that gender acts as the covariate. Table 3 shows parent-adolescent relationship is significant predictor of problematic internet use without the effect of the mediator i.e., total effect ($B = -.29, p < .001$). Escape motive is also a significant positive predictor of problematic internet use. Whereas escape motive is significantly and negatively predicted by parent-adolescent relationship. Results also suggest that problematic internet use is significantly predicted by direct effect of parent-adolescent relationship (independent variable) through escape motive (i.e., mediator) ($B = -.17, p < .001$). The decrease in the value of coefficient from the total effect to the direct effect demonstrates that escape motive significantly mediates the association between parent-adolescent relationship and problematic internet use, irrespective of the individual's gender. It can be thus inferred that level of problematic internet use declines when individuals are more attached to their parents; such that, a high escape motive weakens this association. Figure 1 depicts the magnitude of total, direct, and indirect effects of the predictors.

Figure 1. The mediating role of escape motive for the association of parent-adolescent relationships and problematic internet use with gender as a covariate

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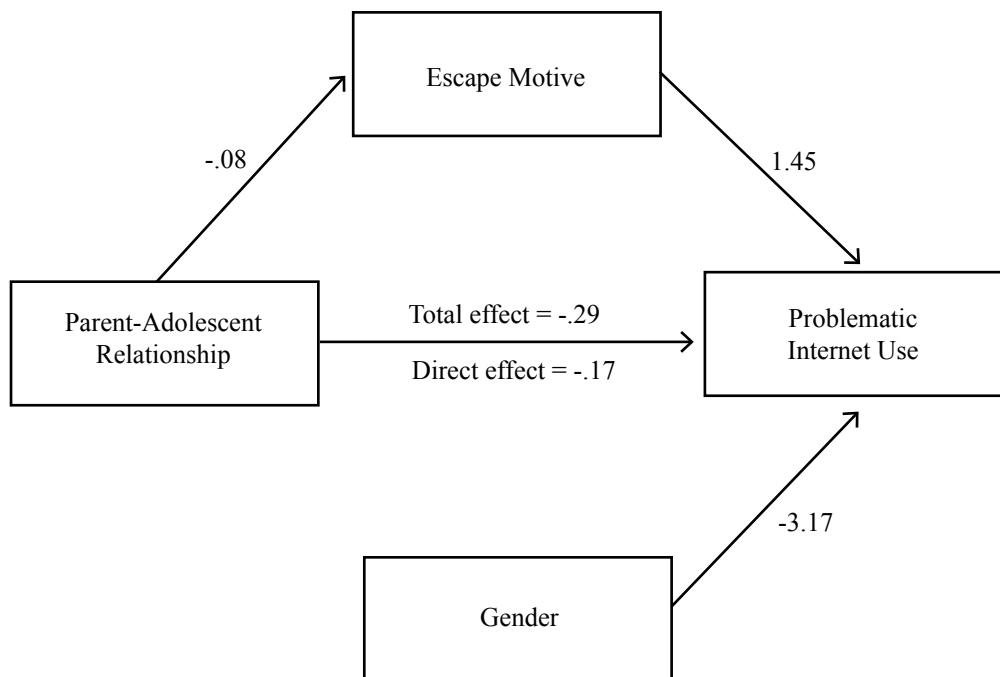
Table 4

Gender Differences for Study Variables (N=585)

Variables	Men (n = 294)		Women (n = 291)		t	p	Cohen's d
	M	SD	*M*	SD	*t*	*p*	Cohen's *d*
Parent-adolescent relationship	89.08	19.73	89.89	19.32	-.51	.61	.04
Escape motive	19.33	5.50	19.62	4.78	-.67	.50	.06
Problematic Internet use	55.33	14.49	51.93	13.59	2.93	.00	.24

**p < .01

Table 4 demonstrates the presence of significant gender difference in the problematic internet use favouring men over women for higher use. Cohen's d value also indicated the large effect size. This finding supported the hypothesis about gender differences.

Discussion

Statistics demonstrate high prevalence of problematic internet use among university students in Pakistan (Irfan & Zulkefly, 2021; Khalid et al., 2018; Zafar & Suneel, 2018). The aim of the present study was thus to address this issue of core significance. It assesses the association between parent-adolescent relationship, escape motive and problematic internet use among university students. The literature review also suggested the association between variables (Chng et al., 2015; Faltynkova et al., 2020; Kardefelt-Winther, 2014; Xinquin et al., 2010). The first hypothesis of study stated parent-adolescent relationships will be negatively correlated with escape motive and problematic internet use. The findings statistically confirmed the assumption, and the university students who perceived more attached to their parents reported having the low motivation to escape and engage in excessive internet use than their counterparts who perceived less attached to parents. Thus, it can be inferred from the findings that perceived positive or negative attachment with parents still play a significant role in shaping behavioral choices among university students.

The low magnitude of correlation coefficients and the beta value pointed towards weak predictive effects of parenting on emerging adults and young adults during university years. Nonetheless, distancing from parents with growing age and ready acceptance of peer influence is a central notion as per theories of human development. The association between escape motive and problematic internet use was also examined separately. The second hypothesis stated that escape motive will be positively associated with problematic internet use, the finding provided empirical support to the hypothesis.

As per the third hypothesis, escape motive was entered in the model to test its mediating effect on the association between parent-adolescent relationships and problematic internet use. The findings supported a statistically significant mediation effect of escape motive (see Table 3). It implies that escape motive resulting from challenging associations with parents is particularly important in explaining adolescents' problematic internet use irrespective of gender. Research evidence also indicated that escape motive due to the low parental attachment led to immersion in internet-related activities with a subsequent high likelihood of problematic and addictive internet use (Xiuqin et al., 2010). The literature also shows that when parent-adolescent relationships fulfilled a child's intimacy needs, he/she was less motivated to use the internet for escape, and, hence, the child was less likely to seek escapism for fulfilling their intimacy needs (Soh et al., 2014). Thus, the regulation of the problematic online behavior can be enhanced through stronger parent-adolescent relationships as it can control the escape motivations inside an individual from real-life problems/circumstances and enter a virtual world. Literature provide evidence that men suffer more problematic internet use than women which results in conceptualization of hypothesis 4 of the study. The findings of study support the significant gender differences in problematic internet use, favoring men for more time spent online. This aligned with previous studies as male adolescents spend more time on the internet than females (Akhter, 2013) and had a higher tendency of problematic internet use.

Limitations and Recommendations

Certain limitations for the present study can be mentioned as it is necessary to show directions for future researches. The diversity of data was limited as it was collected from only two cities in Pakistan. Future studies may include a sample from different cities of Pakistan to test these assumptions. A cross-sectional design with quantitative data may reduce the generalizability of results due to insufficient information to conceptualize the stated associations. Future studies can collect qualitative data and adopt longitudinal research design. Researchers can also analyze information about the length of time spent online, avoidance of responsibilities, pre-test, or recollections of parent-adolescent relationships before developing excessive internet use. The variables like academic achievement, learning motivation etc. among university students could also be assessed in future along with the problematic internet use.

Implications

The present study aimed to establish and understand the association of parent-adolescent relationships, escape motive, and problematic internet use. The results highlighted the association of poor parent-adolescent relationships with high problematic internet use through escape motive among university students. It is thus suggested that parents have a huge responsibility to shape the behaviours of university students, which can lead them to better psychosocial functioning. Parents are the ones who are better able to instil right pathways for guidance in decision-making for the behavior display of an individual. This empirical evidence has insightful implications for educators, higher education policymakers, and family psychologists. Findings could be implied to bring improvement in academic wellbeing of university students.

Conclusion

The findings concluded that poor or insecure parent-adolescent relationships were associated with high problematic internet use through escape motive among university students. The improvement in the parent-adolescent relationship could help help reduce the escape motive which potentially led to problematic internet use.

Declaration

References

Agishtein, P., & Brumbaugh, C. (2013). Cultural variation in adult attachment: The impact of ethnicity, collectivism, and country of origin. *Journal of Social, Evolutionary, and Cultural Psychology, 7*(4), 384-405. https://doi.org/10.1037/ h0099181

Ahmad, S., Nasreen, L., & Aiman, M. (2020). Shyness and psychological well-being as predictors of problematic internet use among students in Pakistan. *Psicología, Conocimiento y Sociedad, 10*(3), 7-26. https://dx.doi.org/10.26864/pcs.v10.n3.1

Akhter, N. (2013). Relationship between internet addiction and academic performance among university undergraduates. *Educational Research and Reviews, 8*(19), 1793 1796. https://doi.org/10.5897/ERR2013.1539

Ansar, F., Ali, W., Zareef, A., Masud, N., Zahab, S., & Iftikhar, H. (2020). Internet Addiction and Its Relationship with Depression and Academic Performance: A Cross-Sectional Study at a Medical School in Pakistan. *International Journal of Medical Students, 8*(3), 251-256. https://doi.org/10.5195/ijms.2020.740

Armsden, G. C., & Greenberg, M. T. (1987). Inventory of parent and peer attachment: Individual difference and their relationship to psychological wellbeing in adolescence. *Journal of Youth and Adolescence, 16*(5), 427-454. https://doi.org/ 10.1007/BF02202939

Asyriati, R. (2020, January). Parent Attachment and Adolescent's Problematic Internet Use: A Literature Review. In 5th ASEAN *Conference on Psychology, Counselling, and Humanities (ACPCH 2019)* (pp. 124-128). Atlantis Press. https://doi.org/10.2991/assehr.k.200120.027

Billieux, J., & Van der Linden, M. (2012). Problematic use of the internet and self-regulation: A review of the initial studies. *The Open Addiction Journal, 5, 24-29.* https://doi.org/10.2174/1874941001205010024

Chng, G. S., Li, D., Liau, A. K., & Khoo, A. (2015). Moderating effects of the family environment for parental mediation and pathological internet use in youths. *Cyber Psychology, Behavior, and Social Networking, 18*(1), 30-36. https://doi.org/10.1089/cyber.2014.0368

Deatherage, S., Servaty-Seib, H. L., & Aksoz, I. (2014). Stress, coping, and internet use of college students. *Journal of American College Health, 62*(1), 40-46. https://doi.org/10.1080/07448481.2013.843536

Griffiths, M. (2000). Does Internet and computer "addiction" exist? Some case study evidence. *Cyber Psychology & Behavior, 3*(2), 211-218. https://doi.org/10.1089/ 109493100316067

Haroon, M. Z., Zeb, Z., Javed, Z., Awan, Z., Aftab, Z., & Talat, W. (2018). Internet addiction in medical students. *Journal of Ayub Medical College Abbottabad, 30*(4 Suppl.1), S659-S663. https://pubmed.ncbi.nlm.nih.gov/30838826/

Hart, J. R., Coates, E. E., & Smith-Bynum, M. A. (2019). Parenting style and parent-adolescent relationship quality in African American mother-adolescent dyads. *Parenting, 19*(4), 318-340. https://doi.org/10.1080/15295192.2019.1642 085

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York:* Guilford Press.

Hooi, P. S. C. (2011). Influence of parents and peers on internet usage and addiction amongst school-going youths in Malaysia [Unpublished doctoral dissertation]. Multimedia University, Malaysia. https://shdl.mmu.edu.my/id/eprint/3406

Huang, A. S. C. (2004). The bright and dark side of cyberspace: The paradoxical media effects of Internet use on gratifications, addictions, social and psychological wellbeing among Taiwan's net-generation [Unpublished doctoral dissertation]. Southern Illinois University, Carbondale. https://doi.org/10.4103/jehp.jehp_ 148_20

Irfan, S., & Zulkefly, N. S. (2021). Parent-peer attachment, negative automatic thoughts, and psychological problems among Pakistani adolescents: A moderated mediation model. *Current Psychology,40*(3), 1-17. https://doi.org/ 1007/s12144-021-01599-6

Islam, S., Malik, M. I., Hussain, S., Thursamy, R., Shujahat, M., & Sajjad, M. (2018). Motives of excessive Internet use and its impact on the academic performance of business students in Pakistan. *Journal of Substance Use, 23*(1), 103-111. https://doi.org/1080/14659891.2017.1358305

Javaeed, A., Jeelani, R., Gulab, S., & Ghauri, S. K. (2020). Relationship between internet addiction and academic performance of undergraduate medical students of Azad Kashmir. Pakistan *Journal of Medical Sciences, 36*(2), 229. https://doi.org/10.12669/pjms.36.2.1061

Kalaitzaki, A. E., & Birtchnell, J. (2014). The impact of early parenting bonding on young adults' Internet addiction, through the mediation effects of negative relating to others and sadness. *Addictive Behaviors, 39*(3), 733-736. https://doi.org/ 10.1016/j.addbeh.2013.12.002

Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior, 31*, 351-354. https://doi.org/10.1016/j.chb.2013.10.059

Khalid, A., Qadir, F., Chan, S. W., & Schwannauer, M. (2018). Parental bonding and adolescents' depressive and anxious symptoms in Pakistan. *Journal of Affective Disorders, 228*, 60-67. https://doi.org/1016/j.jad.2017.11.050

Khan, A. A., Khalid, A., & Iqbal, R. (2019). Revealing the relationship between smartphone addiction and academic performance of students: Evidence from higher educational institutes of Pakistan. *Pakistan Administrative Review, 3*(2), 74-83. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-63203-4

Khan, M. A., Shabbir, F., & Rajput, T. A. (2017). Effect of gender and physical activity on internet addiction in medical students. *Pakistan Journal of Medical Sciences, 33*(1), 191-194. https://doi.org/10.12669/pjms.331.11222

Kim, Y., Park, J. Y., Kim, S. B., Jung, I. K., Lim, Y. S., & Kim, J. H. (2010). The effects of Internet addiction on the lifestyle and dietary behavior of Korean adolescents. *Nutrition Research and Practice, 4*(1), 51-57. https://doi.org/ 10.4162/nrp.2010.4.1.51

Soh, P. C. H., Charlton, J. P., & Chew, K. W. (2014). The influence of parental and peer attachment on internet usage motives and addiction. *First Monday, 19*(7). https://doi.org/10.5210/fm.v19i7.5099

Stanik, C. E., Riina, E. M., & McHale, S. M. (2013). Parent–adolescent relationship qualities and adolescent adjustment in two-parent African American families. *Family Relations, 62*(4), 597-608. https://doi.org/10.1111/fare.12020

Tankovsha, H. (2021, February 8). Daily time spent on social networking by internet users worldwide from 2012 to 2020 (in minutes). Statista. https://www.statista.com/statistics/433871/daily-social-media-usage-worldwide/

Thatcher, A., & Goolam, S. (2005). Development and psychometric properties of the Problematic Internet Use Questionnaire. *South African Journal of Psychology, 35*(4), 793-809. https://doi.org/10. 1177/008124630503500410

Winskel, H., Kim, T. H., Kardash, L., & Belic, I. (2019). Smartphone use and study behavior: A Korean and Australian comparison. *Heliyon, 5*(7), https://doi. org/e02158.10.1016/j.heliyon.2019.e02158

Xiuqin, H., Huimin, Z., Mengchen, L., Jinan, W., Ying, Z., & Ran, T. (2010). Mental health, personality, and parental rearing styles of adolescents with an Internet addiction disorder. *Cyberpsychology, Behavior and Social Networking 13*(4), 401-406. https://doi.org/10.1089/cyber.2009.0222

Young, K. S. (1999). Internet addiction: Symptoms, evaluation, and treatment. Innovations in Clinical Practice: *A Source Book, 17*(17), 351-352.

Zafar, B., & Suneel, I. (2018). Relationship between personality traits, attachment styles and internet addiction among Pakistani university students. *International Journal of Social Sciences and Educational Studies, 5*(1), 96-109. https://doi.org/ 10.23918/ijsses.v5i1p96

Zhu, J., & Mok, M. M. (2020). Predictors of students' participation in internet or computer tutoring for additional instruction and its effect on academic achievement. *Journal of Computer Assisted Learning, 36*(5), 729-740. https://doi.org/10.1111/jcal.12440

Zonash, R. (2017). Perceived parental attachment styles predicting self-efficacy in adolescents. *Journal of Behavioral Sciences, 27*(1), 75-92.

Research Article

Screen Time and Attention Deficit Hyperactive Symptoms Among Young Adults in Bangladesh: An Online Cross-Sectional Study During The COVID-19 Pandemic

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Abstract

Objective. Mobile or computer device screening time contributes to developing attention deficit hyperactivity disorder (ADHD). This study assessed the role of screening time in developing ADHD symptoms in adults according to the World Health Organization (WHO) Adult ADHD Self-Report Scale (ASRS).

Method. This research is an internet-based self-reported study on young adult people aged over 18 years amid Covid-19 to collect information on ADHD symptoms and mobile/computer device screening time using a web-based structured questionnaire.

Results. Among the 310 respondents, 124 (40%) had ADHD symptoms. Males with ADHD symptoms (45%) were more than females (35%). Histories of using digital devices with screening time of more than 4 hours a day were seven times more likely to develop ADHD symptoms compared to the respondents who had a history of using digital devices with screening time less than 3 hours (*aOR* 7.5, 95% *CI*: 3.62-24.92).

Conclusion. The occurrence of ADHD symptoms was not uncommon in young adults amid the COVID-19 pandemic. More awareness regarding the negative impact of longer screening time in progressing ADHD among young adults needs to be improved to reduce the risk of developing ADHD.

Keywords. *ADHD, screening time, young adult, prevalence, Bangladesh.*

Foundation University Islamabad

Introduction

ADHD is a neurodevelopmental disorder that shows a combination of persistent mental problems, including trouble in sustaining attention, hyperactivity, and impulsivity (Dos Santos Assef et al., 2007). Although attention deficit hyperactivity disorder (ADHD) causes significant problems in children and adolescents, it can cause behavioral and social interaction problems in adults (Perrin et al., 2001). The overall prevalence of ADHD was 5% globally (Lissak, 2018; Yen et al., 2009).

The COVID-19 pandemic poses a potential threat to public health worldwide. As of January 31, 2022, 376,186,897 cases were reported, with 5,684,323 deaths globally. Individual countries took several measures, including vaccination, lockdown, temporary and long-term closure of public areas, closure of educational institutions, quarantine, physical distancing, and isolation to control the spread (WHO, 2022). Globally, many people, including jobholders, students, and workers, were forced to stay at home for a short to a long period (Sultana et al., 2021). The prevalence of ADHD is increased significantly during the COVID-19 pandemic (Mackolil & Mackolil, 2020; Smith, 2017). Covid-19 has negative impact on mental health (Schäfer et al., 2020). Many studies reported increased anxiety, depressive disorders, distress, poor sleep quality, and suicide during COVID-19 (Panchal et al., 2020; Rajkumar, 2020; Vindegaard & Benros, 2020). During the COVID-19 pandemic, people's daily activities are changed (Vargo et al., 2021). People of all age groups were inclined to use internet-based digital technologies, including computers, smartphones, and video-based communication platforms. People spent more time on computer/mobile devices screens particularly on online social media platforms, to maintain social connectedness during the pandemic. Globally, the majority of the students were encouraged to stay at home and forced to study remotely using video-based online applications (Sun et al., 2020).

Digital media and the internet use are most popular amongst the young generation (Diomidous et al., 2016). With the emergence of the internet and digital gadgets, people become addicted to the screen which can pose to their mental health (Al Tawil et al., 2020). As of January 2021, more than 5 billion people used a mobile phone, and 4.66 billion people had internet access to their devices (Kemp, 2021). The current pandemic exaggerates the use of digital technologies that negatively influenced the behavioral and cognitive development (Small et al., 2020).

In Bangladesh, many people suffered from mental disorders during the pandemic (Ripon et al., 2020; Sifat, 2020). To contain COVID -19 outbreak, the Government of Bangladesh took several measures from the beginning of the outbreak. The countrywide strict lockdown was implemented several times that restricted public movement outside the home. All the schools, colleges, universities, and other educational institutions were completely shut down. Students from all the educational institutes went to the online platform (Shahriar et al., 2021). Institutions were partially reopened (Humayun et al., 2021). From 20 January 2022, all the educational institutes were closed again due to the emergence of a new SARS-CoV-2 (Omicron) variant. All age groups were inclined to internet-based communication amid the Covid-19 pandemic (Araf et al., 2022). COVID-19 pandemic-related behavior changes can affect the development of ADHD symptoms in young adults due to excessive use of digital devices. In Bangladesh, ADHD status among young adults has not been well explored. We aimed to conduct an online-based cross-sectional survey to estimate ADHD occurrence and to assess the role of screening time in developing ADHD symptoms in young adults.

Method

An internet-based self-reported cross-sectional study was conducted to collect information about demographics, digital media, internet use, and screening time using Google Forms. Data collection took place between November and December 2020 in English language. A group of researchers prepared a semi-structured questionnaire and shared it unanimously with the people through social media (Facebook) and email. Those interested in participating in this study were invited to respond. Male and female participants aged over 18 years and having internet connection in their digital devices were included.

The questionnaire included open and close-ended questions to collect demographics (age, gender, and occupation), internet usage, types of digital devices (desktop, smart phone and laptop) screening time (strata: 2-3 hours, 4-6 hours and more than 6 hours), and symptoms of ADHD. According to the World Health Organization (WHO) Adult ADHD Self-Report Scale (ASRS), six specific questions (annex 1) were included in the questionnaire (Kessler et al., 2005).

The score for an individual participant in this survey using the WHO Composite International Diagnostic Interview (CIDI) were calculated (Kessler et al., 2005). It is considered that a person scoring 4 or more is clinically positive for ADHD symptoms according to the ASRS guideline.

A descriptive analysis performed to estimate the proportion, mean, median, standard deviation, 95% confidence interval, and p-value for categorical data. Univariate and multivariate analyses conducted to identify the association between ADHD score and screening time.

Odds ratios (aORs) and adjusted odds ratios were calculated to measure the association. STATA 13 version for data analysis was used.

The research protocol was reviewed and approved by the Research Review Committee (RRC) of the Department of Pharmacy, East West University, Bangladesh. This study complied with the most recent revision of the Helsinki Declaration and followed the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) guidelines. Informed consent was obtained at the beginning of the online survey.

Results

Table 1

Demographic Characteristics of Study Participants (N = 310).

Characteristics	Number of participants (%)
Sex	
Female	156 (50)
Male	154 (50)
Age	
18-25 years	200 (65)
26-33 years	110 (35)
Occupation	
Student	256 (83)
Job	52 (17)
Housewife	1 (1)
Business	1 (1)

A total of 310 respondents took part in this online survey. The majority of the respondents were students (83%), followed by job holders (Table 1). Among the respondents, males and females were equal in numbers, and the majority of them were below 26 years of age.

Table 2

Proportion of ADHD symptoms among respondents (N=310).

Characteristics	Number of participants scored 4 or more for ADHD symptoms (%)		*p*
	Yes	**No**	
Sex			
Female	55 (35)	101 (65)	0.08
Male	69 (45)	85 (55)	
Age			
18-25 years	90 (45)	110 (55)	0.01
26-33 years	34 (31)	76 (69)	
Occupation			
Student	109 (43)	147 (57)	
Job	15 (29)	37 (71)	0.19
Housewife	-	1 (1)	
Business	-	1 (1)	

Of the 310 respondents, 124 (40%) scored four or more for ADHD according to the World Health Organization (WHO) Adult ADHD Self-Report Scale (ASRS). Male respondents with ADHD symptoms were more than females. Respondents between 26-33 years with ADHD symptoms were more than 18-25 years of age. ADHD symptoms were more frequently reported among students than in other groups (Table 2).

Table 3

History of Using Internet, Digital Devices, and Screening Time (N = 310).

Activities	Number of participants (%)
Using digital devices	
Yes	310 (100)
No	-
Types of digital devices	
Smart phone	214 (69)
Laptop	47 (15)
Desktop computer	49 (16)
Daily screening time with digital devices	
Less than 2 hours	1 (1)
2-3 hours	73 (24)
4-6 hours	96 (31)
More than 6 hours	140 (45)
Using internet	
Yes	310 (100)
No	-
Daily screening time with internet	
2-3 hours	74 (24)
4-6 hours	100 (32)
More than 6 hours	136 (44)
Knowledge about ADHD	
Heard about ADHD	141 (45)
Did not hear about ADHD	169 (55)
Ability to diagnose ADHD using ASRS scale	
Aware	255 (82)
No aware	55 (18)

All respondents had a history of using digital devices. The majority of the respondents used smartphones (69%), followed by laptops and desktop computers. Around half of the respondents spent their time with digital devices more than six hours. All respondents had access to the internet, and the screening time for 44% of participants was more than six hours a day. According to their self-reported response, 55% of respondents had no prior knowledge about ADHD disease. More than 80% of the respondents reported that they could diagnose ADHD themselves using ASRS (Table 3).

Table 4

Relationship between Screening Time and ADHD Symptoms in Adult (N=310).

Factors	Number of participants with ADHD (%)	OR	95% CI LL UL	aOR	95% CI LL UL
Sex					
Female	55 (18%)	Ref.		Ref.	
Male	69 (22%)	1.49	0.94-2.35	1.09	0.66-1.79
Age					
26-33 years	34 (11%)	Ref		Ref.	
18-25 years	90 (29%)	1.82	1.11-2.98	1.11	0.62-1.99
Occupation					
Job	15 (5%)	Ref.		Ref.	
Student	109 (35%)	1.82	0.95-3.5	1.31	0.57-2.97
Housewife	-	-	-		
Business	-	-	-		
Types of digital devices					
Desktop computer	13 (4%)	Ref.		Ref.	
Smart phone	90 (29%)	2	1-4	1.21	0.55-2.66
Laptop	21 (7%)	2.2	0.95-5.26	1.26	0.49-2.23
Daily screening time with digital devices					
Less than 2 hours	-				
2-3 hours	7 (2%)	Ref.		Ref.	
4-6 hours	49 (16%)	9.82	4.09-23.6	7.5	3.62-24.92
More than 6 hours	68 (22%)	8.9	3.81-20.76	7.11	2.75-18.39
Daily screening time with internet					
2-3 hours	62 (20%)	Ref.		Ref.	
4-6 hours	49 (16%)	4.51	2.2-9.22	2.21	0.96-5.02
More than 6 hours	13 (4%)	3.93	1.98-7.82	1.68	0.74-3.79

Note. OR: Odds Ratio, aOR: Adjusted Odds ratio

In univariate analysis, male respondents, aged between 18 to 24 years, students, who had a history of using mobile/computer device more than six hours, screening time of more than six hours a day were more likely to develop ADHD symptoms compared to respondents who had not these characteristics. In the final multivariate logistic regression analysis, respondents having a history of using mobile/computer device with screening time more than four hours a day were seven times more likely to develop ADHD compared to the respondents who had a history of using mobile/computer device with screening time less than 3 hours (aOR 7.5, 95% CI: 3.62-24.92) (Table 4).

Discussion

This online-based study explored the association between ADHD symptoms and the usage of digital media and the internet with screening time among adults during the COVID-19 pandemic. We found that around 40% of the adult respondents had ADHD symptoms, which is higher than other countries' reports. The prevalence of ADHD was lower in low-income countries (1.9%) compared with high-income countries (4.2%). ADHD prevalence was reported in France (5.6%), Australia (1.1%), and Riyadh (11%) (Alrahili et al., 2019; Ebejer et al., 2012).

Though ADHD is solely considered a childhood disorder (Spencer et al., 1998), our study findings suggest that adult people with ADHD symptoms were not uncommon. The majority of ADHD was identified in aged 18-24 years (3.6%) and 25-34 years (3.6%) which is in agreement with our study findings (Fayyad et al., 2007). However, another study identified that adult ADHD had a significant negative association with age which suggests ADHD is a persistent problem in childhood (Simon et al., 2009). During the COVID-19 pandemic, people of all age groups were forced to restrict their movement and activities which may be attributed to spending more screening time in virtual media (Aguilar-Farias et al., 2021). Nevertheless, other social and cultural factors, including employment and financial difficulties, interpersonal problems, and emotional and educational outcomes, could play an essential role in developing ADHD in adults (Ginsberg et al., 2014; Volkow & Swanson, 2013).

The proportion of ADHD symptoms found in this study was higher in males than female. Similar findings have also been documented in a study in Bangladesh, where the prevalence of ADHD is higher in young adult males (75%) (Hasan et al., 2016). Other countries also reported a comparatively higher prevalence in males (4.1%) than in females (2.7%) regarding young adults. However, the difference was not significant (Fayyad et al., 2007). Another study in Canada where more men ($n = 287, 58.8\%$) are diagnosed with ADHD than women ($n = 201, 41.2\%$) (Hesson & Fowler, 2018). Bangladeshi men who have access to digital media are more likely to experience ADHD symptoms than Bangladeshi women, who may not have access to digital media or may be restricted in their screen time due to household duties.

This study identified that students (83%) were more likely to develop ADHD symptoms than other professional groups.

However, a multi-country study reported that ADHD prevalence was higher in the employed group (3.5%) than in the student (2.2%). In Turkey, the ADHD prevalence was 6.1% among university students (Kavakci et al., 2012). The higher prevalence in students could be due he easy access to the internet, addiction to video games, and social media, and prolonged internet-based education platforms during the COVID-19 lockdown in Bangladesh. So, the run time of the digital screen increased in the case of students. Excessive digital device use and lack of physical activity make this age group more vulnerable to ADHD.

Prolonged screening time because of internet use can play a vital role in developing ADHD symptoms. One possible reason is that the blue light of smartphones or other digital media imbalances the melatonin, which impacts emotional behavior, the sleep cycle which directly impacts reduced attention and hyperactivity (Lissak, 2018). The faster social media and tremendous data info in front of the eyes triggered the overstimulation and bombardment of their neurotransmitters and hormones (Lissak, 2018). Moreover, digital media can be attributed to repetitive attentional shifts and multitasking, impairing executive functioning and leading to ADHD symptoms (Lissak, 2018). Our study found that one-half of the respondents used digital devices and the internet for more than 6 hours a day, and most of them had smartphones. A previous study in Bangladesh found that 35.2% of respondents liked to stay on the internet for more than 3 hours a day, and 66.5% used the internet on their mobile phones (Hassan et al., 2020). In Bangladesh, the overall number of internet subscribers reached 113.73 Million at the end of December 2021 which is around 65% of the overall population; among them, 123. 82 million were mobile internet subscribers (BTRC, 2021).

This study found that male students aged between 18 to 24 years and who have a history of using smartphones with the internet for more than six hours were more likely to develop ADHD than respondents who did not have these characteristics. However, a study in Taiwan showed the opposite results where the odds ratio of ADHD for internet addiction was significantly higher in females (OR = 1.39, 95% *CI* =1.28–1.52) than in males (OR = 1.23, 95% *CI* =1.13–1.34) (Yen et al., 2009). A study in USA showed that odds of ADHD diagnosis were lower among all older age groups compared with patients aged 18 to 24 years (patients aged 55-64 years: OR, 0.375; 95% *CI*, 0.36-0.38; *P* < .001; patients aged >65 years: OR, 0.09; 95% *CI*, 0.08-0.10; *P* < .001) (Chung et al., 2019).

A study found that college students screening positive for adult ADHD had a higher odds ratio (OR = 2.84, 95% CI =2.09–3.88) of having internet addiction (Yen et al., 2009). One systemic review study suggests that patients with internet addiction were 2.51 times more likely to have ADHD than the non-internet addiction groups was (OR 2.51, 95%CI 2.09, 3.02) (Wang et al., 2017). Another study of 304 high school students in Turkey found that 11% of the population had internet addiction and scored high in ADHD diagnosis evaluation, Evaluation Inventory, and Beck Depression Inventory (Gundogar et al., 2012).

The study revealed that respondents with a history of using digital devices with prolonged screening time posed a risk of developing ADHD symptoms. A similar result has also been documented in a study where a statistically significant but modest association was found between a higher frequency of digital media use and subsequent symptoms of ADHD (Ra et al., 2018). Another study found that overtiredness from digital media use is likely to exacerbate ADHD symptoms as poor sleep can lead to hyperactivity and sensation seeking (Steinfeld et al., 2015). A comprehensive cross-sectional study in Norway surveyed 9,846 adolescents, ages 16 to 19 years, on the type and frequency of electronic device use at bedtime and hours of screen time during leisure time; a higher frequency of screen-time at bedtime was associated with increased risk of short sleep duration (Hysing et al., 2015). This eventually leads to suppression of melatonin production due to the bright and blue light exposure, which can ultimately disrupt the individual's circadian cycle and causes sleep disturbance which is connected to internalizing and externalizing behaviors that are the profound stage of ADHD symptoms predisposition (Falbe et al., 2015; Grover et al., 2016).

Limitations

This study has some limitations; among them, one is self-reporting data. This study doesn't reflect the representation of all the young adults in Bangladesh, because of selection bias and sort of convenient and snow-ball sampling method. Clinical assessment to confirm ADHD was not performed. The survey findings may not be generalized for the pre-post Covid-19 pandemic as this survey was conducted during the COVID-19 pandemic.

Conclusions

The occurrence of ADHD was considerably higher in adults amid the COVID-19 pandemic. Using digital devices with screening time for more than four hours was identified as a risky practice to develop ADHD symptoms. Further medical and psychiatry assessments are needed to understand the burden of ADHD more accurately in adults or young adults. Awareness about the negative impact of excessive digital media use and prolonged screening time in developing ADHD symptoms should be increased through mass campaigns. Further studies with larger sample size are necessary to assess the effect of screening time on ADHD in young adults.

Declaration

References

Aguilar-Farias, N., Toledo-Vargas, M., Miranda-Marquez, S., Cortinez-O'Ryan, A., Cristi-Montero, C., Rodriguez-Rodriguez, F., Martino-Fuentealba, P., Okely, Anthony, D., & del Pozo Cruz, B. (2021). Sociodemographic predictors of changes in physical activity, screen time, and sleep among toddlers and preschoolers in Chile during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health, 18*(1), 176.

Al Tawil, L., Aldokhayel, S., Zeitouni, L., Qadoumi, T., Hussein, S., & Ahamed, S. S. (2020). Prevalence of self-reported computer vision syndrome symptoms and its associated factors among university students. *European Journal of Ophthalmology, 30*(1), 189-195.

Alrahili, N., Aldakheel, A. A., AlUbied, A., Almalki, A., AlBarrak, A., Al-Dosari, B., Alhemaidi, W., Alamro, A. S., & Alageel, A. A. (2019). Prevalence of adult attention deficit hyperactivity disorder among medical students in Riyadh City. *Int J Med Dev Ctries, 3*, 246-251.

Araf, Y., Akter, F., Tang, Y. d., Fatemi, R., Parvez, S. A., Zheng, C., & Hossain, G. (2022). Omicron variant of SARS-CoV-2: Genomics, transmissibility, and responses to current COVID-19 vaccines. *Journal of Medical Virology. 94*(5),1825-1832.

BTRC. (2021). Bangladesh Telecommunication Regulatory Commission. Available from: *http://www.btrc.gov.bd* (Accessed February 10, 2022).

Chung, W., Jiang, S.-F., Paksarian, D., Nikolaidis, A., Castellanos, F. X., Merikangas, K. R., & Milham, M. P. (2019). Trends in the prevalence and incidence of attention-deficit/hyperactivity disorder among adults and children of different racial and ethnic groups. *JAMA network open, 2*(11), e1914344-e1914344.

Diomidous, M., Chardalias, K., Magita, A., Koutonias, P., Panagiotopoulou, P., & Mantas, J. (2016). Social and psychological effects of the internet use. *Acta informatica medica, 24*(1), 66.

Dos Santos Assef, E. C., Capovilla, A. G. S., & Capovilla, F. C. (2007). Computerized Stroop test to assess selective attention in children with attention deficit hyperactivity disorder. *The Spanish Journal of Psychology, 10*(1), 33-40.

Ebejer, J. L., Medland, S. E., Van Der Werf, J., Gondro, C., Henders, A. K., Lynskey, M., Martin, Nicholas, G., & Duffy, D. L. (2012). Attention deficit hyperactivity disorder in Australian adults: prevalence, persistence, conduct problems and disadvantage. *PLoS One. 2012; 7*(10), e47404.

Falbe, J., Davison, K. K., Franckle, R. L., Ganter, C., Gortmaker, S. L., Smith, L., Land, T., & Taveras, E. M. (2015). Sleep duration, restfulness, and screens in the sleep environment. *Pediatrics, 135*(2), e367-e375.

Fayyad, J., De Graaf, R., Kessler, R., Alonso, J., Angermeyer, M., Demyttenaere, K., De Girolamo, G., Haro, J. M., Karam, Elie, G., & Lara, C. (2007). Cross-national prevalence and correlates of adult attention-deficit hyperactivity disorder. *The British Journal of Psychiatry, 190*(5), 402-409.

Ginsberg, Y., Quintero, J., Anand, E., Casillas, M., & Upadhyaya, H. P. (2014). Underdiagnosis of attention-deficit/hyperactivity disorder in adult patients: a review of the literature. *The Primary Care Companion for CNS Disorders, 16*(3), 23591.

Grover, K., Pecor, K., Malkowski, M., Kang, L., Machado, S., Lulla, R., Heisey, D., & Ming, X. (2016). Effects of instant messaging on school performance in adolescents. *Journal of Child Neurology, 31*(7), 850-857.

Gundogar, A., Bakim, B., Ozer, O., & Karamustafalioglu, O. (2012). P-32-The association between internet addiction, depression and ADHD among high school students. *European Psychiatry, 27*(S1), 1-1.

Hasan, C. M. M., Islam, M. M., Mahib, M. M. R., & Arju, M. A. C. (2016). Prevalence and assessment of biochemical parameters of attention-deficit hyperactivity disorder children in Bangladesh. *Journal of Basic and Clinical Pharmacy, 7*(3), 70.

Hassan, T., Alam, M. M., Wahab, A., & Hawlader, M. D. (2020). Prevalence and associated factors of internet addiction among young adults in Bangladesh. *Journal of the Egyptian Public Health Association, 95*(1), 1-8.

Hesson, J., & Fowler, K. (2018). Prevalence and correlates of self-reported ADD/ADHD in a large national sample of Canadian adults. *Journal of Attention Disorders, 22*(2), 191-200.

Humayun Kabir, M., Hasan, K., & Bhuya, M. T. R. (2021). Recommendations for school-going students post CoVid-19 in Bangladesh. *Bioinformation, 17*(4), 500.

Hysing, M., Pallesen, S., Stormark, K. M., Jakobsen, R., Lundervold, A. J., & Sivertsen, B. (2015). Sleep and use of electronic devices in adolescence: results from a large population-based study. *BMJ Open, 5*(1), e006748.

Kavakci, O., Kugu, N., Semiz, M., Meydan, F., Karsikaya, S., & Dogan, O. (2012). Prevalence of attention-deficit/hyperactivity disorder and co-morbid disorders among students of Cumhuriyet University. *The European Journal of Psychiatry, 26*(2), 107-117.

Kemp, S. (2021). Digital 2021: Global overview report. Available from: *https://datareportal.com/reports/digital-2021-global-overview-report* (Accessed February 4, 2022).

Kessler, R. C., Adler, L., Ames, M., Demler, O., Faraone, S., Hiripi, E. V. A., Howes, M. J., Jin, R., Secnik, K., & Spencer, T. (2005). The World Health Organization Adult ADHD Self-Report Scale (ASRS): a short screening scale for use in the general population. *Psychological Medicine, 35*(2), 245-256.

Lissak, G. (2018). Adverse physiological and psychological effects of screen time on children and adolescents: Literature review and case study. *Environmental Research, 164,* 149-157.

Mackolil, J., & Mackolil, J. (2020). Addressing psychosocial problems associated with the COVID-19 lockdown. *Asian Journal of Psychiatry, 51,* 102156.

Panchal, N., Kamal, R., Orgera, K., Cox, C., Garfield, R., Hamel, L., & Chidambaram, P. (2020). The implications of COVID-19 for mental health and substance use. *Kaiser family Foundation,* 21.

Perrin, J. M., Stein, M. T., Amler, R. W., Blondis, T. A., Feldman, H., Meyer, B., Shaywitz, BA, & Wolraich, M. L (2001). Clinical practice guideline: treatment of the school-aged child with attention-deficit/hyperactivity disorder. *Pediatrics, 108*(4), 1033-1044.

Ra, C. K., Cho, J., Stone, M. D., De La Cerda, J., Goldenson, N. I., Moroney, E., Tung, I., Lee, S. S., & Leventhal, A. M. (2018). Association of digital media use with subsequent symptoms of attention-deficit/hyperactivity disorder among adolescents. *JAMA, 320*(3), 255-263.

Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. *Asian Journal of Psychiatry, 52,* 102066.

Ripon, R. K., Mim, S. S., Puente, A. E., Hossain, S., Babor, M. M. H., Sohan, S. A., & Islam, N. (2020). COVID-19: psychological effects on a COVID-19 quarantined population in Bangladesh. *Heliyon, 6*(11), e05481.

Schäfer, S. K., Sopp, M. R., Schanz, C. G., Staginnus, M., Göritz, A. S., & Michael, T. (2020). Impact of COVID-19 on public mental health and the buffering effect of a sense of coherence. *Psychotherapy and Psychosomatics, 89*(6), 386-392.

Shahriar, S. H. B., Arafat, S., Sultana, N., Akter, S., Khan, M. M. R., Nur, J. E. H., & Khan, S. I. (2021). The transformation of education during the corona pandemic: exploring the perspective of the private university students in Bangladesh. *Asian Association of Open Universities Journal. 16(2),* 161-176.

Sifat, R. I. (2020). COVID-19 pandemic: Mental stress, depression, anxiety among the university students in Bangladesh. *Soc Psychiatry,* 1(2).

Simon, V., Czobor, P., Bálint, S., Mészáros, A., & Bitter, I. (2009). Prevalence and correlates of adult attention-deficit hyperactivity disorder: meta-analysis. *The British Journal of Psychiatry, 194*(3), 204-211.

Small, G. W., Lee, J., Kaufman, A., Jalil, J., Siddarth, P., Gaddipati, H., Moody, T. D., & Bookheimer, S. Y. (2020). Brain health consequences of digital technology use. *Dialogues in Clinical Neuroscience, 22*(2), 179.

Smith, M. (2017). Hyperactive around the world? The history of ADHD in global perspective. *Social History of Medicine, 30*(4), 767-787.

Spencer, T., Biederman, J., Wilens, T. E., & Faraone, S. V. (1998). Adults with attention-deficit/hyperactivity disorder: a controversial diagnosis. *Journal of Clinical Psychiatry, 59*(7), 59-68.

Steinfeld, B., Scott, J., Vilander, G., Marx, L., Quirk, M., Lindberg, J., & Koerner, K. (2015). The role of lean process improvement in implementation of evidence-based practices in behavioral health care. *The Journal of Behavioral Health Services & Research, 42*(4), 504-518.

Sultana, A., Tasnim, S., Hossain, M. M., Bhattacharya, S., & Purohit, N. (2021). Digital screen time during the COVID-19 pandemic: a public health concern. *F1000Research, 10*(81), 81.

Sun, L., Tang, Y., & Zuo, W. (2020). Coronavirus pushes education online. *Nature Materials, 19(6),* 687-687.

Vargo, D., Zhu, L., Benwell, B., & Yan, Z. (2021). Digital technology use during COVID-19 pandemic: A rapid review. *Human Behavior and Emerging Technologies, 3*(1), 13-24.

Vindegaard, N., & Benros, M. E. (2020). COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain, Behavior, and Immunity, 89,* 531-542.

Volkow, N. D., & Swanson, J. M. (2013). Adult attention deficit–hyperactivity disorder. *New England Journal of Medicine, 369*(20), 1935-1944.

Wang, B., Yao, N., Zhou, X., Liu, J., & Lv, Z. T. (2017). The association between attention deficit/hyperactivity disorder and internet addiction: a systematic review and meta-analysis. *BMC Psychiatry, 17*(1), 1-12.

WHO. (2022). WHO Coronavirus (COVID-19). *https://covid19.who.int/.* (Accessed February 4, 2022).

Yen, J. Y., Yen, C. F., Chen, C. S., Tang, T. C., & Ko, C. H. (2009). The association between adult ADHD symptoms and internet addiction among college students: the gender difference. *Cyberpsychology & Behavior, 12*(2), 187-191.

Intimacy and Emotional Well-Being in Partners Living With Polycystic Ovarian Syndrome Women

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Abstract

Objective. PCOS is a persistent medical condition that can act as a vulnerability to psychological well-being and reduce marital satisfaction. Chronic illness that makes an individual vulnerable to poorer health greatly reduces marital satisfaction and intimacy in a relationship. This study aimed to find out the association between emotional intimacy, social intimacy, and emotional well-being in partners living with PCOS women.

Method. The study used a correlational cross-sectional research design. The sample consisted of N=76 couples of PCOS women and their husbands. Emotional Intimacy Scale (Sinclair & Dowdy, 2005), Miller Social Intimacy Scale (Miller & Lefcourt, 1982), and Warwick-Edinburgh Mental Well-Being Scale (Teede, et al. 2018)were used for data collection from men and PCOSQOL Scale(Williams, et al. 2018) was used for assessment of HRQOL from women.

Results. Pearson product-moment correlation analysis revealed that HRQOL of women is significantly positively correlated with emotional intimacy, social intimacy, and emotional well-being of partners living with PCOS women. Furthermore, it was revealed that Emotional intimacy and social intimacy are significantly positively correlated with emotional well-being. Hierarchal regression analysis found emotional intimacy and social intimacy as significant positive predictors of emotional well-being.

Conclusion. It was a unique contribution to the field of health, family, and counseling psychology. It can help in understanding problems associated with management and adherence in PCOS women. It also highlights the impact of these types of metabolic chronic illnesses on the family members and their spouses. It is a very initial study that could act as a groundwork that could help healthcare providers to raise awareness about the psychological well-being of couples where women are suffering from PCOS, and design and create couple-based interventions for PCOS women and their partners.

Keywords. *Marital quality, emotional intimacy, social intimacy, hrqol, emotional well-being.*

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Introduction

Polycystic ovarian syndrome is a common endocrine disease of reproductive-age women characterized by an irregular menstrual cycle, hirsutism, acne, obesity, and infertility (Rao et al., 2020) . Other features of PCOS involve insulin resistance, metabolic abnormalities, and hormonal imbalance leading to increased risk of Type 2 diabetes, cardiovascular disease (CVD), and infertility that significantly affect a women's quality of life. Diagnostic criteria for PCOS by the National Institute of Health in 1990, Rotterdam in 2003, and Androgen Excess Society and PCOS Society in 2006 include all three features of a) Chronic Oligo/anovulation, b) Clinical or biochemical signs of hyperandrogenism, and c) Polycystic ovaries and the exclusion of other etiologies (Cushing's syndrome, androgen-secreting tumors, congenital adrenal hyperplasia). It is estimated to effects 6-22% of the women in their reproductive years depending upon the criteria used (Azziz et al., 2016; Escobar-Morreale, 2018).

PCOS is prevalent across the globe, first diagnosed in Caucasians. In 2018, a new international evidence-based guideline for PCOS reported ethnic variation in presentations and manifestations of the disease (Teede et al., 2018). The prevalence of PCOS has been reported highest among South Asian women who migrated to developed countries and Australian Aboriginal women. Both women's populations reported increased Body Mass Index. There is also a clear difference in cut-off scores for clinical features e.g. for Hirsutism i.e. excessive hairs on androgen-dependent areas, South Asian and Middle Eastern women scored higher cut-off as compared to women of East Asian origin. Metabolic dysfunction i.e. insulin resistance is also high in South Asian women as compared to other populations. Except for quality of life, psychological manifestations of the disease are not well-discovered because of culturally bound perspectives of infertility (Dokras et al., 2018).

In Pakistan, several recent studies have been done about the knowledge and prevalence of PCOS. The prevalence study Zafar et al. (2019) found prevalene study PCOS to be the most prevalent gynecological disorder among reproductive-age women with a ratio of 54.41% followed by endometriosis, cervical cancer, and breast cancer. In Lahore frequency of polycystic ovary syndrome was assessed among students of the military hospital and found that 19.4% of females met the Rotterdam criteria of PCOS (Ahmad et al., 2020).

Another PCOS prevalence study done among the students of public universities in Quetta revealed a prevalence rate of 17.5% (Haq et al., 2017). All these studies revealed that the prevalence of PCOS is increasing over time.

Treatment of PCOS in women mainly focuses on treating medical conditions like irregular periods and other physical health problems. Psychological aspects of PCOS are rarely discussed with its sufferers (Niet et al., 2012). PCOS greatly affects the quality of life and psychological well-being of women due to depression, anxiety, body dissatisfaction, lack of sexual satisfaction, infertility, and reduced interpersonal functioning. Elsenbruch et al. (2003) had explored the determinants of emotional distress in PCOS women. They recruited 143 untreated PCOS women from different outpatient clinics in Germany. The inclusion criterion was NIH 1990 diagnostic criteria for PCOS. Different self-reported measures were used to assess psychological distress, health-related quality of life, and sexual satisfaction. 15.4% of patients out of the total sample had possible psychological and emotional distress. High body mass index was associated with decreased quality of life and sexual satisfaction. The conclusion was most emotional problems go undetected and untreated in PCOS women. These psychological problems greatly diminish the quality of life in PCOS women.

Polycystic ovary syndrome in married women causes even more damage. When a member of the family goes through some stressful condition, other members in many also get affected. It greatly influences affected individuals psychologically that in turn disrupts family functioning. Marital communication, marital satisfaction, and intimacy in close relationships are significantly get affected by such stressors (Story & Bradbury, 2004; Repetti et al., 2009). Revenson and DeLongis (2011) argued that diagnosis of chronic illness opens the door for multiple stressors for the couple which is why chronic illness should be perceived as an interpersonal experience rather than an individual phenomenon. Several empirical pieces of evidence from the past explored the impact of chronic illness on the spouse (Manne & Badr, 2008). A study by (Dorval et al., 2005) provides evidence of emotional challenges faced by partners of chronically ill patients. They have observed that spouses of chronically ill had to provide support to partners along dealing with their emotional distress. Although the illness is thought to bring couples closer together sometimes it can cause damage to marital relationships.

Theoretical Framework

Moos and Schaefer (1984) Crisis Theory explains how problems or crises in life impact the patterns of our personal and social relationships with others. Crisis theory holds the view that individuals try to maintain a state of balance or equilibrium. When this state of equilibrium is disrupted by any external factor the individual tries to restore the balance by employing ways that bring success. When an individual's psychological resources become insufficient or inadequate to deal with the problem, the crisis begins. This state of crisis brings psychological distress to individuals and people experience anxiety and fear. Knafl and Deatrick (2002) said as people cannot tolerate this crisis for a long time so they adopt behavioral patterns that normalize their life as much as possible. The crisis is not itself unhealthy or pathological but a turning point in an individual's life.

Illness is a form of crisis. When a person contracts a chronic illness, he copes with the illness by focusing on the positive aspects of the disease (Lobel et al., 1992). Patients who seek social support, and emotionally detach themselves from the disease experience less psychological distress, on the other hand, psychological distress is common among those who use the avoidance coping approach. They may use cognitive and behavioral avoidance strategies such as wishful thinking or binge eating. The uncertainty about the disease status of chronic illness puts the patient at the risk of developing emotional problems. In this scenario, maintaining personal relationships becomes another challenge for chronically ill patients. Chronic illness changes the person and meeting the expectations of the friends, family and intimate relationship put a strain on the individual. Moreover, as chronic illness patients do not fit in sick role criteria as in acute illnesses, it profoundly changes family expectations as well (Wiley & Camacho, 1980).

Rationale of the Study

To date, most empirical evidence on PCOS in an indigenous context mainly addresses prevalence, knowledge, and awareness in females as mentioned above (Gul et al., 2014; Zafar et al., 2019; Naz et al., 2020). Even in an international context, recent literature on PCOS women lacks in providing experiences of their partners. All previous research is done on PCOS women only and explores their personal experience and quality of life (Pekhlivanov et al., 2006; Amini et al., 2012; Shishehgar et al., 2016; Sánchez-Ferrer et al., 2020).

In eastern and south Asian contexts PCOS women exhibit much more symptoms (Wijeyaratne et al., 2002) as compared to Caucasian or East Asian Chinese women having the same condition (Lookingbill et al., 1991). So it was intended in our study to explore how living with PCOS women affects the emotional well-being of their partners, intimacy, and marital quality of their relationship. The present study aimed to explore how PCOS-related manifestations in married women impact their partners' marital satisfaction and intimacy. It was also intended to explore how living with PCOS women impacts the emotional well-being of their partners. This study will add to the literature on the impact of chronic illness on interpersonal relationships in the context of PCOS.

The present study aimed to fulfill the following objectives:

1. To investigate the relationship between emotional intimacy, social intimacy, and emotional well-being in partners living with PCOS women.

2. To investigate the predictive role of emotional and social intimacy in the emotional well-being of PCOS women's partners.

3. To investigate the predictive role of HRQOL of PCOS women in the emotional well-being of their partners.

Hypotheses

The present study hypothesized that:

1. There is likely to be a positive relationship between emotional intimacy, social intimacy, and emotional well-being in partners of PCOS women.

2. There is likely to be a positive relationship between HRQOL in PCOS women and the emotional intimacy, social intimacy, and emotional well-being of their partners.

3. Emotional intimacy and social intimacy will likely be positive predictors of emotional well-being in partners of PCOS women.

4. HRQOL in polycystic ovarian syndrome women will likely be a significant predictor of the emotional well-being of their partners.

Method

Purposive sampling and snowball sampling technique was used to recruit subjects. A sample of 76 couples (Male age, M=33.08(6.24) and Female age, M=37.12(5.85) were selected to participate in the study. The data was collected from different private gynecologists' clinics and healthcare units. Out of 76 couples, only 26 couples have children and 51 couples were childless. 55 couples were from Gujranwala, 13 from Islamabad, and 8 from Lahore. The average duration of marriage was 6.86 years.

Assessment Measures

Duration of marriage, type of marriage, children, age, family system, and education level were assessed in demographics. The study uses the following assessment measures;

The Emotional Intimacy Scale. Sinclair and Dowdy (2005) developed this scale which assess emotional intimacy. It consists of 5-items scored on a 5-point Likert scale. It measures the degree of closeness that allows sharing of personal feelings accompanied by the expectation of understanding and demonstration of caring. In the present study, the internal reliability of the emotional intimacy scale was α=.92.

The Social Intimacy Scale. It was developed by Miller and Lefcourt (1982). A 17-item scale allows for the measurement of closeness and intimacy in close relationships like spouses, partners, or friends. In the present study, the internal consistency of MSIS was .92.

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS). It was developed in an attempt to measure positive mental health (Tennant et al., 2007). It consists of 14 positively worded items that allow capturing a wide conception of well-being, including affective-emotional, cognitive-evaluative aspects of well-being and psychological functioning. In the present study, the calculated internal consistency for the WEMWBS was α=.92.

The Polycystic Ovarian Syndrome Quality of Life Scale (Williams et al., 2018). It was used to screen female participants for health-related quality of life and physical and psychological manifestations of the disease. The scale consists of 35 items. In the current study, the PCOSQOL calculated reliability was also excellent which is α=.95. Subscales reliabilities in the present study were also excellent; Impact of PCOS scale α=.92, infertility scale α=.95, hirsutism scale α=.94, and mood sale α=.83.

Procedure

Females who visited healthcare clinics or hospitals were assessed in the present study. Personal contacts were also used to find PCOS women. Only those females who were diagnosed with PCOS by gynecologists were recruited. PCOS women who visited clinics with their husbands were debriefed about the purpose of the study. After the debriefing consent form was taken from the couples. PCOSQOL scale was administered to PCOS women to assess health-related quality of life. Later, data was collected from the partners of selected PCOS women on marital quality, intimacy, and emotional well-being scales. Fearing the ongoing COVID situation in the country many hospitals didn't allow for data collection. Out of N=76 couples, 15 couples provided data through Google forms. In total, 55 couples were recruited from Gujranwala, 13 from Islamabad, and 8 from Lahore. After the collection of data, data was entered and results were analyzed using IBM SPSS (Statistical Package for the Social Sciences) version 21.

Results

Pearson Product Moment Correlation analysis was carried out to test the relationship between emotional intimacy and social intimacy with emotional well-being in partners of PCOS women. Results showed that there was a significant positive relationship between emotional intimacy (r=.59**) and social intimacy (r=72**) with emotional well-being i.e. partners that experience higher emotional intimacy in their relationship will have higher emotional well-being and vice versa. Similarly, higher social intimacy is associated with higher emotional well-being. The correlational analysis also found a significant positive relationship between HRQOL in PCOS women and emotional intimacy (r=.41**), social intimacy (r=.56**), and emotional well-being (r=.54**) of their partners. It showed that Health-related Quality of Life in Polycystic Ovarian Syndrome women had a direct association with the emotional intimacy, social intimacy, and emotional well-being of their partners.

Table 1

Correlation between HRQOL, Emotional, and Social Intimacy, and Emotional Well-Being (N=76)

Variables	1	2	3	4	5	6	7	8
1. HRQOL		.91**	.76**	.56**	.75**	.41**	.56**	.54**
2. Impact of PCOS			.55**	.35**	.77**	.28*	.54**	.47**
3. Infertility				.25*	.37**	.37**	.42**	.45**
4. Hirsutism					.24*	.42**	.31**	.29*
5. Mood						.18	.37**	.39**
6. Emotional Intimacy							.60**	.59**
7. Social Intimacy								.72**
8. Emotional Well-Being								

Note. $*p < .05$, $**p < .01$; HRQOL= Health related quality of life

Hierarchal regression analysis found the predictive role of emotional intimacy and social intimacy in the emotional well-being of partners of PCOS women. The results revealed that emotional intimacy and social intimacy as significant predictors of emotional well-being.

Table 2

Multiple Regression Analysis Prediction of Emotional Well-being by HRQOL, Emotional Intimacy, and Social Intimacy (N=76)

Predictors	B	95% CI for B LL	95% CI for B UL	SE	β	R^2	ΔR^2
Step 1						.19	.39
Constant	37.24***	22.33	52.16	7.48			
Duration of Marriage	.13	-.31	.58	.23	.08		
Type of Marriage	2.82	-2.3	7.94	2.57	1.10		
Children	1.86	2.35	6.06	2.11	.11		
Family System	-.39	-5.68	4.89	2.65	-.02		
Step 2						.77	.56***
Constant	-1.01	-14.19	12.17	6.60	_		
HRQOL	.05	-.01	.10	.03	.17		
Emotional Intimacy	.31*	.01	.59	.15	.21*		
Social Intimacy	.23***	.13	.34	.05	.50***		

Note. HRQOL= Health-related Quality of Life; CI = confidence interval; LL = lower limit; UL = upper limit; $*p < .05$, $**p < .01$, $***p < .001$

The above table showed that in the first step covariates of the duration of the marriage, type of marriage, children, and family system were added. In the second step HRQOL, emotional intimacy, and social intimacy were added in described sequential order. Step 1 displays model 1 of hierarchal regression analysis. It demonstrates the variance in outcome variables i.e., emotional well-being by interaction effect of the duration of the marriage, type of marriage, children, and family system. These covariates only explain 39% of the variance in emotional well-being. Step 2 demonstrates model 2 of hierarchal regression analysis. Model 2 is statistically significant ($\Delta R^2=.56$, $F(3, 68) = 31.57$, $p=.000$) and explains 56% of the unique variance in the outcome variable. The overall model significance is $R^2=.77$, ($F(7, 68)=14.48$, $p=.000$).

The coefficients of emotional intimacy ($\beta=.21$, $p=.04$) and social intimacy ($\beta=.50$, $p=.000$) are significant which revealed a positive relationship between emotional intimacy, social intimacy, and emotional well-being. It means higher the emotional and social intimacy in PCOS women partners higher will be their emotional well-being.

Discussion

The present study found a positive relationship between HRQOL in polycystic ovarian syndrome women and emotional intimacy and social intimacy and the emotional well-being of their partners. Eriksson et al. (2019) recent qualitative research from the field of psychology explored the experiences of the partners who live with and provide informal care to their partners. The analysis of 16 Swedish partners' interviews provided four themes; management of everyday life challenges, managing life by using own capacities and seeking social support, appreciating good things in life, and challenges in adapting to recurrent changes and uncertain future. They have explored that providing informal care to their spouses and facing challenges in everyday life presented physical and psychological costs to them as they have very limited personal time for themselves. In these circumstances, they try to seek support from their informal social circle than formal care providers. In our study, we found that HRQOL in PCOS women significantly affects the emotional intimacy and social intimacy in their partners which decreases with a decrease in health-related quality of life in PCOS women which greatly affects the emotional well-being of their partners.

Pereira et al. (2012) study on dyadic adjustment, quality of life, and psychological morbidity in chronically ill psoriasis patients and their spouses found that the relationship between family coping, psychological morbidity, body image, dyadic adjustment, and quality of life. They gathered data on family coping, psychological morbidity, body image, dyadic adjustment, and quality of life from psoriasis patients and families coping with psychological morbidity, and dyadic adjustment from their partners. They found positive associations between dyadic adjustment, psychological morbidity, and family coping in patients and their partners were found. They also found that lower HRQOL in patients is related to higher levels of depressive and anxious symptoms in their partners. It showed that HRQOL had an impact on the emotional well-being of their partners, which we also found in our study. These findings from the past are in line with our current findings in PCOS women and their partners.

Our current research also found emotional intimacy and social intimacy as significant predictors of emotional well-being in PCOS women partners. A recent study by (Czyżowska et al., 2020) explored the significance of intimate relationships for the emotional well-being of young adults. They gathered data from 23 to 37 years old men (214) and women (217). They aimed to explore how being in a relationship, intimacy levels, and the quality of intimate relationships affect an individual's sense of well-being. They confirmed the proposed relationship presented and found that being in an intimate relationship and the quality of the relationship is directly related to an individual's emotional well-being/eudaimonic well-being for men and women. In our study, we also found that emotional intimacy and social intimacy are positive predictors of emotional well-being in partners of PCOS women.

Married individuals experience relationship difficulties when one partner is diagnosed with chronic illness. Palmer et al. (1984) research on coping strategies in married individuals in response to chronic illness found that coping responses varies in couples who have fixed roles as compare to those inflexible roles. Those who were in fixed roles or new in relationships and were not certain about their roles have more difficulty in treatment adherence and disease management. In comparison, those who were flexible in their role performance adhere more easily to the new treatment regime. Differences in the perception of disease status by the patient himself/ herself and his/her partner and lack of affective involvement were major contributors to misunderstanding and feelings of abandonment in married couples.

In a collectivistic culture like Pakistan, although the family structure and gender roles scenarios are changing with recent advancement in technology that is bringing radical change in society, still couples have fixed roles when it comes to household and responsibilities. When one of the spouse in these types of couples contract chronic illness they failed to meet the demands of that particular illness. Although couples are getting aware of PCOS disease but changing their roles in response to disease management that requires not only adherence but a lifestyles change in the lives of women, many fail.

Moreover, the emotional toll of this disease on the psychological well-being of women often worsens the situation. Mood swings, depression, anxiety, body image issues, sexual dissatisfaction in PCOS can greatly undermine their quality of life. This reduced quality of life in PCOS women can significantly impact their family members and their partners are not immune to it. As couples are treated as a unit, so PCOS women HRQOL can greatly destabilize their relationship with their partners. Marital quality, emotional intimacy, and social intimacy can be reduced and it can greatly impact the emotional well-being of their partners. Thus chronic illness act as a crisis for such couples who failed to meet the demands of the disease due to their poor coping skills and personal resources.

Conclusion

It is concluded that like other chronic illnesses polycystic ovarian syndrome in women had emotional consequences for their partners. Although PCOS doesn't require formal or informal caregiving from their partner psychological manifestations of the disease put women at risk of poor health-related quality of life which greatly undermines the quality of their relationship. Poor HRQOL in PCOS women is directly associated with emotional intimacy, social intimacy, and the emotional well-being of their partners.

Limitations

- The study didn't add any control against which findings of the study can be compared and validated as the control group provides a baseline.

- No indigenous scales were available for measuring the proposed variables in the present study. All scales used were in the English language and were validated in the western context.

- The sample size was small as data was collected from only 76 couples. Many health care centers didn't allow data collection due to ongoing COVID restrictions in the country.

Recommendations

- In future studies, it is recommended to use qualitative or mixed-method approaches. It is not only important for in-depth analysis and understanding, but qualitative studies are useful in generating useful indigenous knowledge that can further be used in developing screening tools and interventions for this population.

- It is also recommended to use Actor-Partner Interdependence Model for collecting data from both husbands and wives. It will elaborate actor effects and partner effects of the proposed variables for each spouse. It will be useful in understanding the cross-over effect of PCOS for both partners.

Practical Implication

PCOS women are often treated for their biological abnormalities and physical manifestations of the disease but the emotional toll of this disease on the mental health and psychological well-being of their family and spouses are rarely discussed in healthcare settings in Pakistan. The present research also intended to raise awareness about the psychological well-being of such couples and to design and create couple-based interventions for PCOS women and their partners. It can help in understanding problems associated with management and adherence in PCOS women. It also highlights the impact of these types of metabolic chronic illnesses on the family members and their spouses. Although many patients tried to seek support from their immediate informal social network a sense of support from formal care units can bring a long-lasting change in the lives of sufferers of this mysterious disease.

Declaration

References

Ahmad, M., Tufail, S., Ayub, F., Aslam, P., & Mustafa, N. (2020). Frequency of polycystic ovarian syndrome in female medical students of combined Military Hospital Lahore Medical college. *Pakistan Armed Forces Medical Journal, 70*(1).

Amini, L., Seyedfatemi, N., Montazeri, A., Mahmoodi, Z., Arefi, S., Hosseini, F., ... & Ghorbani, B. (2012). Health related quality of life in women with *Polycystic Ovary Syndrome (PCOS). 11*(6);857-862.

Azziz, R., Carmina, E., Chen, Z., Dunaif, A., Laven, J. S., Legro, R. S., ... & Yildiz, B. O. (2016). "Polycystic ovary syndrome." *Nature Reviews Disease Primers 2*(1):1-18.

Czyżowska, D., Gurba, E., Czyżowska, N., & Kalus, A. (2020). Intimate relationship and its significance for eudaimonic well-being in young adults. *Health Psychology Report 8*(2): 155-166.

Dokras, A., Stener-Victorin, E., Yildiz, B. O., Li, R., Ottey, S., Shah, D., ... & Teede, H. (2018). Androgen Excess-Polycystic Ovary Syndrome Society: position statement on depression, anxiety, quality of life, and eating disorders in polycystic ovary syndrome. *Fertility and Sterility 109*(5): 888-899.

Dorval, M., Guay, S., Mondor, M., Masse, B., Falardeau, M., Robidoux, A., ... & Maunsell, E. (2005). Couples who get closer after breast cancer: frequency and predictors in a prospective investigation. *Journal of Clinical Oncology 23*(15): 3588-3596.

Elsenbruch, S., Hahn, S., Kowalsky, D., Öffner, A. H., Schedlowski, M., Mann, K., & Janssen, O. E. (2003). Quality of life, psychosocial well-being, and sexual satisfaction in women with polycystic ovary syndrome. *The Journal of Clinical Endocrinology & Metabolism 88*(12): 5801-5807.

Eriksson, E., Wejåker, M., Danhard, A., Nilsson, A., & Kristofferzon, M. L. (2019). Living with a spouse with chronic illness–the challenge of b a l a n c i n g demands and resources. *BMC Public Health 19*(1): 1-9.

Eriksson, E., Wejåker, M., Danhard, A., Nilsson, A., & Kristofferzon, M. L. (2018). Polycystic ovary syndrome: definition, aetiology, diagnosis and treatment. *Nature Reviews Endocrinology 14*(5): 270-284.

Gul, S., Zahid, S. A., & Ansari, A. (2014). PCOS: symptoms and awareness in urban Pakistani women. *Int J Pharma Res Health Sci, 2*(5), 356-60.

Haq, N., Khan, Z., Riaz, S., Nasim, A., Shahwani, R., & Tahir, M. (2017). Prevalence and knowledge of polycystic ovary syndrome (PCOS) among female science students of different public Universities of Quetta, Pakistan. *Imperial Journal of Interdisciplinary Research, 35*(6), 385-92.

Knafl, K. A., & Deatrick, J. A. (2002). The challenge of normalization for families of children with chronic conditions. *Pediatric Nursing, 28*(1), 49.

Lobel, M., Dunkel-Schetter, C., & Scrimshaw, S. C. (1992). Prenatal maternal stress and prematurity: a prospective study of socioeconomically disadvantaged women. *Health Psychology, 11*(1), 32.

Lookingbill, D. P., Demers, L. M., Wang, C., Leung, A., Rittmaster, R. S., & Santen, R. J. (1991). Clinical and biochemical parameters of androgen action in normal healthy Caucasian versus Chinese subjects. *The Journal of Clinical Endocrinology & Metabolism, 72*(6), 1242-1248.

Manne, S., & Badr, H. (2008). Intimacy and relationship processes in couples' psychosocial adaptation to cancer. *Cancer, 112*(S11), 2541-2555.

Miller, R. S., & Lefcourt, H. M. (1982). The assessment of social intimacy. *Journal of Personality Assessment, 46*(5), 514-518.

Moos, R. H., & Schaefer, J. A. (1984). The crisis of physical illness. *Coping With Physical Illness,* 3-25.

Naz, S., Anjum, N., & Gul, I. (2020). A Community Based Cross Sectional Study on Prevalence Of Polycystic Ovarian Syndrome (PCOS) and Health Related Quality of Life in Pakistani Females. Retreived from; https://www.researchsquare.com/article/rs-47444/v1.

Niet, J., Pastoor, H., Timman, R., & Laven, J. (2012). Psycho-social and sexual well-being in women with polycystic ovary syndrome. *Polycystic Ovary Syndrome.*

Palmer, S. E., Canzona, L., & Wai, L. (1984). Helping families respond effectively to chronic illness. *In Coping with Physical Illness* (pp. 283-294). Springer, Boston, MA.

Pekhlivanov, B., Kolarov, G., Kavŭrdzhikova, S., & Stoĭkov, S. (2006). Determinants of health related quality of life in women with polycystic ovary syndrome. Akusherstvo i ginekologiia, 45(7), 29-34. Pereira, M. G., Brito, L., & Smith, T. (2012). Dyadic adjustment, family coping, body image, quality of life and psychological morbidity in patients with psoriasis and their partners. *International Journal of Behavioral Medicine, 19*(3), 260-269.

Rao, M., Broughton, K. S., & LeMieux, M. J. (2020). Cross-sectional study on the knowledge and prevalence of PCOS at a multiethnic university. *Progress in Preventive Medicine*, e0028.

Repetti, R., Wang, S. W., & Saxbe, D. (2009). Bringing it all back home: How outside stressors shape families' everyday lives. *Current Directions in Psychological Science, 18*(2), 106-111.

Revenson, T. A., & DeLongis, A. (2011). Couples coping with chronic illness. In S. Folkman (Ed.), *The Oxford Handbook of Stress, Health, and Coping* (pp. 101–123). Oxford University Press.

Sánchez-Ferrer, M. L., Adoamnei, E., Prieto-Sánchez, M. T., Mendiola, J., Corbalán-Biyang, S., Moñino-García, M., ... & Torres-Cantero, A. M. (2020). Health-related quality of life in women with polycystic ovary syndrome attending to a tertiary hospital in Southeastern Spain: a case-control study. *Health and Quality of Life Outcomes, 18*(1), 1-10.

Shishehgar, F., Tehrani, F. R., Mirmiran, P., Hajian, S., Baghestani, A. R., & Moslehi, N. (2016). Comparison of dietary intake between polycystic ovary syndrome women and controls. *Global Journal of Health Science, 8*(9), 302.

Sinclair, V. G. & S. W. Dowdy (2005). Development and validation of the EmotionalIntimacy Scale. *Journal of Nursing Measurement 13*(3): 193-206.

Story, L. B. & T. N. Bradbury (2004). Understanding marriage and stress: Essentialquestions and challenges. *Clinical Psychology Review 23*(8): 1139-1162.

Teede, H. J., Misso, M. L., Costello, M. F., Dokras, A., Laven, J., Moran, L., ... & Norman, R. J. (2018). Recommendations from the international evidence-based guideline for the assessment and management of polycystic ovary syndrome. *Human Reproduction, 33*(9), 1602-1618.

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., ... & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): development and UK validation. *Health and Quality of life Outcomes, 5*(1), 1-13.

Wijeyaratne, C. N., Balen, A. H., Barth, J. H., & Belchetz, P. E. (2002). Clinical manifestations and insulin resistance (IR) in polycystic ovary syndrome (PCOS) among South Asians and Caucasians: is there a difference?. *Clinical Endocrinology, 57*(3), 343-350.

Wiley, J. A., & Camacho, T. C. (1980). Life-style and future health: evidence from the Alameda County Study. *Preventive Medicine, 9*(1), 1-21.

Williams, S., Sheffield, D., & Knibb, R. C. (2018). The Polycystic Ovary Syndrome Quality of Life scale (PCOSQOL): development and preliminary validation. *Health Psychology Open, 5*(2), 2055102918788195.

Zafar, U., Memon, Z., Moin, K., Agha, S., Hassan, J. A., & Zehra, D. (2019). Prevalence of PCOS with associated symptoms and complications at tertiary care hospital of Karachi. *J Adv Med Med Res, 30*(4), 1-9.

Reliability and Validity of Urdu Children Anxiety Sensitivity Index (CASI) Scale

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Abstract

Objective. Anxiety sensitivity has been implicated as a trans-diagnostic risk factor for various psychopathologies. Childhood anxiety sensitivity index (CASI) is an eighteen-item self-reported measure of anxiety sensitivity. The present research aimed to translate and adapt CASI into Urdu language, analyze the psychometric properties, factor structure and assess it as a screening scale for anxiety disorders in children.

Method. A cross-sectional research design was used to collect data from 658 participants (age 6 to 17 years; M=13.24, SD=2.51) by using CASI and Screen for anxiety and emotional related disorders (SCARED) self-report and parent-report.

Results. Exploratory factor analysis yields four factor structure explaining 32.98% accumulative variance. Confirmatory factor analysis supported a three-factor hierarchical factor (χ^2 = 152.52, df= 87, χ^2/df= 1.75 RMSEA= .05, CFI= .92, SRMR= .05, AIC= 218.52). ROC Curve analysis indicated CASI as a potential screening measure for anxiety disorders with a sensitivity of >.80 and specificity of >.58 at a cut score of 20 to 23.

Conclusion. Study findings indicate that Urdu CASI may be used as a screening tool of anxiety disorders in children. Suggestions for further research are proposed in the light of the present research findings.

Keywords. *Anxiety sensitivity, roc curve analysis, trans-diagnostic risk factor, anxiety disorders. mental health, cultural adaptation, casi.*

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Introduction

Prevention of mental disorders requires less effort but provides greater benefits to the individual, family and society. Targeting transdiagnostic risk factors is a cost-effective way in this regard. Anxiety sensitivity is a transdiagnostic risk factor for a range of psychopathologies like anxiety disorders, depression, suicidal ideation, and suicidal risk (Leen-Feldner et al., 2005; Lejuez et al., 2006; Lo et al., 2018; Velasco et al., 2016; Zvolensky et al., 2018). Meta-analysis about the relationship of anxiety sensitivity and psychopathology indicates that it is strongly linked to panic disorder, post-traumatic stress disorder, and generalized anxiety disorder and moderately linked to social anxiety, agoraphobia, and obsessive-compulsive disorder (Naragon-Gainey, 2010). Anxiety disorders are the most prevalent mental disorders, having chronic course, acting as a risk factor for future psychopathologies, negatively affecting the development and functionality of children and adolescents (Curry et al., 2004; Hudson et al., 2015). Anxiety disorder prevalence ranges from 10.7% to 17.3% in non-referred children and 3% to 44% in the clinical population of children and adolescents (Bandelow & Michaelis, 2015; Weiss & Last, 2001). Similarly, the prevalence of anxiety and depression in Pakistani children is higher, as 53.2% of children reported experiencing anxiety and depression in Karachi (Ibbad et al., 2022). Assessing and targeting anxiety sensitivity is an effective way to prevent and treat anxiety-related problems in children (Knapp, 2016). For the assessment of anxiety sensitivity, there must be a valid and culturally appropriate scale. To date, no culturally valid scale is available in Pakistan to assess anxiety sensitivity in children.

Anxiety sensitivity is defined as the fear of anxiety related bodily sensations and a belief that these sensations will lead to catastrophic outcomes such as physical illness, social embarrassment, loss of control and mental incapacitation (Reiss et al., 1986). It is the fear of arousal related bodily sensations due to the personal belief that these sensations will produce harmful physical, psychological and/or social consequences. For example, a person having high anxiety sensitivity may be frightened from accelerated heartbeat due to the attribution that it may lead to death (physical), and/or social rejection (social concerns). Anxiety sensitivity appears as a trait-like cognitive characteristic that amplifies the intensity of specific anxiety symptoms and thus builds up the perception of anxiety reactions (Taylor, 1998).

Children who score relatively high on the scale of anxiety sensitivity are prone to expect negative biopsychosocial consequences of experiencing anxiety like heart failure, panic attack, and/or humiliation compared to children with normal anxiety sensitivity (Reiss et al., 2001).

Childhood Anxiety Sensitivity Index (CASI) is a widely used eighteen items self-report instrument used to assess anxiety sensitivity in clinical and non-clinical population of children (Birmaher et al., 1999; Chorpita & Daleiden, 2000). It is a downward extension of the adult anxiety sensitivity index (ASI) for children. CASI has been translated and validated in different languages like Spanish (Fernández-Valdés et al., 2017), and Catalan (Fullana et al., 2003). CASI can be used as a screening tool for anxiety disorders and as an outcome measure in intervention studies for gauging the treatment effects (Schmidt et al., 2008). Existing studies have reported different factors structures of anxiety sensitivity for example, two factors i.e. autonomic and non-autonomic (Deacon et al., 2002), three factors i.e. physical concern, psychological concern, and social concern (Walsh et al., 2004; Wright et al., 2010), and four factors i.e. fear of physiological arousal, fear of mental incapacity, fear of social evaluation, and fear of losing control (Adornetto et al., 2008). The author of CASI analyzed four subfactors hierarchical structure based on a shorter version of CASI of 13 items. Poor and inconsistent items were removed and a final 13 version was tested in a clinical as well as non-clinical sample (Silverman, Wendy et al., 2003). A systematic review of CASI factor structure (Francis et al., 2019) and a meta-analysis of CASI (Noël & Francis, 2011) also point out the presence of a multidimensional construct of anxiety sensitivity in different samples across different countries warranting further studies in different cultures. Recently, there has been a growing trend to study the multidimensional nature of CASI as a transdiagnostic variable for different disorders (Francis et al., 2019; Knapp et al., 2016). Pakistan is a lower- middle- income country with unidentified mental health problems in children. As anxiety sensitivity is a transdiagnostic risk factor for mental health problems, a valid and culturally appropriate scale to measure anxiety sensitivity would help in assessing at-risk children for anxiety disorders and can be utilized in treatment progress.

The objectives of the present study were to translate and adapt CASI in Urdu, to analyze psychometric properties and factor structure of CASI in Pakistani children. In addition, present research also aimed to analyze CASI as a screening tool for anxiety.

Method

The present research was carried out in two phases. In the first phase, CASI was translated and adapted into Urdu language, and in the second phase reliability, factor structure and CASI as a screening scale for anxiety disorders was analyzed.

Instruments

Childhood Anxiety Sensitivity Index (CASI) (Silverman et al., 2003). This scale is an 18 item self-report tool to measure anxiety sensitivity regarding disease concerns, mental concerns, social concerns and unsteady concerns on a three-point scale from 1 to 3. It is a valid instrument for clinical and non-clinical samples of children and adolescents. Cronbach alpha for CASI total score is .87 for clinical and non-clinical samples. The test-retest reliability for two weeks is .76 and .79 for clinical and non-clinical samples. The score ranges from 18 to 54 where higher scores indicate higher anxiety sensitivity.

Screen for Anxiety and Emotional Related Disorder (SCARED) (Birmaher et al., 1999). This scale has a parent version and a self-report version measuring anxiety among children of 8 to 18 years of age. There are 41 items divided into five subscales: Panic/somatic (13 items), generalized anxiety disorder (9 items), separation anxiety disorder (8 items), social phobia (7 items), and school phobia (4 items). For each item, respondents choose the number that best describes how they have been feeling for 3 months at a three-point scale (0= not true, 1= sometimes true; 2= often true). Both child and parent versions have good internal consistency (α= .74 to .93). Test-retest reliability ranges from .70 to .90 for five weeks. The sensitivity and specificity of this scale are 71% and 67% respectively. The score ranges from 0 to 82, with a cut score of 30 indicating anxiety. All subscales have their cut scores to indicate the presence of disordered behavior i.e. Generalized anxiety subscale is 9, separation anxiety disorder and social anxiety subscale is 8, panic disorder is 7 and for school avoidance is 3. In the present study Urdu version of SCARED self-report and parent reports were used (Ahmed et al., 2020).

Phase 1: Translation and Adaptation of CASI in Urdu Language

CASI was translated in Urdu by following the guidelines of World Health Organization (World Health Organization, 2010). Written permission to translate, adapt and use the scale was taken from the author. Firstly, three postgraduate students of Clinical Psychology independently translated CASI in Urdu. Secondly, expert panel opinion was taken to select CASI's most suitable translated items. The expert panel was comprised of 4 bilingual postgraduates of Clinical Psychology. Suggestions and recommendations were taken. Thirdly, the Urdu translation of CASI was back-translated to English by three independent members. Two of the members were postgraduate students, and one was a teacher. The translated and original versions were compared in the committee approach by analyzing semantic equivalence. Lastly, Cognitive interviewing was carried out with a sample of 10 children. Some of the Urdu words were difficult to read and comprehend for children of 6 to 8 years of age during cognitive interviewing, for example, the word "احساسات". These terms and phrases were substituted with simpler words and English words were used along with the Urdu word. This decision was carried out by expert panel because English is the official language of Pakistan and it is used as a medium of instruction in school settings. A rich pool of English vocabulary has also been used in Urdu conversation in Pakistan which gives a plausible reason to use English words with Urdu words for comprehension (Appendix A: Urdu version CASI).

Phase 2: Reliability Estimate, and Factor Structure of CASI

Sample. Sample size was determined by using the criteria of MacCallum, Widaman, Zhnage, & Hong (MacCallum et al., 1999) which suggests 100 to 200 sample size for well determined factors ($r =>.80$) and high communalities (>.50), and 300 sample for small number of factors and few number of indicators. Based upon the existing literature about the factor structure of CASI, it was hypothesized that CASI has fewer number of factors, less communality and has not well determined factors, so a sample size of 658 was taken. Inclusion criteria was age range from 6 to 17 years; and school going. The sample was taken through convenient sampling from schools based in two different localities i.e. orphanage and community setting.

Data was collected from three major cities i.e. Islamabad, Rawalpindi, and Wah Cant Pakistan. Islamabad is the capital city of Pakistan while Rawalpindi is the fourth most populous city in the country (Pakistan Bureau of Statistics, 2017). The mean age of the sample was (M=13.24; SD =2.51, age range=6 to 17). Almost fifty percent participants were male, and fifty percent were female. Almost eighteen percent sample (n=116) was from three orphanage-based schools in Rawalpindi and Islamabad while eighty two percent participants (n=542) participants were from community-based government and private schools. The total sample was divided into two halves to conduct exploratory factor analysis (n=325; Mean age=15.02; SD=1.56; 41.5% boys, 58.5% girls) and confirmatory factor analysis (n=333, Mean age= 11.30, SD= 2.10, 59.5% boys and 39.3% girls). In order to analyze CASI as a screening measure for anxiety disorders some of participants' parents were requested to (n=180) fill SCARED parent-report version and some of the participants filled SCARED self-report version (n=87).

Procedure

Ethical approval for the study was taken from the Institute's ethics review committee. Written Informed consent from participants' parents in the community-based schools and from caretakers' in orphanage-based schools was taken. Assent was also taken from children for participation in the study. During school time, the class teacher randomly selected students to fill out the questionnaire. Scales were self-administered in a group setting during school timings.

Results

Three research assistants were present to answer any queries by the participants. Instructions were read aloud to all participants. The questionnaires were also read aloud to children from 6 to 9 years of age. SCARED parent version was filled out by parents of children from community schools, while SCARED self-report was filled out by participants living in orphanages due to the unavailability of parents in orphanage.

Statistical Analyses

SPSS version 23 and AMOS version 24 was used for analyses. Data was cleaned by checking outliers, mean and missing values. Normality assumptions and internal consistency of scales and subscales were analyzed by calculating skewness, kurtosis, histogram, Kolmogorov Smirnov test and reliability analyses respectively. Exploratory factor analysis was performed for initial factor extraction using Principal Axis Factoring with Promax rotation. Confirmatory factor analysis was performed in AMOS to check the comparative goodness of fit of EFA derived factor structure model. Maximum likelihood estimation was used for CFA. Chi-square difference, RMSEA, SRMR, CFI, and AIC were used to check model's goodness of fit. ROC curve analysis was used to determine the sensitivity and specificity of CASI as a screening measure for anxiety disorders.

Results

Descriptive analysis indicates that overall CASI, SCARED parent-reported version, and self-reported version have adequate internal consistency. The value of skewness and kurtosis indicates normality of data distribution of all study variables within ±2 range (Table 1).

Table 1

Descriptives of Study Variables CASI, SCARED self- report and parent report (N = 658)

Scale					Range		Skew	Kurtosis
	k	*M*	*SD*	*α*	Actual	Potential		
CASI	15	25.26	5.80	.82	15-45	15-45	.33	-.27
Factor 1	6	9.99	2.81	.70	6-18	6-18	.45	-.43
Factor 2	5	8.51	2.36	.66	5-15	5-15	.32	-.54
Factor 3	4	5.80	1.99	.50	4-12	4-12	1.24	.92
SCARED-P	41	19.02	13.27	.92	0-71	0-82	1.23	2.09
SCARED-S	41	35.80	11.30	.83	5-74	0-82	-.03	.86

Note. k = number of items CASI = Childhood Anxiety Sensitivity Index, SCARED = Screen for Anxiety and Emotional Related Disorder; S = self-report; P = Parent report; $S.E$ of skewness and kurtosis: CASI=0.96, 0.19; SCARED-S = .25, .51; SCARED-P =.18, .36.

EFA of CASI indicated a four factor model explaining 32.89% variance with eigenvalues of 4.63, 1.41, 1.33, and 1.20, respectively. Item no. 1, and 5 have lowest communality value indicating it as poor items. The fourth factor has just two items and the lowest internal consistency indicating it a poor factor (Table 2).

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Table 2

Exploratory Factor Analysis of Urdu version CASI (N=325)

Item No.	Statements	1	2	3	4	H²
6	It scares me when my heart beats fast	.66				.38
4	It scares me when I feel I am going to faint	.61				.28
9	When I notice that my heart is beating fast, I worry that there might be something wrong with me	.57				.39
10	It scares me when I have trouble getting my breath	.57				.41
8	It scares me when I feel like I am going to throw up	.48				.26
11	When my stomach hurts, I worry that there might be something wrong with me.	.38				.37
7	It embarrasses me when my stomach growls	.37	.71			.26
2	When I cannot keep my mind on my school work, I worry that I might be going crazy		.52			.42
12	It scares me when I cannot keep my mind on my school work		.47			.34
16	It scares me when I feel nervous		.27	.69		.43
3	It scares me when I feel shaky		.27	.47		.30
14	Unusual feelings in my body scare me			.36		.30
13	Other kids can usually tell when I feel shaky			.33		.43
15	When I am afraid I worry that I might be crazy					.42
1	I do not want other people to know when I feel afraid					.11
18	Funny feelings in my body scare me					.39
17	I do not like to let my feelings show				.55	.33
5	It is important for me to stay in control of my feelings				.31	.13
	No of items	7	5	4	2	
	Eigenvalues	4.63	1.41	1.33	1.20	
	Total variance explained	22.20	4.32	3.78	2.68	
	Internal Consistency	.73	.69	.57	.30	

CFA was carried out with four factor hierarchical model and it was improved based upon the model fit indices of Model Chi-square (χ^2), Root Mean Square Error of Approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMR) and factor loadings. Model fit of the initial EFA based four factor model was poor ($\chi^2 = 476.50$, *df*= 130, RMSEA= .09, CFI= .62, SRMR= .21, AIC= 558.50), so item no.1 was removed because of low factor loading. After removing item 1 model fit was slightly improved ($\chi^2 = 216.14$, *df*= 115, RMSEA= .09, CFI= .87, SRMR= .05, AIC= 292.14). Item no. 7 and 17 were removed in the second round due to low factor loading (<.30) to improve the model fit. The final model fit falls under the acceptable range and all items have acceptable factor loadings ($\chi^2 = 152.52$, *df*= 87, χ^2/ *df*= 1.75 RMSEA= .05, CFI= .92, SRMR= .05, AIC= 218.52).

Table 3

Factor Loadings based on CFA of CASI (N=333).

Factor	Item no	λ
1	4	.44
1	6	.55
1	9	.58
1	8	.43
1	10	.42
1	11	.53
2	2	.41
2	3	.37
2	12	.41
2	14	.55
2	16	.50
3	5	.50
3	13	.37
3	15	.50
3	18	.55

ROC curve analysis indicated adequate sensitivity to assess anxiety disorders in children with a cut of score 20 against parent-reported anxiety and 23 against self-reported anxiety disorders. (Table 4).

Table 4

ROC Curve Analysis of CASI against SCARED-parent (N=180) and SCARED-self (N=87)

CASI Scores	Anxiety Disorders						
	AUC	*S.E*	*p*	95% *CI*	OCP	Sensitivity	Specificity
SCARED P	.70	.04	.000	.61-.80	20	.84	0.58
SCARED S	.83	.04	.000	.74-.93	23	.93	0.60

Note. AUC= area under the curve; CASI=Childhood anxiety sensitivity index; SCARED= Screen for children anxiety related emotional disorders; *P*=parent version; *S*=self-report; OCP= optimal cutoff point.

Discussion

The aim of the present study was to translate, adapt and analyze the psychometric properties of Urdu version of CASI for Pakistani children. A secondary aim was also to analyze CASI, a screening measure for anxiety disorders in children.

The results indicated that CASI Urdu version has good internal consistency (Table 1) for the overall scale (α =.82); acceptable for the subscales as well (α=.70, .66, .50). Previous studies of CASI structure also report similar alpha coefficient for three factors respectively. Third factor comprising of social concerns related 3 items usually had lower reliability estimates in the previous studies as well i.e. .48, 55 (Francis et al., 2019; Noël & Francis, 2011).

One possible reason could be lower no. of items and not clear enough to measure the social concerns related to anxiety sensitivity.

EFA results (Table 2) indicated a four-factor structure in which one of the factors consisted of seven items explaining 22.20% variance. Some items have low communality like item no. 7. The items in the first factor are mostly related to the physical body related concerns which might be interpreted as unsteadiness for example item no 6, 9, 10 and 11. These items are characterized in physical concerns factor in previous studies as well (Noël & Francis, 2011). Item no. 4 and 8 is usually characterized under unsteady concerns and fear of losing control but in the present research physical concerns and unsteady concerns made one factor.

Factor one has highest explained variance and this findings is consistent with previous study indicating that CASI items related to autonomic arousal are diagnostically superior to the full scale (Chorpita & Daleiden, 2000). Another EFA based study also indicated that nine items related to physical anxiety sensitivity has better model fit than two three or four factor model. The second factor comprised five items explaining 4.32% variance with acceptable communality values. The second factor was mainly related to mental concerns for example attention to work, nervousness, and feeling shaky. The third factor was made of four items explaining a 3.78% variance. Item no. 1 in the third factor has the lowest communality (.11). Factor four consisted of just two items about having emotional control explaining only 1.20% variance. Item five has the second lowest communality (.13). One reason could be the cultural aspect of not expressing one's feelings and maintaining group harmony in collectivist societies like Pakistan (Schreier et al., 2010). These items with the lowest commonalities were removed one by one in CFA to improve the model fit.

The results of CFA (Table 3) indicated that CASI has a hierarchical structure, comprised of three lower orders factors i.e. disease concern, unsteady concern, and mental illness concern measured by 15 items version of CASI. Previous studies on factor structure of CASI has also indicated better model fit with fewer items rather than eighteen items scale (Adornetto et al., 2008; Silverman, Wendy et al., 2003). Studies in United States also reported the best model for 13 items four factor structure (Feldner et al., 2008; Leen-Feldner et al., 2005). Items no. 1 and 17 that are removed in the present CASI factor structure are related to social concerns. Items no.17 was difficult to comprehend to children during cognitive interviewing as well which might be a reason of poor factor loading.

ROC Curve analysis (Table 4) suggested that CASI could be used as a screening measure for anxiety disorders. Previous studies also indicated that CASI can be used a screening tool for anxiety disorders (Francis et al., 2019; Manly, 2005; Paulus et al., 2018; Weems et al., 2010; Zvolensky et al., 2015, 2018).

CASI is a short and freely available scale which can be utilized effectively for screening purpose in clinical and community settings specifically in lower- and middle-income countries.

Recently research has been carried out on anxiety sensitivity as a trans-diagnostic factor that needs to be targeted for psychological disorders. A screening measure is necessary for the assessment and treatment (McHugh, 2019).

Limitations and Suggestions

The present research has some limitations, which must be kept in mind while interpreting the results. For example, the structured diagnostic interview is not used to determine the anxiety disorder for establishing anxiety disorder diagnosis which might undermine the absence/presence of anxiety disorder in participants. A broad age range was targeted in the present research which might impact the factor structure of CASI. Future research can incorporate multiple group analysis to analyze any difference of age and gender. Future research will also benefit from incorporating a mixed-method research design to study the construct of anxiety sensitivity and its phenomenology in Pakistani culture. The focus of the present research was to check if CASI can be used as a screening measure for anxiety disorders. Future studies can incorporate other important variables like depression, suicide, and other mood related disorders to analyze how anxiety sensitivity is related to these psychopathologies in Pakistani population.

Conclusion

Urdu CASI can be used to measure anxiety sensitivity in children in clinical setting and for future research purpose. CASI fifteen items scale has better reliability and can be used as a composite scale for screening anxiety disorders.

Declaration

References

Adornetto, C., Hensdiek, M., Meyer, A., In-Albon, T., Federer, M., & Schneider, S. (2008). The factor structure of the Childhood Anxiety Sensitivity Index in German children. *Journal of Behavior Therapy and Experimental Psychiatry, 39*(4), 404–416. https://doi.org/10.1016/j.jbtep.2008.01.001.

Ahmed, S., Malik, T. A., & Naveed, A. (2020). Adaptation and Concurrent Validity of Screen for Children Anxiety Related Emotional Disorders (SCARED) Adaptation and Concurrent Validity of Screen for Children Anxiety Related Emotional Disorders (SCARED). *Nust Journal of Social Sciences and Humanities, 6*(1), 29–43. https://www.researchgate.net/publication/344069858_Adaptation_and_Concurrent_Validity_of_Screen_for_Children_Anxiety_Related_Emotional_Disorders_SCARED.

Bandelow, B., & Michaelis, S. (2015). Epidemiology of anxiety disorders in the 21st century. *Dialogues in Clinical Neuroscience, 17*(3), 327–335. http://www.ncbi.nlm.nih.gov/pubmed/26487813.

Birmaher, B., Brent, D. A., Chiappetta, L., Bridge, J., Monga, S., & Baugher, M. (1999). Psychometric properties of the screen for child anxiety related emotional disorders (SCARED): A replication study. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*(10), 1230–1236. https://doi.org/10.1097/00004583-199910000-00011.

Chorpita, B. F., & Daleiden, E. L. (2000). Properties of the Childhood Anxiety Sensitivity Index in children with anxiety disorders: Autonomic and nonautonomic factors. *Behavior Therapy, 31*(2), 327–349. https://doi.org/10.1016/S0005-7894(00)80018-0.

Curry, J. F., March, J. S., & Hervey, A. S. (2004). Comorbidity of Childhood and Adolescent Anxiety Disorders Prevalence and Implications. In T. H. Ollendick & J. S. March (Eds.), *Phobic and Anxiety Disorders in Children and Adolescents* (2nd ed., pp. 116–140). Oxford University Press.

Deacon, B. J., Valentiner, D. P., Gutierrez, P. M., & Blacker, D. (2002). The anxiety sensitivity index for children: Factor structure and relation to panic symptoms in an adolescent sample. *Behaviour Research and Therapy, 40*(7), 839–852. https://doi.org/10.1016/S0005-7967(01)00076-6.

Feldner, M. T., Leen-Feldner, E. W., Trainor, C., Blanchard, L., & Monson, C. M. (2008). Smoking and posttraumatic stress symptoms among adolescents: does anxiety sensitivity matter? *Addictive Behaviors, 33*(11), 1470–1476. https://doi.org/10.1016/j.addbeh.2008.02.015.

Fernández-Valdés, J., Gavino, A., Valderrama-Martos, L., Godoy, A., & Laurent, J. (2017). Propiedades psicométricas de la versión española del Índice de Sensibilidad a la Ansiedad para Niños. *Psicothema, 29*(3), 402–407. https://doi.org/10.7334/psicothema2017.78.

Francis, S. E., Noël, V. A., & Ryan, S. L. (2019). A Systematic Review of the Factor Structure of Anxiety Sensitivity Among Children: Current Status and Recommendations for Future Directions. *Child & Youth Care Forum, 48*(5), 603–632.https://doi.org/10.1007/s10566-019-09502-y.

Fullana, M. A., Servera, M., Weems, C. F., Tortella-Feliu, M., & Caseras, X. (2003). Psychometric properties of the childhood anxiety sensitivity index in a sample of Catalan school children. Anxiety, *Stress and Coping, 16*(1), 99–107. https://doi.org/10.1080/1061580021000009647.

Hudson, J. L., Rapee, R. M., Lyneham, H. J., McLellan, L. F., Wuthrich, V. M., & Schniering, C. A. (2015). Comparing outcomes for children with different anxiety disorders following cognitive behavioural therapy. *Behaviour Research and Therapy, 72,* 30–37. https://doi.org/10.1016/j.brat.2015.06.007.

Ibbad, S., Baig, L. A., Ahmer, Z., & Shahid, F. (2022). Prevalence of anxiety and depression in high school students of Karachi, Pakistan. *Pakistan Journal of Medical Sciences, 38*(4Part-II), 916. https://doi.org/10.12669/PJMS.38.4.5093.

Knapp, Ashley Arehart. (2016). Test of an Adolescent Anxiety Sensitivity Amelioration Program (AASAP) for At-Risk Youth [University of Arkanas]. http://scholarworks.uark.edu/etdhttp://scholarworks.uark.edu/etd/1686.

Knapp, Ashley A., Blumenthal, H., Mischel, E. R., Badour, C. L., & Leen-Feldner, E. W. (2016). Anxiety Sensitivity and Its Factors in Relation to Generalized Anxiety Disorder among Adolescents. *Journal of Abnormal Child Psychology, 44*(2), 233–244. https://doi.org/10.1007/s10802-015-9991-0.

Leen-Feldner, E. W., Feldner, M. T., Bernstein, A., McCormick, J. T., & Zvolensky, M. J. (2005). Anxiety Sensitivity and Anxious Responding to Bodily Sensations: A Test among Adolescents Using a Voluntary Hyperventilation Challenge. *Cognitive Therapy and Research, 29*(5), 593–609. https://doi.org/10.1007/s10608-005-3510-5.

Lejuez, C. W., Paulson, A., Daughters, S. B., Bornovalova, M. A., & Zvolensky, M. J. (2006). The association between heroin use and anxiety sensitivity among inner-city individuals in residential drug use treatment. *Behaviour Research and Therapy, 44*(5), 667–677. https://doi.org/10.1016/j.brat.2005.04.006.

Lo, H. H. M., Yeung, J. W. K., Duncan, L. G., Ma, Y., Siu, A. F. Y., Chan, S. K. C., Choi, C. W., Szeto, M. P., Chow, K. K. W., & Ng, S. M. (2018). Validating of the Interpersonal Mindfulness in Parenting Scale in Hong Kong Chinese. *Mindfulness, 9*(5), 1390–1401. https://doi.org/10.1007/s12671-017-0879-7.

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*(1), 84–99. https://doi.org/10.1037/1082-989X.4.1.84.

Manly, J. T. (2005). Advances in research definitions of child maltreatment. *Child Abuse & Neglect, 29*(5), 425–439.https://doi.org/10.1016/j.chiabu.2005.04.001.

McHugh, R. K. (2019). Assessing anxiety sensitivity. In S. Smits, Jasper;Otto, Michael; Powers, Mark; Baird (Ed.), *The Clinician's Guide to Anxiety Sensitivity Treatment and Assessment* (1st ed., pp. 9–29). Academic Press. https://doi.org/10.1016/b978-0-12-813495-5.00002-4.

Naragon-Gainey, K. (2010). Meta-Analysis of the Relations of Anxiety Sensitivity to the Depressive and Anxiety Disorders. *Psychological Bulletin, 136*(1), 128–150. https://doi.org/10.1037/a0018055.

Noël, V. A., & Francis, S. E. (2011). A meta-analytic review of the role of child anxiety sensitivity in child anxiety. *Journal of Abnormal Child Psychology, 39*(5), 721–733. https://doi.org/10.1007/s10802-011-9489-3.

Pakistan Bureau of Statistics. (2017). *Provisional Summary Results of 6TH Population and Housing Census*-2017. http://www.pbs.gov.pk/sites/default/files/PAKISTAN TEHSIL WISE FOR WEB CENSUS_2017.pdf.

Paulus, D. J., Kauffman, B. Y., Garey, L., Jardin, C., Manning, K., Bakhshaie, J., Garza, M., Ochoa-Perez, M., Lemaire, C., & Zvolensky, M. J. (2018). Examining the Synergistic Effects of Two Transdiagnostic Vulnerability Factors in Relation to Anxiety and Depressive Symptoms and Disorders Among Latinos in a Community Health Care Setting. *Behavior Modification, 42*(5), 661–683. https://doi.org/10.1177/0145445517725867.

Reiss, S., Peterson, R. A., Gursky, D. M., & McNally, R. J. (1986). Anxiety sensitivity, anxiety frequency and the prediction of fearfulness. *Behaviour Research and Therapy.* https://doi.org/10.1016/0005-7967(86)90143-9.

Reiss, S., Silverman, W. K., & Weems, C. F. (2001). AS.pdf. In M. W. Vassey & R. Dadds, Mark (Eds.), *Developmental Psychopathology of Anxiety* (pp. 109–128). Oxford University Press.

Schmidt, N. B., Keough, M. E., Timpano, K. R., & Richey, J. A. (2008). Anxiety sensitivity profile: predictive and incremental validity. *Journal of Anxiety Disorders, 22*(7), 1180–1189. https://doi.org/10.1016/j.janxdis.2007.12.003.

Schreier, S. S., Heinrichs, N., Alden, L., Rapee, R. M., Hofmann, S. G., Chen, J., Oh, K. J., & Bögels, S. (2010). Social anxiety and social norms in individualistic and collectivistic countries. *Depression and Anxiety, 27*(12), 1128–1134. https://doi.org/10.1002/da.20746.

Silverman, Wendy, K., Goedhart, Arnold, W., Barrett, P., & Turner, C. (2003). The facets of anxiety sensitivity represented in the Childhood Anxiety Sensitivity Index: Confirmatory analyses of factor models from past studies. *Journal of Abnormal Psychology, 112*(3), 364–374. https://doi.org/10.1037/0021-843X.112.3.364.

Taylor, S. (Ed.). (1998). *Anxiety Sensitivity: Theory, Research, and Treatment of the Fear of Anxiety.* Lawrence Erlbaum Associates.

Velasco, R. V., Bakhshaie, J., Walker, R. L., Viana, A. G., Garza, M., Ochoa-Perez, M., Paulus, D. J., Robles, Z., Valdivieso, J., & Zvolensky, M. J. (2016). Synergistic effects of pain intensity and anxiety sensitivity in relation to anxiety and depressive symptoms and disorders among economically disadvantaged latinos in a community-based primary care setting. *Journal of Anxiety Disorders, 43*, 23–31. https://doi.org/10.1016/j.janxdis.2016.07.007.

Walsh, T. M., Stewart, S. H., McLaughlin, E., & Comeau, N. (2004). Gender differences in Childhood Anxiety Sensitivity Index (CASI) dimensions. *Journal of Anxiety Disorders, 18*(5), 695–706. https://doi.org/10.1016/S0887-6185(03)00043-4.

Weems, C. F., Taylor, L. K., Marks, A. B., & Varela, R. E. (2010). Anxiety sensitivity in childhood and adolescence: Parent reports and factors that influence associations with child reports. *Cognitive Therapy and Research, 34*(4), 303–315. https://doi.org/10.1007/s10608-008-9222-x.

Weiss, D. D., & Last, C. G. (2001). Developmental Variations in the Prevalence and Manifestation of Anxiety Disorders. In W. Vasey, Michael & R. Dadds, Mark (Eds.), *The Developmental Psychopathology of Anxiety* (1st ed., pp. 44–59). Oxford University Press.

World Health Organization. (2010). Process of translation and adaptation of instruments. WHO; World Health Organization.https://www.who.int/substance_abuse/research_tools/translation/en/.

Wright, K. D., Asmundson, G. J. G., McCreary, D. R., Stewart, S. H., McLaughlin, E., Comeau, M. N., & Walsh, T. M. (2010). Confirmatory factor analysis of the childhood anxiety sensitivity index: A gender comparison. *Cognitive Behaviour Therapy, 39*(3), 225–235. https://doi.org/10.1080/16506073.2010.486840.

Zvolensky, M. J., Bakhshaie, J., Garza, M., Paulus, D. J., Valdivieso, J., Lam, H., Bogiaizian, D., Robles, Z., Schmidt, N. B., & Vujanovic, A. (2015). Anxiety sensitivity and mindful attention in terms of anxiety and depressive symptoms and disorders among Latinos in primary care. *Psychiatry Research, 229*(1–2), 245–251. https://doi.org/10.1016/j.psychres.2015.07.026.

Zvolensky, M. J., Paulus, D. J., Bakhshaie, J., Garza, M., Valdivieso, J., Ochoa-Perez, M., Reitzel, L. R., Viana, A. G., Lemaire, C., Bogiaizian, D., Robles, Z., Manning, K., Mayorga, N. A., Schmidt, N. B., & Collado, A. (2018). Anxiety sensitivity and rumination: Transdiagnostic factors involved in the relation between subjective social status and anxiety and depressive symptoms and disorders among economically disadvantaged Latinos in primary care. *American Journal of Orthopsychiatry, 88*(5), 571–581. https://doi.org/10.1037/ort0000307.

Moderating Role of Coping Strategies in Relationship Between Household Chaos and Mental Health

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Abstract

Background. Household chaos is identified with mental well-being as the level of chaos promptly affecting the mental health of adolescents. A chaotic home situation is portrayed as when there is an elevated degree of disturbances, noise and crowd, instability, and an absence of a schedule that may add to levels of stress in a home environment (Bronfenbrenner & Evans, 2002). Adolescence is said to be a vulnerable period in which an individual is involved in physical and psychosocial changes (WHO, 2004). Coping strategies are the mechanism used by an individual to cope with stressful events (Folkman, 1984). Problem-focused coping strategy with reference to mental health focuses on problem solving. Emotion-focused coping helps to regulate emotions and dysfunctional coping tries to avoid stressful situations (Tolor & Fehon, 1987). The objective of this study was to examine the role of coping strategies in a relationship with household chaos and the mental health of adolescents.

Method. The sample was consisted of 200 adolescents (52% girls, 48% boys) between the ages of 10 and 19. The correlational research method was used to assess the relationship among variables. The convenient sampling technique was used to collect the data. Confusion, Hubbub and Order scale (Mathen et al., 1995), Mental Health Inventory (Ware & Veit, 1983), and Brief Cope scale (Carver, 1997) were used to measure the study variables.

Results. The correlational analysis revealed a significant negative correlation between household chaos and mental health. Findings showed that household chaos negatively predicted psychological wellbeing and positively predicted psychological distress while, coping strategies was positively linked with mental health. Findings further indicated that coping strategies buffered the relationship between household chaos and mental health.

Conclusion. Adolescents with high levels of chaos at home, suffer from mental health problems. In the presence of coping strategies, the effect of household chaos on mental health decreases.

Keywords. *Household chaos, mental health, coping strategies, adolescents.*

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Introduction

Adolescence is considered a notice period as it connects young people to adulthood. Adolescence is said to be a vulnerable period in which an individual is involved in physical and psychosocial changes. This progress includes significant physical, physiological, mental, emotional, social, and intellectual changes. Santrock (2014) illustrates puberty as a formative time of progress that includes socio-emotional, psychological, and biological changes among adolescents. World Health Organization (WHO, 2004) defines the age range of adolescence as between 10 to 19 years. The puberty period is divided into three periods which are early, middle and late adulthood. The age range for early adulthood is 10 to 13 years, for middle adulthood is 14 to 17 and for late adulthood 18 to 21 years.

Household chaos is defined as "the disposition of uncontrolled movement, the absence of structure, irregularity in the normal routine, and high levels of surrounding stimulation" (Bronfenbrenner & Evans, 2002, p. 121). Evans and Wachs in 2010 conducted research influenced by the bioecological model of Bronfenbrenner (Bronfenbrenner & Morris, 2006). This research was based on the effect of households on the development of the child. Research has analyzed that home conditions are considered a natural microsystems which may foster or restrain the healthy development of children. A functional meaning of household chaos incorporates two key ideas which are insecure or disturbance and disorder. Insecurity or disturbance reflects changes in home environments and associations or irregular schedules, while disturbance incorporates the crowd, mess, noises, and irregularity at home (Sameroff, 2010). The home environment is considered a microsystem for a child and its impact on a child's well-being through daily connections and processes is very important (Fiese & Beardslee, 2013). Disturbances and instabilities inside the home are family-level factors that add to the working of children and adolescents (Brient & Spoon, 2017).

Mental health is a condition of complete well-being of a person without any mental disorder. The mental health term has two domains, psychological wellbeing and psychological distress. Psychological well-being is all about the sense of mastery, optimism, interest and attitude of an individual while psychological distress is referred to disorder such as anxiety, depression and stress.

Basic cognitive and social skills are the main components of mental health (Artero, 2001). Mental health includes our social, emotional and psychological well-being. It influences how we think, feel, and act. Mental health and well-being are always characterized by the absence of a mental problems. The positive component of mental health is featured in WHO's definition of well-being is a state of complete physical, mental and social success and not just the exclusion of illness (WHO, 2004). Coping strategies are the mechanism that a person uses to address stressful events. The most intensive and thorough definition of coping given by Folkman is, "a connection between the individual and the condition that is assessed by the individual as surpassing their capabilities for the well-being which is threatening (Folkman, 1984). Coping mechanisms try to resolve the discrepancies between the demands and the available recourses to manage the stressors. This cycle can be a reaction to an unpleasant occasion evaluated as a danger, challenge or threat (Lazarus, 1993). More extensive studies, both problem-focused coping and emotion-focused coping strategy deals with stress and emotional consequences with cognitive and behavioral mechanisms (Lazarus & Folkman, 1984). Problem-focused coping includes the actions such as solving issues, focusing on the positivity and having no worrying about the situation. Emotion-focused category helps to regulate emotions by seeking information and social support (Tolor & Fehon, 1987) and dysfunctional coping by trying to act in another way such as avoiding stressful situations (Compas, 1988). The present study is carried out to explore the moderating role of coping strategies in the relationship between household chaos and mental health among adolescents. The study is an effort to fill the gap in the literature as there have been very little research done on the moderating role of coping strategies with household chaos and mental health. The aim of the present research is, to identify the daily stressors caused by household chaos and how typically adolescents cope with these stressors.

Research Hypotheses

1. Household chaos negatively predicts the psychological wellbeing among adolescents.

2. Household chaos positively predicts the psychological distress among adolescents.

3. Problem-focused coping and emotion-focused coping is positively related to psychological wellbeing among adolescents.

4. Problem-focused coping and emotion-focused coping is negatively related to psychological distress among adolescents.

5. Dysfunctional coping is positively related to psychological distress among adolescents.

6. Dysfunctional coping is negatively related to psychological wellbeing among adolescents.

7. Problem-focused coping and emotion-focused coping buffers the effect of household chaos on mental health among adolescents.

8. Dysfunctional coping boost the effect of household chaos on psychological wellbeing among adolescents.

Method

Sample

The sample of this study consisted of 200 adolescents (52% girls, 48% boys) with age ranges between 10 to 19 years (*M*=1.52, *SD*= .50). Participants were approached through a convenience sampling technique. Data was collected from different cities in Pakistan i.e. Faisalabad, Rawalpindi, and Sargodha. Each participant approached individually and time limit was not set to complete the questionnaire. Demographic information included age, gender, education, socioeconomic classes, and total members in a family. A cross-sectional survey research design was used in the present study.

Measurements

Household Chaos Scale. To assess the perception of chaos by the participants Hubbub, Confusion, Order Scale (CHAOS; Phillips, Matheny, Wachs, & Ludwig, 1995) was used. This CHAOS was consisting of 15 items. Items were rated on a true/false scale (e.g., 1= true; 2=false) and then averaged with the appropriate items reversed so as to create a total score, with higher score being indicated as more household chaos. For this scale Cronbach's alphas were .83, .80, and .79, respectively. In present research the Urdu, translated version of CHOAS scale was used (Tus-Sabah, 2010).

Mental Health Inventory. To assess the mental health, the present study used 38 items MHI (Ware & Veit, 1983). This inventory has already been translated and adapted for Pakistani Culture (Bashir & Naz, 2013) and used in different Pakistani research projects (Bano & Malik, 2013; Mahmood & Malik, 2013).

It has 6-point rating scale; participants were asked for each item to rate on a six point frequency or intensity scale, for how they had been feeling during the past month. The inventory gives an overall picture of mental health of an individual through mental health index. On the other hand, it has two major subscales i.e. psychological distress and psychological well-being that tell about the level of distress and wellbeing of individuals. For mental scales, the estimates of internal consistency were high, alpha reliability being .95. Cronbach's co-efficient alpha for the Distress scale was .94 and for the Well-being scales .92. In present re-search, Urdu translation of Mental Health Inventory was used (Khan, Hanif & Tariq, 2015).

Brief COPE Scale. The Brief COPE (Carver, 1997) is a coping inventory having 28 items, with 14 subscales. Each subscale further comprises two items. Carver reported validity of scale and reliability of sound on scale with Cronbach alphas ranging from .50 to .90. Three types of coping measured by the scale; problem-focused, emotion-focused and avoidant. Problem-focused coping: Measured via active coping, positive reframing, instrumental support and planning. Emotional coping was measured using items related with self-blame, religion, venting, emotional support, humor and acceptance. Avoidance coping include denial, behavioral, substance abuse, disengagement, and self-destruction. In current research, another translated version in Urdu of brief cope by Qadeer & Jamal, 2012 was intervened to assess the coping strategies employed by respondents.

Procedure

After the finalization of the scales, permission was taken from the authors for using the scales. For data collection, participants were approached directly and after their consent for participation, they were briefed about the objectives and nature of the study. They were ensured that the confidentiality of their provided information will be maintained and will only be used for research purposes. Then, a test booklet including all the scales and demographic sheets was given to participants and they were asked to fill every portion of the questionnaire correctly, sincerely, and honestly. There was no time limit for filing the scales. Data was collected from a sample of 200 participants. Then, data was entered in IBM-SPSS and different statistical analyses were run on it to test the proposed hypotheses. After analysis, results were compiled and discussed.

Results

The purpose of this study was to analyze the impact of household chaos on mental health (psychological well-being and psychological distress) and moderating role of coping strategies among adolescents. To meet the objectives of the study and for hypothesis testing some major and advanced analyses were carried out. A correlation matrix was produced to check the relationship among study variables. Linear regression analyses were used to predict the relationship among all the variables of the study. The process macro model was used to check out the moderating effect of coping strategies (problem-focused coping, emotion-focused coping, and dysfunctional coping) with household chaos and mental health.

In an attempt to find out the nature of the relationship among study variables correlation coefficient was computed. Pearson Product Moment Correlation Coefficient was carried out to examine the relationship between all the study variables. Results of the correlation matrix revealed that there is a notable relationship between household chaos, mental health, and coping strategies. A significant negative correlation was observed between household chaos and mental health which indicates that adolescents who experience household chaos suffer from mental health issues. Coping strategies had a significant positive correlation with mental health while a negative relationship with household chaos. In addition, the relationship among subscales of major study variables is also shown in the correlation matrix. Mental Health Inventory has two subscales, psychological well-being, and psychological distress. Brief Cope Scale has three types of coping strategies, dysfunctional coping, problem-focused coping, and emotion-focused coping. Findings indicate that psychological well-being, problem-focused and emotion-focused coping had a remarkable positive correlation while a significant negative correlation with psychological distress and dysfunctional coping. The only significant correlation between household chaos and coping strategy observed is dysfunctional coping. The significant positive correlation between household chaos and dysfunctional coping indicates that those who experience chaos at home more frequently engage in a dysfunctional coping strategies.

Table 3 demonstrates the moderating role of coping strategies in relationship with chaos and mental health. Moderation analysis performed by using macro process (Hayes, 2013). Findings suggest that problem focused coping significantly positively predict psychological wellbeing ($B= .16$ $p<.01$) and psychological distress ($B= .62$ $p<.01$). Household chaos produced a significant negative effect on psychological wellbeing ($B= -.86$ $p<.01$) and psychological distress ($B= -.39$ $p<.01$). Emotion-focused coping significantly positively predicts psychological wellbeing ($B= .07$ $p<.05$) and psychological distress ($B= .48$ $p<.05$). Household chaos produced a significant negative effect on psychological wellbeing ($B= -.21$ $p<.05$) and psychological distress ($B= -.54$ $p<.05$). Dysfunctional coping significantly negatively predicts psychological wellbeing ($B= .51$ $p<.05$) and significantly positively predicts psychological distress ($B= .18$ $p<.01$). Household chaos produced a significant positive effect on psychological wellbeing ($B= .41$ $p<.05$) and significant negative effect with psychological distress ($B= .23$ $p<.01$).

The findings of the moderation table are further described through the mod graph (Figure 1-5). The graph shows that in the presence of moderator problem-focused coping, the effect of household chaos is decreasing on psychological wellbeing and on psychological distress. In the presence of emotion-focused coping, the effect of household chaos on psychological wellbeing and on psychological distress is decreasing. The graph shows that dysfunctional coping increases the level of psychological distress while dysfunctional coping has non-significant effect on psychological distress.

Table 1

Correlation among study variables (N=200)

S.No	Variables	n	M	SD	1 CHAOS	2 MHI	3 PWB	4 PD	5 BCS	6 PFC	7 EFC	8 DC
1.	CHAOS	200	4.39	3.65	—							
2.	MHI	200	138.0	14.3	-.15*	—						
3.	PWB	200	50.8	11.7	-.42**	.03	—					
4.	PD	200	87.2	18.8	.37**	.78**	-.64**	—				
5.	BCS	200	75.2	8.53	.12	.16*	.11	-.19**	—			
6.	PFC	200	18.0	3.10	-.08	.01	.01	.00	.69**	—		
7.	EFC	200	29.2	4.03	-.01	.06	.02	-.03	.77**	.57**	—	
8.	DC	200	25.8	4.33	-.27**	-.22**	-.23**	.31**	.68**	.13	.18**	—

Note. CHOAS=. Hubbub and Order Scale; MHI= Mental Health Inventory; PWB= Psychological Well Being; PD= Psychological Distress; PFC= Problem Focused Coping; EFC= Emotion Focused Coping; DC= Dysfunctional Coping.
*p < .05

Table 2

Multiple Regression Analysis by Household Chaos and Coping Strategies on Mental Health (N=200)

Predictors	Psychological wellbeing						Psychological distress					
	B	SE B	β	t	95% CI LL	95% CI UL	B	SE B	β	t	95% CI LL	95% CI UL
Constant	34.6	4.4	-	7.8	25.9	43.4	12.5	6.6	-	18.0	106	133
CHAOS	.59	.15	-.28**	6.5	.64	1.2	-.15	.23	.29**	-6.6	-1.1	-2.5
PFC	.09	.16	.28**	.56	-.40	.22	-.01	.24	-.20**	-.05	-.48	.47
EFC	.13	.15	.24**	.87	-.44	.17	-.38	.23	-.28**	1.6	-.07	.84
DC	-.26	.11	-.03	-5.4	.39	.84	.13	.17	.34**	-7.6	-1.6	.96
	R2=.42		ΔR²=.41		F=21.7		R²=.50		ΔR²=.49		F=33.2	

Note. CHAOS= Confusion, Hubbub and Order Scale, PFC= Problem Focused Coping; EFC= Emotion Focused Coping; DC= Dysfunctional Coping.
*p < .05. **p < .05. ***p<.01

Table 3

Moderating effect of Coping Strategies with Household Chaos on Mental Health (N=200)

Predictors	Psychological wellbeing						Psychological distress					
					95% CI						**95% CI**	
	B	**SE**	**t**	**p**	**LL**	**UL**	**B**	**SE**	**t**	**p**	**LL**	**UL**
Constant	48.5	5.2	9.2	.000	38.2	58.8	18.1	8.1	13.3	.000	92	124
CHAOS	-.86	.77	1.1	.008	-.65	2.3	-.39	1.1	-3.3	.001	-1.6	-6.3
PFC	.16	.27	-.58	.001	-.71	.38	.62	.42	-1.4	.045	-1.4	.21
PFC×CHAOS	.03	.04	.38	.011	-.06	.09	.01	.06	1.6	.006	-.01	.22
	R^2=.34		ΔR^2=.33		F=17.8		R^2=.38		ΔR^2=.37		F=22.9	
Constant	47.8	6.5	7.2	.000	34.8	60.7	110	10.1	10.8	.000	90.6	130
CHAOS	-.21	1.1	.80	.002	-1.3	3.1	-.54	.76	-3.1	.002	-8.9	-2.1
PFC	.07	.22	-.35	.012	-.55	.35	.34	.34	-1.4	.161	-1.1	.19
PFC×CHAOS	.08	.04	.02	.032	-.06	.08	.02	.05	1.9	.046	.01	.23
	R^2=.34		ΔR^2=.33		F=17.7		R^2=.38		ΔR^2=.37		F=22.4	
Constant	31..8	4.5	7.0	.000	22.9	40.8	127	6.8	18.7	.000	114	141
CHAOS	.41	.97	.42	.068	-1.5	2.3	.23	.47	-.83	.041	-4.1	1.6
PFC	-.51	.16	3.1	.001	.19	.83	.18	.24	-4.8	.000	-1.6	-.70
PFC×CHAOS	.02	.03	.57	.563	-.04	.08	.13	.05	-.26	.004	-.11	.08
	R^2=.41		ΔR^2=.40		F=28.1		R^2=.49		ΔR^2=.48		F=42.8	

Note. CHAOS= Confusion, Hubbub and Order Scale, PFC= Problem Focused Coping; EFC= Emotion Focused Coping; DC= Dysfunctional Coping.
*p < .01. **p < .05. ***p<.001

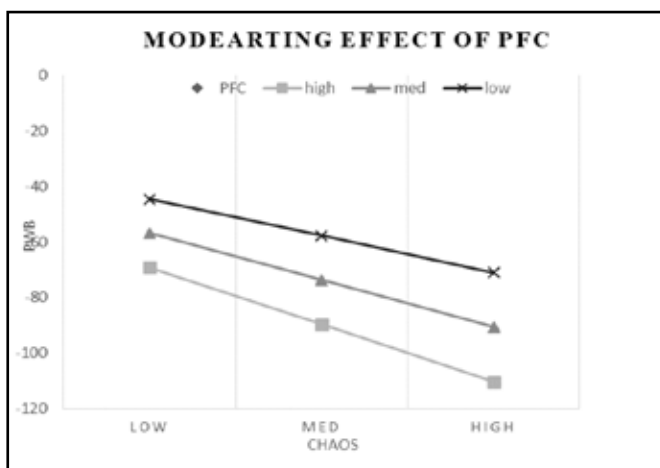**Figure 1.** Moderating effect of Problem-Focused Coping in predicting psychological wellbeing

Figure 2. Moderating effect of Emotion-Focused Coping in predicting psychological wellbeing
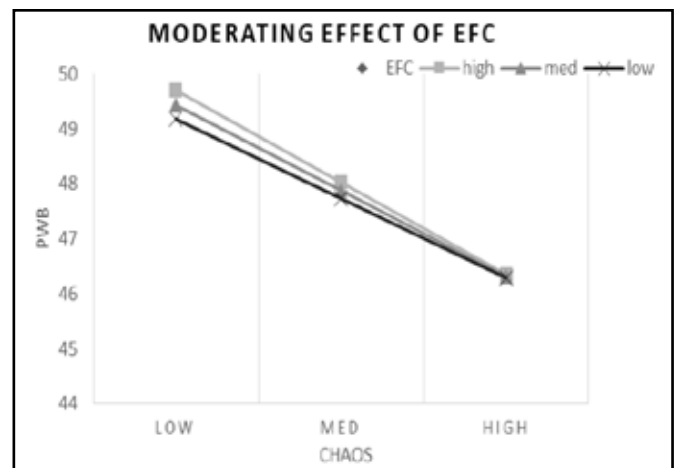
Figure 3. Moderating effect of Problem-Focused Coping in predicting psychological distress
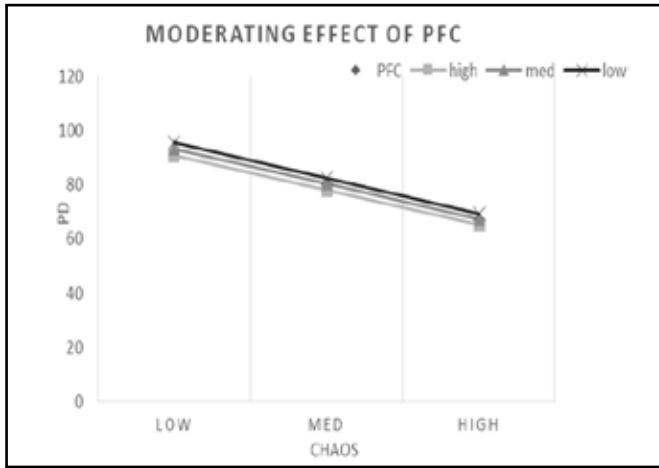

Figure 4. Moderating effect of Emotion-Focused Coping in predicting psychological distress
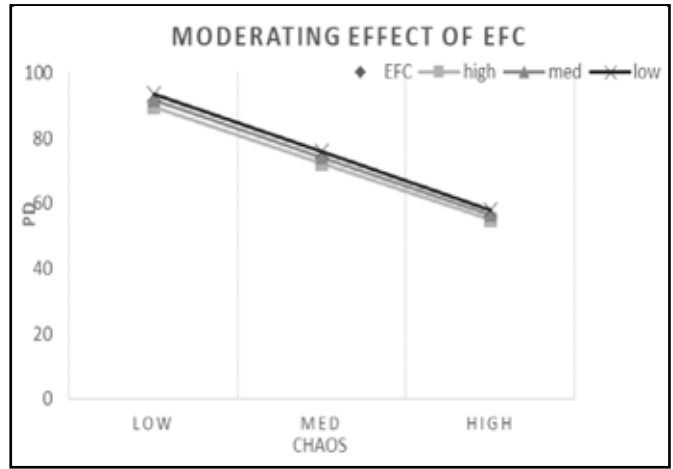
Discussion

Inter correlation matrix showed the relationship between household chaos, mental health, and coping strategies. According to the results, household chaos had a significant negative correlation with mental health which indicates that more chaos at home predicts a low level of mental health. Adolescents who suffer from household chaos pertain to be affected by mental health. These findings are consistent with research conducted by Klemfuss (2018) to examine the effect of household chaos on mental health. Psychological well-being significantly negatively correlated with household chaos which showed that individuals with chaos scored low on psychological well-being. In line with the previous study, the stress of household chaos is related to psychological well-being (Cooper & Marshall, 1976). Previous literature has shown that household chaos affects psychological well-being (Deater-Deckard et al., 2012). The theory of chaos explains that psychological well-being gets affected by the harmful risk factors of chaos in adolescents (Gonzales et al., 2007). On the other hand, psychological distress showed a significant positive correlation with household chaos. A previous study also revealed that a crowded home environment is correlated with psychological distress (Zvara et al., 2014).

Figure 5. Moderating effect of Dysfunctional Coping in predicting psychological distress
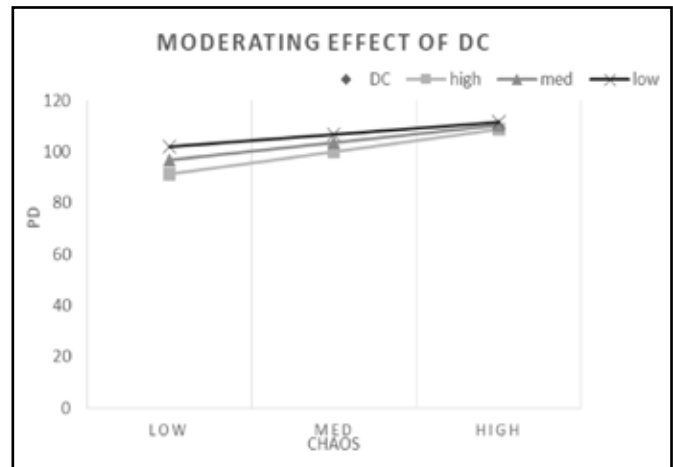
Multiple regression analysis was performed to see the effect of household chaos and coping strategies (emotion-focused coping, problem-focused coping, dysfunctional coping) on psychological wellbeing. Psychological well-being refers to the efficacy in working, hopefulness, complete emotional state, self-acceptance, autonomy, personal growth, and positive functioning (Keyes et al, 2002). Household chaos appeared to be a significant negative predictor of psychological well-being and the beta value explained .59 units decrease in psychological wellbeing. Previous literature has shown that household chaos affects psychological well-being and minimizes optimal functioning (Deater-Deckard et al., 2012). Problem-focused coping appeared to be the strongest positive predictor of psychological well-being. This finding is in line with a study predicting the role of coping for psychological well-being. It was concluded that higher use of problem-focused coping predicts psychological well-being (Cai et al., 2020). Emotion-focused coping appeared to be a significant positive predictor of psychological well-being. Emotion-focused coping decreases the stress level and contributes to enhancing the psychological well-being (Jang et al., 2019). Dysfunctional coping appeared to be a negative predictor of psychological well-being. Avoidance coping or dysfunctional coping strategy is related to depressive symptoms and poor adaptation or maladjustment (Griffith et al., 2000). Psychological distress is refer to the state of emotional suffering and is embedded with terms such as stress, strain, and distress (Selye, 1974). Household chaos appeared to be a significant positive predictor of psychological distress and the beta value explained .15 units decrease in psychological distress. Anxiety and depressive symptoms are the factors caused by chaos at home and are characterized by behavioral problems and distress (Sanders & Abaied, 2015). Problem-focused coping and emotion-focused coping appeared to be a significant negative predictor of psychological distress. These findings are in line with the study of coping strategies with psychological distress. High scores on problem-focused coping and emotion-focused coping reflect the low score on symptoms of psychological distress (Chang et al., 2007). Dysfunctional coping appeared to be a significant positive predictor of psychological distress. In a previous study with dysfunctional coping and psychological distress, it was suggested that the dysfunctional coping mechanism rendered the psychological distress and makes a person more vulnerable toward general stress (Neville et al., 1997).

Problem-focused coping is adaptive in nature as it involves efforts in solving the problems rather than withdrawing and escaping from the situation (Baker & Berenbaum, 2007) which ultimately decreases psychological distress in long run among individuals, and decreases the impact of chaotic environment (Folkman & Moskowitz, 2000). Results of problem-focused coping with all the outcome variables reveal that the moderating role of problem-focused coping in relationship with chaos and psychological well-being. Findings suggests that PFC significantly predicts psychological wellbeing and explain the total variance of 34% in PWB. CHAOS produced a significant negative effect on psychological well-being. The findings of the moderation table are further described through the mod graph which depicts that problem-focused coping significantly moderate the relationship between household chaos and psychological well-being among adolescents. The graph shows that in the presence of moderator problem-focused coping, the effect of CHAOS is decreasing on psychological well-being.

Problem-focused coping significantly predicts psychological distress explaining the total variance of 38% in psychological distress. CHAOS produced a significant negative effect with psychological distress explaining the additional 15% variance in PD. The findings of the moderation analysis are described through the mod graph (Figure 6) depicts that problem-focused coping significantly moderates the relationship between household chaos and psychological distress among adolescents. The graph shows that problem-focused coping decreasing the effect of CHAOS on psychological distress. The results of the present study are consistent with the existing literature (Stanton et al., 2000) which indicated that problem-focused coping moderated the relationship between chaotic home environment and neurotic disorders.

Limitations and Recommendations

A cross-sectional design was used to collect the data from adolescents. For future research, it would be more beneficial to do research with more cities for the effectiveness and generalizability of the data. To examine the effect of household chaos on mental health, more research are required to conduct. Moreover, this research is limited to the mental health of adolescents, while it can be done with other domains of health-related issues.

Three questionnaires were used in the current study which was time-consuming to collect the data. For future research, it would be better to use questionnaires with fewer items and in a short form. For future research with these variables, qualitative research will be suggested, as it will provide the difference between age ranges in the context of using coping strategies. Qualitative research will provide in-depth explanation of the effect of household chaos on mental health. Age is an important part to explore the cause and effect among adolescents.in this study adolescents between the ages range of 10 to 19 years were taken. It would be more effective for future research that data should be taken from a specific age limit among adolescents to explore better findings.

Parents, teachers, and adolescents should be aware of the concepts of household chaos, mental health and coping strategies through seminars, media, conferences, and discussions. As it is very important to be aware of these concepts for better functioning and mental well-being. A union NICHD Early Child Care Research Network was introduced in 2003 for the intervention of children who suffers from household chaos. By enhancing the understanding of coping strategies, the provision of guidelines related to the management of risk factors can reduce dysfunctionalities.

Declaration

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Conflict of interest. The authors are well informed and declared no competing interests.

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Availability of data and materials. The datasets used and/or analyzed during the current study are available from the corresponding authors on reasonable request.

Ethics approval and consent to participate. Formal permission was acquired from institutional Ethical board to conduct research.

Competing interest. The authors declare to have no competing interests.

References

Artero S, Touchon J, Ritchie K. Disability and mild cognitive impairment: a longitudinal population-based study. *Int J Geriatr Psychiatry* 2001; 16, 1092-7. https://doi.org/10.1002/gps.477.

Baker, J. P., & Berenbaum, H. (2007). Emotional approach and problem-focused coping: A comparison of potentially adaptive strategies. *Cognition and Emotion, 21*(1), 95-118.

Brieant, A., Holmes, C. J., Deater-Deckard, K., King-Casas, B., & Kim-Spoon, J. (2017). Household chaos as a context for intergenerational transmission of executive functioning. *Journal of Adolescence, 58,* 40-48. https://psycnet.apa.org/doi/10.1016/j.adolescence.2017.05.001.

Bronfenbrenner, U., & Evans, G. W. (2002). Developmental science in the 21st century: Emerging questions, theoretical models, research designs, and empirical findings. *Social Development, 9*, 115-125. https://psycnet.apa.org/doi/10.1111/1467-9507.00114.

Bronfenbrenner, U., & Morris, P. A. (2006). The Bioecological Model of Human Development. In R. M. Lerner & W. Damon (Eds.), Handbook of child psychology: Theoretical models of human development, 793–828.

Cai, R. Y., Uljarević, M., & Leekam, S. R. (2020). Predicting mental health and psychological wellbeing in mothers of children with autism spectrum disorder: Roles of intolerance of uncertainty and coping. *Autism Research, 13*(10), 1797-1801. https://doi.org/10.1002/aur.2341.

Carver, C. S. (1997). You want to measure coping but your protocol'too long: Consider the brief cope. *International Journal of Behavioral Medicine, 4*(1), 92-100.

Chang, E.C., Sanna, L.J., Riley, M.M., Thornburg, A.M., Zumberg, K.M. and Edwards, M.C. 2007. Relations between problem-solving styles and psychological adjustment in young adults: Is stress a mediating variable? *Personality and Individual Differences, 42*, 135–144. doi:10.1016/j.paid.2006.06.011.

Compas, B. E., Malcarne, V. L., & Fondacaro, K. M. (1988). Coping with stressful events in older children and young adolescents. *Journal of Consulting and Clinical Psychology, 56*(3), 405.

Compas, B. E., Malcarne, V. L., & Fondacaro, K. M. (1988). Coping with stressful events in older children and young adolescents. *Journal of Consulting and Clinical Psychology, 56*(3), 405.

Cooper, C.L., & Marshall, J. (1976). Occupational source of stress: A review of the literature relating to coronary heart disease and mental ill health. *Journal of Occupational Psychology, 40*, 11– 28.

Deater-Deckard, K., Chen, N., Wang, Z., & Bell, M. A. (2012). *Socioeconomic Risk Moderates the Link Between Household Chaos and Maternal Executive Function. 26*(3), 391–399.

Evans, G. W., & Wachs, T. D. (2010). Chaos and its influence on children's development. *Washington, DC: American Psychological Association.*

Fiese, B. H., Rhodes, H. G., & Beardslee, W. R. (2013). Rapid changes in American family life: consequences for child health and pediatric practice. *Pediatrics, 132*(3), 552-559.

Folkman, S., & Lazarus, R. S. (1984). Stress, appraisal, and coping (p. 460). New York: Springer Publishing Company.

Folkman, S., & Moskowitz, J. T. (2000). Stress, positive emotion, and coping. *Current Directions in Psychological Science, 9*(4), 115-118.

González, M., Casas, F., & Coenders, G. (2007). A complexity approach to psychological well-being in adolescence: Major strengths and methodological issues. *Social Indicators Research, 80*(2), 267-295.

Griffith, M. A., Dubow, E. F., & Ippolito, M. F. (2000). Developmental and cross-situational differences in adolescents' coping strategies. *Journal of Youth and Adolescence, 29*, 183– 204. https://doi.org/ 10.1111 /jnu.12523.

Jang, M. H., Gu, S. Y., & Jeong, Y. M. (2019). Role of coping styles in the relationship between nurses' work stress and well-being across career. *Journal of Nursing Scholarship, 51*(6), 699-707.

Keyes, C.L.M., Shmotkin, D., & Ryff, C.D. (2002), Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology, 82* (6), 1007-1022.

Klemfuss, J. Z., Wallin, A. R., & Quas, J. A. (2018). Attachment, household chaos, and children's health. Families, Systems, & Health, 36(3), 303.

Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. Psychosomatic Medicine, 55, 234–247.

Matheny, A. P., Wachs, T. D., Ludwig, J. L., & Phillips, K. (1995). Bringing order out of chaos: Psychometric characteristics of the Confusion, Hubbub, and Order Scale. *Journal of Applied Developmental Psychology, 16*, 429–444.

Neville, H.A., Heppner, P.P. and Wang, L.F. (1997). Relations among racial identity attitudes, perceived stressors, and coping styles in African American college students. *Journal of Counselling and Development, 75,* 303–311. doi:10.1002/j.1556-6676.1997.tb02345.

Sameroff, A. (2010). Dynamic developmental systems: *Chaos and order. In G. W. Evans & T. D. Wachs (Eds.), Chaos and its influence on children's development: An Ecological Perspective,* 255–264. American Psychological Association. https://doi.org /10.1037/12057-016.

Sanders, W., & Abaied, J. (2015). Motivational systems and autonomic functioning: Overlapping and differential contributions to anhedonic depression and anxious arousal. *Motivation and Emotion, 39*(4), 602–612. https://doi.org/10.1007/s11031-015-9470-5.

Santrock, J.W. 2014. Adolescence. 11th ed. Dallas: McGraw-Hill Companies, Inc.

Selye, H. (1974). Stress without distress. *In Psychopathology of Human Adaptation,* 137-146. Springer, Boston, MA.

Stanton, A. L., Danoff-Burg, S., Cameron, C. L., Bishop, M., Collins, C. A., Kirk, S. B., & Twillman, R. (2000). Emotionally expressive coping predicts psychological and physical adjustment to breast cancer. *Journal of Consulting and Clinical Psychology, 68*(5), 875.

Tolor, A., & Fehon, D. (1987). Coping with stress: A study of male adolescents' coping strategies as related to adjustment. *Journal of Adolescent Research, 2*(1), 33-42.

Veit, C. T., & Ware, J. E. (1983). The mental health inventory (MHI-38). *Canberra, Australia: Department of Health and Ageing.*

World Health Organization (2004). Promoting mental health: concepts, emerging evidence, practice (Summary Report). Geneva: World Health Organization,.

Zvara, B. J., Mills-Koonce, W. R., Garrett-Peters, P., Wagner, N. J., Vernon-Feagans, L., Cox, M., & Family Life Project Key Contributors. (2014). The mediating role of parenting in the associations between household chaos and children's representations of family dysfunction. *Attachment & Human Development, 16*(6), 633-655.

Research Article

Experiences, Challenges, and Coping Strategies of Never Married Single Women in Pakistan: A Qualitative Analysis

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Abstract

Objective. Intimate relationships have their own vital position in any psychological and social wellbeing hierarchy. This study aims to understand the reasons why some women over 30 years of age remain single, and the social dynamics associated with their marital status.

Method. The study collected data through semi-structured interview of 8 educated Pakistani women aged between 30-36 years, living in Karachi. The Interpretative Phenomenological Analysis approach was used to explore the causes of singlehood.

Results. The transcribed interviews were analyzed, and common themes and phrases were identified. Five main themes were derived namely similarity/affinity, freedom, ambition, match making process and unpleasent life experiences.

Conclusion. Study findings highlighted that principal reasons for being single are compatibility factor and safeguarding ambition/freedom. Family pressures, lack of support to travel/live alone and social commentary are the main challenges faced by single women. Self-help strategies and virtual support groups are the major coping mechanism employed.

Keywords. *Singlehood, relationships, stigma, sociology of time, social identity, feminism, marriage.*

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Introduction

The institution of marriage holds significance in almost every human society. In collectivist societies like those of South Asia, arranged marriages are the norm which may be influenced by several socio-economic factors (Pande, 2014). Age is one such factor, and in Pakistan, early marriages are highly encouraged (Shahzad, 2017). As mentioned by Tabassum (2016), a relatively small percentage of women, 5.33%, by age 30-34 and 2.55% by age of 35-39 had never been married according to the data collected in 2012-13.

These never married women are a part of a heterogeneous group of women called single women. This group also includes widowed, divorced or separated women. However, in the context of this study, the term 'single' would refer to never married women who are not in any other intimate relationship. Concerning the marital state, as Hancock (2017) suggested, the word 'single' implies a deficiency – an absence of marriage. This deficiency is experienced by women of different cultures in different ways based on the social and cultural constructs of their society (Darrington et al., 2005). The experience, however, is defined by an umbrella term – 'Singlism'. This term was applied by DePaulo and Morris (2005) to express the stereotypes and discriminatory behaviours faced by unmarried people in almost every society.

It is important to understand here that 'Singlism' arises from the very essence of the stigma associated with those who are different. Goffman (1963) defines stigma as an 'undesired differentness' from what is the norm. This stigma arises from the societal view of what constitutes the womanhood norm. Womanhood in collectivist societies is defined as being able to (1) have an intimate, marital relationship with a man, (2) become a mother, and (3) accept economic dependence (Byrne, 2014).

Reasons for Singlehood

The absence of a relationship requires a multi-faceted analysis. Mainly singlehood is categorized into two classifications: voluntary and involuntary singlehood (Adamczyk, 2017). Formers are those who remain single by choice, and the latter are those who despite having the wish to marry are unable to find a partner. Undoubtedly, the difficulties with relationships and constraints factors – the involuntary factors - are associated with negative feelings such as depression and loneliness among both men and women.

Apostolou's (2017) study elaborates on the reasons for remaining single for both men and women under three main domains: difficulties with relationships (personality factors), freedom of choice and constraints. The personality factors include issues like lacking confidence, being shy, not knowing how to flirt as well as inflexibility and not being willing to compromise. Freedom of choice factor is associated with pursuing goals and remaining in casual relationships. This category mostly includes those who voluntarily stay single.

The reasons that women quote for their singlehood also differ in terms of the societies they live in. Ntoimo and Isiugo-Abanihe (2014) reported that for western women, incompatibility between career and marriage, failure in past relationships or being unable to find the right match, and the perception that marriage would curtail their freedom are offered as the main reasons for being single. Whereas, for Indian women additional factors associated with collectivist societies such as parental objection, financial constraints and loss of parents are also reported (Prabhakar, 2011).

Studies on Pakistani women such as Tahir (2012); and Iram and Muazzam (2016) elaborated that in Pakistani society, women's marital status is the key factor which has a vast influence on self-esteem of women. Sultana et al. (2021) pointed out that multiple family pressures such as socio-economic constraints, patriarchy, responsibility of other family members, strong caste system and demand of attractive physical appearance are the main reasons for many Pakistani women to remain single.

The age bias is evident here as well. As Barak (2014) noted that spinsters – single women beyond the prime age of marriage - are often depicted as 'Cat Ladies' in western media across all genres. Cat Lady is one who showers her affection on cats as she has failed to have her own family and children. Singlism also adds to the detrimental effects of a lack of intimacy and romantic relationship faced by single people.

Coping Strategies

Trimberger (2005) emphasized that single people can provide for their lack of emotional loneliness through strong a social network which she categorizes as "pillars of support" -nurturing home, satisfying work, satisfaction with their sexuality, connections to the next generation, a network of friends and possibly family members, and a feeling of community.

The experiences of Singlehood and Singlism differ according to societies and cultures (Jordal et al., 2013). As suggested by Tahir (2012) and Sultana et al. (2021), there is an acute necessity to analyze the dimensions of singlehood among Pakistani women. Thus, this qualitative analysis aims to provide a direction towards spreading awareness and understanding about the social experiences of single women in Pakistan.

Method
Participants

Altogether 8 single Pakistani women between 30-36 years of age took part in this research. The participants were selected through the snowball sampling method.

All participants were working women and belonged to middle or upper-middle class based on their annual household income. Specific operational criteria of 'single women' quoted by Ibrahim and Hassan (2009) in a study on Malay women has been adopted. It defines singleness as (1) never married, (2) over 30 of age, (3) not cohabiting, and (4) childless.

Given below is a table of demographic details of participants gathered when questioned about their background:

Table 1

Demographic Details of Participants (N=8)

Participant	Age	Profession	Socio-economic Class
1	34 years	Author	Upper - middle class
2	30 years	Editor/Manager	Upper - middle class
3	31 years	Journalist /Student of Urban Planning	Middle class
4	32 years	Documentary Filmmaker	Middle class
5	30 years	Lecturer	Middle class
6	36 years	Teacher	Upper - middle class
7	30 years	Teacher	Middle class
8	30 years	Journalist	Upper - middle class

Material and Procedure

The participants were interviewed individually for on average an hour and a half each. The language used, (Urdu or English), was based on the preference of the participant. The interview was designed after reviewing international guidelines of University of Florida (Stofer, 2019) for qualitative data collection. Keeping their interview guidelines in consideration, major categories for the interview were developed, such as reason for being single, challenges, coping mechanisms used. Within each category a main question was framed, and probes were developed after conducting one pilot interview with a colleague. An ice breaking question was added in the beginning asking about the interviewee's background. A generic question was added at the conclusion, asking about societal factors that contribute to the challenges, to ease out the focus on personal details and end the conversation on a macro level discussion.

The interviews were audio recorded (with consent) and then transcribed verbatim.

Thematic and interpretative phenomenological analysis was then used to interpret the transcripts. Meanings and similar patterns were discovered from the raw data based on personal experiences of participants. Then major themes were identified from their responses. There were five core questions that were asked during the interview.

Considering the cultural milieu of Pakistani society, The Interpretative Phenomenological Analysis (IPA) was chosen to understand better the intimate reasons and challenges associated with the single status. The quotes of the participants mentioned in this document were translated in English wherever required to maintain consistency.

Results

The overall analysis of the content of the interviews reveals some major themes about singlehood for Pakistani women. The specific themes revealed for each area are as follows:

Table 2

Reasons for Being Single (N=8)

S. No.	Themes	Coding Response
2.1	Similarity/Affinity	• Mental affinity with spouse • Want communication in relationship • At least bachelors (education similarity) • Must have enough salary to manage a family (financial similarity)
2.2	Freedom	• Not willing to compromise • Self-awareness of rights • Don't want to lose freedom
2.3	Ambition	• Want to pursue career • Want to live a purposeful life
2.4	Matchmaking process	• Not many proposals /mother is not social • Got rejected or rejected proposals based on socio-economic factors • Religious rituals - *Istekhara* (A method to pray to Allah to give you any indication through dream about the suitability of proposal) was negative
2.5	Unpleasant life experiences	• Financial crisis in early life • Anti-marriage sentiments due to broken family/father's death early in life • Failed dating relationships • Broken engagement

2.1 Similarity/Affinity. The concept of finding a spouse with whom one has affinity was common among all interviewees. It was further elaborated to include dimensions of mental, educational and financial similarity. There was also a common mention of how age and age-related exposure altered preferences for a spouse.

"Obviously, when you reach a certain age, whether a male or a female, your references have developed so much that you are not looking for a man who is cool and looks cool, but you are looking for a man who understands you."– **Documentary Filmmaker, 32**

The women who are slightly less established refer to the additional financial or educational similarity.

"Once I had a proposal…. and I was earning more, and he was looking for a girl who could work after marriage and support his mother and nurse her … in future also one could not foresee any financial or professional progress on the guy's side and on this basis, we rejected the proposal which was taken as an offense by relatives in the family." – **Lecturer, 30**

2.2 Freedom. A core theme arising out of the transcripts is a wish to live on their own terms. Most of the participants shared the feeling that marriage, especially with an incompatible person, would curtail their freedom.

"Like when I think about marriage I think of a blank wall, I don't see anything beyond it, and I also feel like it's going to be the end of me." – **Journalist/Student of Urban Planning, 31**

Not all women shared the opinion that marriage would curtail their freedom entirely. However, all were apprehensive about falling for the wrong person who would clip their wings. "(I need) to know that this person who seems reasonable to me is he really proud of me and does he understand that I won't leave work, even if it's not to earn money, it could be planting trees or anything else for that matter, but I won't sit at home." – **Documentary Filmmaker, 32**

2.3 Ambition. Most women were of the view that marriage is likely to hinder their goal to pursue a career and explore opportunities of personal and professional growth. "I am not saying people should marry my CV, but they should know what I have done and what I am not ready to give up." - **Documentary Filmmaker, 32**

"I want to study; I want to grow as a person and as a professional. I can get along my responsibilities with work and my studies." – **Lecturer, 30**

2.4 The Matchmaking Process. A few women reported being single not by choice but by circumstances. With dependency on factors such as ethnicity, caste, socio-economic background, religious beliefs, and sect etc. to match with the proposal being the main decision makers, opportunities were missed.

"The main reason behind my still being single is my sect, the belief system we follow… my father diligently follows the AhleSunnat teachings. So, my family would say no for the proposals (that were from different schools of thought). Another reason where other side said no is that we belong to the Bihari caste. There is a general concept that Biharis are 'taiz' (cunning)." – **Teacher, 30**

"It wasn't like I had any opportunities because my mother is not very social. So, no one approached us." – **Editor/Manager, 30**

2.5 Unpleasant life experiences. More than half of the women in the sample of this study reported having faced traumatic or disappointing past experiences in inter-personal relationships either early or later in life which contributes to their still being single.

"It started when my father passed away. Fights erupted between my married brother and unmarried elder sister and somehow my brother ended up leaving us, and I was like his marriage had ruined my family." – **Editor/Manager, 30**

"I had to give up on so much different things of life (financial crisis in family that began when participant was in primary school and remained till her adult life) that now I am in no position and no mood to give up on anything." – **Journalist/Student of Urban Planning, 31**

For others, intimate relationship failures have led to a conviction of focusing more on personal and professional growth than finding a spouse.

"When my engagement broke off, the core reason why the engagement ended was mental compatibility. I set my priorities then." – **Lecturer, 30**

Table 3

Challenges Faced by Single Women (N=8)

S. No.	Themes	Coding Response
3.1	Family pressure	• Resistance from family and relatives • Expectation to compromise on everything /to settle for less • Emotional exhaustion • Ambiguous family expectations
3.2	Being alone	• Housing challenge • Travelling challenge • Sexual exploitation • Moral Policing
3.3	Social commentary	• Religious suggestions • Body shaming • Pity

3.1 Family pressure. This was the overarching theme in almost every discourse. Most of the women felt that with time the family support starts to dwindle, and they are constantly being told to compromise and 'settle for less'.

"..ultimate pressure is one which comes from parents side. Deep down knowing that you have been a cause of trouble for them, that was a painful thing." – **Lecturer, 30**

"Relatives keep telling my mother that don't be too picky, why are you so concerned with guy's education, he is not educated but is employed, and if someone is not earning well, they say things like it will get better tomorrow." - **Teacher, 30**

Some women also shared that they received ambiguous expectations from family over the years with reference to ideas of marriage, education, independence, job, family's honour etc. that now the challenge is mainly to counter the confused demands of their family.

"For years and years, you trained us that way. You've made us so professional that we've built-up walls around and it's difficult to be vulnerable." - **Documentary Filmmaker, 32**

"My family gave me independence; they gave me freedom. Then when I started deciding myself, it became a problem." - **Journalist, 30**

3.2 Being Alone. Remaining single means doing things on your own without the support or company of a spouse. This includes living alone and travelling alone. Latter was an issue faced by almost all the women interviewed.

"Single woman living alone in Karachi is itself a huge challenge, a volume should be written about it." – **Journalist, 30**

Living alone also meant being sexually exploited by a relative for her:

"My mother would say that either move abroad, or if you want to live in this society then get married, otherwise apne hi hath saaf karte hain (relatives will take advantage of you). I thought it was all nonsense; but it wasn't nonsense until I faced it." – **Editor/Manager, 30**

Everyday travel to work is also no less than an obstacle for these women.

"When you try to step out to work, first question is if you get late how you will reach back home. You are a woman; how will you travel. If you had a husband, he could have picked and dropped you from work." – **Author, 34**

"I have seen women on motorcycles but have also seen how people treat them. Travelling has always been a challenge. If you know how to drive a car, people say you are independent, but even you cannot get any maintenance work done without maame chaache ki source (reference of a male relative), no mechanic will do your work honestly (will charge more)." – **Editor/Manager, 30**

"If you get a career opportunity and you want to move to another city, it is discouraged, but if a married woman's husband finds work there, then she is supported, offered moral and emotional support." – **Journalist, 30**

3.3   Social commentary. Nearly all women shared that they come across distant relatives and even random people who feel no qualms in commenting about their single status, making them realize that something is missing in their lives.

"….and then the next question will be (by relatives or acquaintances) you will be alone for the rest of your life, you won't have kids, family. This is a huge challenge because you are constantly pitched in about this." – **Author, 34**

"Everyone would step in and say read this 'wazifa' (religious scripture), or read this verse of Quran for 7 days, you'll surely get married." – **Teacher, 30**

This social commentary goes to an extent to involve expressing pity and body-shaming the women.

Table 4

Societal Factors of Singlehood Among Women (N=8)

S. No.	Themes	Coding Response
4.1	Patriarchal setup	• Daughters are a burden and should be married off before parents die • Woman must be owned by someone, cannot exist on her own • Woman needs a man to survive
4.2	Religious interpretations	• Single people will sin • Girls should be married off early
4.3	Source of entertainment	• Lot of free time, free entertainment source • Women are seen as fair game
4.4	Pre-set paths	• No place for mental compatibility • Fixed norms and paths to follow • Your achievements are termed as your flaws
4.5	Culture	• Caste issues • Women react different when they want to marry off a daughter as compared to when they should marry off a son

4.1 Patriarchal setup. This theme emerged in every participant's conversation. The points revolved around the concept that woman needs a man to provide her security in form of a father, brother or a husband.

"..like women is someone's property or someone in association with someone else, she is neither an individual nor independent. She is someone's daughter, wife, so she has no say, including her marriage – **Journalist/Student of Urban Planning, 31**

The underlying economic dynamics of this patriarchal setup were explained by one of the participants.

"Women will continue to suffer till they get financial independence because everyone fears financially independent woman. Single financially dependent woman has no value, and she is told to go get tea for everyone." – **Documentary Filmmaker, 32**

4.2 Religious interpretations. Morality and chastity are intertwined with religious doctrines and are used against single people in the most biased manner.

"People think that single people are prone to commit sin if they are not married off, as if married people don't sin ever, they don't indulge in extra-marital affairs." – **Editor/Manager, 30**

4.3 Source of entertainment. Some participants strongly believed that interference in other people's life is solely a source of entertainment and single women are an easy target as they are already vulnerable due to lack of support from their families.

"People give meaning to their lame lives by criticizing someone and they feel happy by teasing single people. Sadists…" – **Editor/Manager, 30**

4.4 Pre-set paths. There as certain milestones that are set by the society and one is expected to follow those set paths.

"You are born, then you study certain subjects and get degree in certain disciplines, then at certain age you should get engaged and then get married, then within certain time you should have your first child etc." – **Lecturer, 30**

4.5 Cultural aspects. The arranged marriage culture is also sometimes a barrier for women who want to get married but are rejected by the mother and sisters of the potential spouse at the very first stage due to age or looks or academic background.

"A woman in our society reacts differently if she is a mother of a daughter as compared to when she is a mother of a son." – **Teacher, 30**

Table 5
Strategies Employed to Overcome Challenges (N=8)

S. No.	Themes	Coding Response
5.1	Resistance	• Taking stand for the first time • Rejecting proposal • Coming up with milestones to achieve
5.2	Self-reliance	• Not letting relatives in anymore • Staying physically fit • Humour • Training mind not to care/Self-counseling
5.3	Seeking support	• Therapy • Social media support system/online friendships

5.1 Resistance. Plain resistance was one of the most opted for coping strategy by these women to ensure that they are not married off under pressure. Some took a stand the first time their parents asked them to go through the arranged marriage process and give up on their requirements. Whereas others had to keep struggling each time there was a rishta (proposal) scene and put up a strong defense. Some even took refuge in coming up with new milestones to achieve before they'll be ready for marriage.

"You have to see how to deal with your family, like my family was easy, I just keep coming up with different reasons." – **Journalist/Student of Urban Planning, 31**

"I clearly told them to let it be and when time comes, I will let them know and I'll decide for myself." – **Documentary Filmmaker, 32**

5.2 Self-reliance. It propped up in conversations of participants of this study that they use humour to defend against the society's taunts. Self-counseling is another strategy that was shared by couple of participants which helps them with staying positive and shut out external negative messages. Some totally shut out the external voices by staying away from relatives.

"I would rather advice that as a single woman, don't let relatives in..." – **Editor/Manager, 30**

"I have made this thing in my head, that I should not let this thing affect me, that I have other things to do." – **Journalist/Student of Urban Planning, 31**

5.3 Seeking support. Not everyone is good at self-counseling and so there was one participant who shared that she sought help through therapy. Also, online friendships according to her were of greater help than real life relations.

"I have survived because I was very lucky, pure fortune that I had mental health professionals, they were god send." – **Teacher, 30**

Discussion

The very expectations from single females and the idea of adapting to the groom and his family's wishes lead to the compatibility factor, which was mentioned by almost every participant. The next most quoted reason for being single was to safeguard ambition/freedom. In Pakistani society, it is common to be as high as asking the woman to completely alter her lifestyle and leave studies/career to become a housewife. However, as the social construction of reality suggests, much of our world perceptions and decisions are based on social and interpersonal influences (Galbin, 2014). The women who value their independence and ambition are thus perceived as defying the norms and must move against the tide of the societal influences.

Moving on to the challenges faced by single women who demand to live on their own terms, it is important to first understand the patriarchal setup of Pakistani society. They remain single involuntarily because they are a misfit in these structures that expect women to work at home, with their labour remaining unpaid resulting in economic dependence and to view other close relationships such as family and friends being secondary to the relationship of husband and in-laws. Exploitation by men is also another aspect due to which women prefer remaining single than to try finding a spouse on their own because the patriarchal structures give a clear path to a man who exploits, and the woman must bear the consequences. The family pressures, lack of support to travel/live alone and social commentary mentioned as challenges by single women all have their roots within these patriarchal structures of Pakistani society. Religious interpretation as mentioned under societal factors are interpreted in a way to justify, and the caste system helps maintain the existing status quo.

Most of the strategies employed by participants of this study to overcome the challenges are based on self-help or finding virtual support system consisting of people who face similar situations. The overall society structures and interpersonal relationships hardly offer any comfort to women who choose to remain single, voluntarily or involuntarily. The references made by participants about resorting to self-counseling and professional therapy can further be explored regarding the psychological and mental health concerns and issues that accompany the single status.

None of the participants mentioned any workplace related prejudice or challenge that they might have come across. In fact, for almost all participants of this study, work was a source of independence and refuge where they were allowed to express their own identities. It is a unique insight into the cultural norms of Pakistani society in which family life holds the utmost importance and influence on a women's existence.

Conclusion

Overall, this study can help identify the social and cultural judgments faced by single women in Pakistan, the economic challenges that arise due to the stigma associated with the single status and the psychological stressors added to everyday lives. The study underlined that compatibility factor and safeguarding ambition/freedom are the foremost causes for being single. Whereas family pressures, lack of support to travel/live alone and social commentary are the key challenges encountered by single Pakistani women. Coping mechanisms such as self-help strategies and virtual support groups are majorly reported to be employed to deal with the problems as a result of singlehood phenomena. The sample only refers to educated women from middle/upper class based in Karachi. As social and cultural factors play a major role in the experiences of single women, the change in demographics may result in similar or different findings. Also, a broader sample may help with statistical analysis of the data.

Declaration

References

Adamczyk, K. (2017). Voluntary and Involuntary Singlehood and Young Adults' Mental Health: an Investigation of Mediating Role of Romantic Loneliness. *Current Psychology (New Brunswick, N.J.), 36*(4), 888–904.

Apostolou, M. (2017). Why people stay single: An evolutionary perspective. *Personality and Individual Differences, 111*, 263-271.

Barak, K.S. (2014). *Spinsters, Old Maids, and Cat Ladies: A Case Study in Containment Strategies* [Doctoral Dissertation, Bowling Green State University]. American Culture Studies Ph.D. Dissertations. 10.

Byrne, A. (2014). Single women in story and society. In T. Inglis (Ed.), *Are the Irish different?* (pp. 76-87). Manchester University Press.

Darrington, J., Piercy, K.W., &Niehuis, S. (2005). The Social and Cultural Construction of Singlehood among Young, Single Mormons.*The Qualitative Report, 10*(4), 639-661.

DePaulo, B. M.,& Morris, W. L. (2005). Singles in Society and in Science. *Psychological Inquiry, 16*(2-3), 57–83.

Dr Aneela Sultana, M. M. Z., Mr Farooq Ahmed. (2021). Dilemmas of Singlehood in Contemporary Pakistani Culture: A Qualitative Study Of Unheard Voices. *Pakistan Journal of Gender Studies, 21*(1), 1-18.

Galbin, A. (2014). An Introduction to Social Constructionism. *Social Research Reports,26,* 82-92.

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity* (1st ed.). Simon & Schuster, Inc.

Gove, W.R., Style, C.B., &Hughes, M. (1990). The Effect of Marriage on the Well-Being of Adults: A Theoretical Analysis. *Journal of Family Issues, 11*(1). 4-35.

Hancock, L.L. (2017). *How Women Experience and Respond to Singlism: Stereotyping and Discrimination of Singles* [Doctoral Dissertation, Walden University]. Walden Dissertations and Doctoral Studies.

Ibrahim, R., & Hassan, Z. (2009). Understanding Singlehood from the Experiences of Never-Married Malay Muslim Women in Malaysia: Some Preliminary Findings. *European Journal of Social Sciences, 8*(3).

Iram, H., & Muazzam, A. (2016). Self Esteem, Body Image and Self-Conciousness Among Women After Rejection of Marriage Proposals. *Pakistan Journal of Gender Studies,12*. 71-86.

Jordal, M., Wijewardena, K., & Olsson, P. (2013). Unmarried women's ways of facing single motherhood in Sri Lanka – a qualitative interview study. *BMC Women's Health, 13*(1), 5.

Ntoimo, L. F. C., & Isiugo-Abanihe, U. (2014). Determinants of Singlehood: a retrospective account by older single women in Lagos, Nigeria. *African Population Studies, 27*(2), 386-397.

Pande, R. (2014). Geographies of marriage and migration: Arranged marriages and South Asians in Britain. *Geography Compass, 8*(2), 75-86.

Perlman, D., & Peplau, L.A. (1982). Theoretical Approaches to Loneliness. *Loneliness: A Sourcebook of Current Theory, Research and Therapy.* Wiley.

Prabhakar, B. (2011). Causes for remaining single: A comparative study. *Journal of Psychosocial Research, 6*(2), 203.

Shahzad, A. (2017). Differentials in Female Age at Marriage in Pakistan: Have they Changed or Not?. *NUST Journal of Social Sciences and Humanities, 3*(1), 71-94.

Stofer, K. A. (2019). Preparing for One-on-One Qualitative Interviews: Designing and Conducting the Interview. 4.

Tabassum, N. (2016). *Women in Pakistan Status in Socio-Cultural and Politico-Legal Domains.* Higher Education Commission-Pakistan.

Tahir., M. A. (2012). Determinants of Psychological well-being and self-esteem in married and unmarried women. *Pakistan Journal of Clinical Psychology, 11*(2). Trimberger, E. K. (2005). The New Single Woman. Beacon Press.

Trimberger, E. K. (2005). *The new single woman.* Beacon Press.

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Research Article

Perspective of Professional Integrity in University Teachers: A Qualitative Study

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Abstract

Objective. Teachers play a vital role in our education system. It is important for teachers to have integrity and ethical standards. The present study was conducted to unveil the perception of Professional Integrity in university teachers.

Method. Purposive sample of university teachers ($N = 104$) belonging to different departments were drawn from four public sector universities of Lahore and Islamabad. Their age of university teachers ranged from 25 to 62 years. Open ended questionnaire was constructed keeping in view the previous literature and model about integrity. The questionnaire was administered online due to the outburst of pandemic (Covid-19).

Results. The responses were analyzed by using thematic analysis. Eight themes were derived namely professionalism, honesty, positive attributes, negative attributes, attitude with colleagues, attitude with students, quality of teaching, morality, institutional factors and research integrity.

Conclusion. The study revealed various factors that influence teachers' integrity. This study has implications for the universities to enhance professional integrity in teachers. Teachers can be trained incorporate professional integrity in their academic journey.

Keywords. *Professional, integrity, morality, quality teaching, research, university teachers.*

Foundation University Islamabad

Introduction

The development of a state is deep-rooted in its education system. The more the quality of education the better the next generation of the country will be. Education system has gained a lot of importance in Pakistan in the past few years but the problems in its infrastructure and quality of education still prevails. Unfairness, discrimination, dishonesty and false claim of degrees and expertise are also the common problems that are ignored. Moreover, fraud and corruption in the education system of Pakistan is a major hurdle for teachers to act professionally, therefore professional ethics and integrity should be focused to promote professionalism (Amir et al., 2020).

When talking about the upgradation of the education system the individuals who have the utmost responsibility are teachers. A teacher should be sufficiently motivated and committed to duties to effectively operate an institution to promote educational development. Values, morals, ideas, management, and behaviour are the current issues in teaching as they are linked to the surrounding changing needs of the institute as well as the society and to cope with this professional integrity is the chief characteristic of the teaching profession (Toom, 2017).

Professional integrity is to take up the profession of teaching honestly and responsibly. It deals with issues like cheating, fraud, moral values, plagiarism, injustice, unfairness and facilitation of the acts of dishonesty by others (Peters, 2019). Hinman (2002) is of the view that integrity comprises of five principles, i.e., honesty, responsibility, trust, respect, and fairness. Nillsen (2005) states that integrity means to accept the reality without any personal interest in the outcome. It is accepting the situation as such without manipulating it. Professional commitment to duties and organization is also the contributing factor of integrity (Micheál Ó Gríofa & Tomás Ó Ruairc, 2012). Moreover, Banks (2010) asserts that integrity is a multifaceted term. It does not only indicate how committed a person is but also focuses on person's character, competence, morals and the ability to honestly reflect upon things. It is the foundation of a person's character. A person with high integrity has a flawless character in every aspect of life as every action and decision is based on fairness and honesty.

Barnard et al. (2008) have defined Professional Integrity as *"a multifaceted and dynamic construct based on a moral foundation and inner drive that is managed by cognitive and affective processes manifesting various integrity-related behaviours* (pp. 1).

The theoretical framework of Professional integrity is based on five themes. The first theme is foundational derives of integrity which has the category of moral compass and inner derive. Moral compass is part of integrity that is based on the internalized set of moral values and norms that a person has. The category of inner derive has personal motives, needs, and goals. The second theme is authenticity which refers to being honest, straightforward, true and genuine at intrapersonal and interpersonal level. The third theme is functions of integrity which has the categories of cognitive function of integrity and affective function of integrity. Cognitive function is the understating of norms and principles and their application in different circumstances while affective function of integrity includes conscience and self-regard. Conscience is evaluation of one's behaviour against the moral values and self-regard is to feel rational and positive about oneself. The fourth theme is competencies of integrity which includes behavioural manifestation of integrity. Competencies of integrity are self-motivation, assertiveness, honesty, consistency, commitment, self-discipline, responsibility, trustworthiness and fairness. The fifth theme is developmental context of integrity which reflects that integrity is developed over time and is influenced by ones upbringing.

Previous literature shows few other factors that are associated with professional integrity which are discussed further. The first factor is quality of teaching in academia which refers to the quality of education that is maintained and not compromised. It includes effective content delivery (Ofojebe & Ezugoh, 2010), time management, punctuality and regularity (Sahito et al., 2016), and expertise of the teaching staff who can deliver the content effectively (Emmer & Stough, 2001). Azer (2005) has reported that integrity is a central aspect of quality of teaching. High integrity of teachers has a positive impact on students and creates an environment of honesty and fairness.

The second factor is student-teacher relationship which has a long lasting effect on students' academics as well as on their well-being. Support and guidance by teachers can create an environment that can enhance academic achievement, dignity and self confidence in students (Rimm-Kaufman & Sandilos, 2018). Chory-Assad and Paulsel (2004) is of the view that all the decisions in an educational institution should be based honesty, fairness and justice to promote integrity.

A teacher should not be biased for students in terms of assessment of grades, assistance, and behaviour as it effects their confidence, self-esteem, worth and capability (Arasli & Tumer, 2008). Similarly, discrimination due to personal bias lowers self-respect of students and makes them inactive. Teachers should be trained to maintain equality and fairness in class which will increase professional integrity (Aydogan, 2008).

The third factor is morality in teachers which is the basic foundation of integrity. Buzzelli and Johnston (2001) define morality as a *"set of a person's beliefs and understandings which are evaluative in nature: that is, which distinguish, whether consciously or unconsciously, between what is right and wrong"* (p.876). According to Halfon (1989), integrity is the pursuit of moral life. It reflects a person's dedication towards moral values. Moral commitment is considered a prerequisite for having integrity which means that if a person has moral commitment than he will strictly abide by principles and values and the consistency in following these principles and values will determine his integrity (Vandekerckhove, 2010). Banks (2010) have proposed three levels of professional integrity in which morality is an important aspect. At first level, professional integrity means to morally act good considering the ethical rules and codes. At second level professional integrity is the commitment to one's identity and moral values. The third level is moral competence in which a person reflects and re-evaluates previously believed ideas and values.

The fourth factor is research integrity which refers to integrity of conducting the research ethically. It is a commitment to the criteria and standards of research as well as the discipline in which the research is being conducted. Research integrity has three elements. The first is the integrity of research practice, i.e., it should be valid and harmless. The second element is the integrity of the researcher. The researcher should be fair and honest and the third element is the integrity of the organization or academics where the research is being conducted. The organization should be trustworthy and have a good reputation in conducting researches. All these elements contribute to integrity of research and are inter related with each other (Banks, 2010).

Academic publication is an imperative area in education. Academic success is deeply rooted in the number of publications these days as the Higher Education Commission demands faculty to publish articles for promotions and recognition. Due to increasing demand of research and publication teachers are in a continuous struggle to publish more and more articles in less time which in return is affecting the integrity of the research.

The most prevalent issue is of authorship. Researchers who have actually contributed in the study are not recognized as authors (Bavdekar, 2012). Another issue in educational research these days is supervisor-student authorship which needs attention. The differential power between the student and the supervisor create problems when articles have to be published. The student is fearful to write his name as the first author as the supervisor is more superior and is in a more powerful position. In some cases, the supervisors take advantage of students' dependency and publish their dissertations work as first authors (Rose & Fischer, 1998). As a result, the students receive less credit and recognition at the forum of research which negatively impacts their career (Oberlander & Spencer, 2006). When talking about research, plagiarism is also a common academic activity which is an unethical activity and a hindrance to professional integrity. The academic community should be cautious in identifying plagiarized work (Shahabuddin, 2009).

Keeping in view the framework of professional integrity (Barnard et al., 2008) and previous literature the above-mentioned factors were linked with professional integrity. The four themes namely, functional derives of integrity, authenticity, functions of Integrity and competencies of integrity given in the model were associated with each of the factors. The fifth theme developmental context of the integrity was not the focus of the study.

Figure 1. Theoretical framework of Professional Integrity
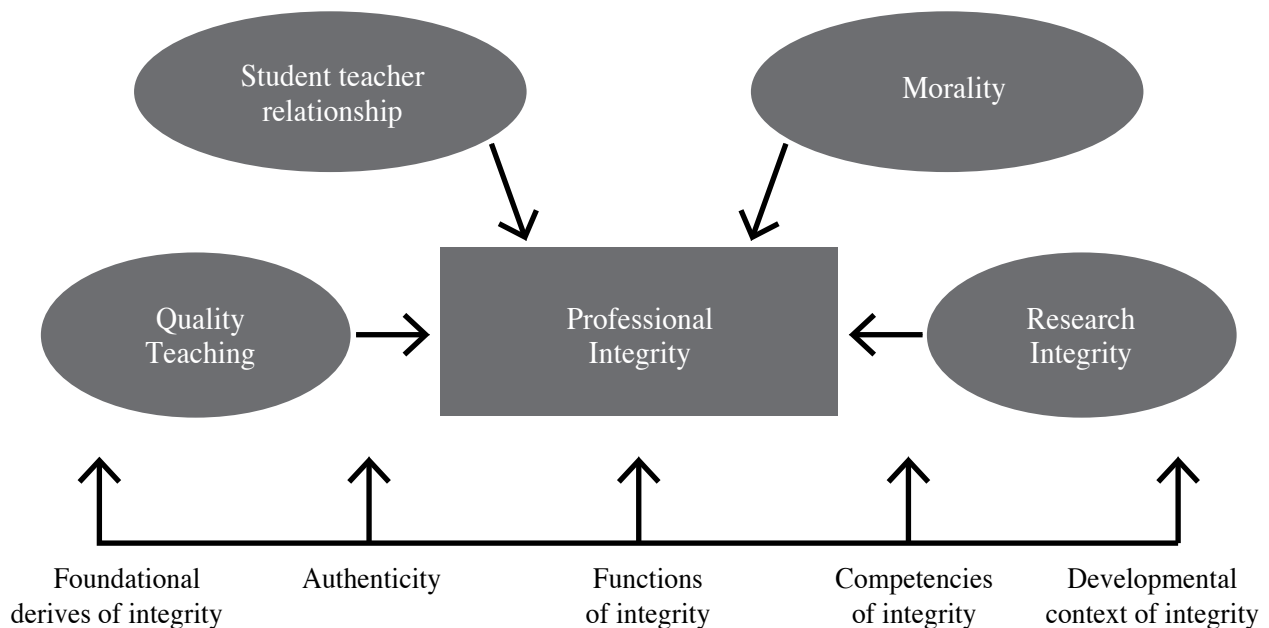
Rationale of the study

Pakistan is an Islamic country. Values, policies and strategies of teachers as well as the institutions should be in the light of Islam. Honesty, moral values, fairness and justice in order to save our cultural and religious values should be the focus universities (Mushtaq & Mustafa, 2021). Teachers play a foremost role in instilling ethical and moral values in students so it is important that they are honest, fair and follow ethical standards. If they themselves have high integrity only then they can transfer good values in students (Harrison & Walker, 2018) . Higher Education commission (HEC) is also focused for the betterment of education and facilities provided. Moreover, HEC has also developed strict polices for recruitment of teachers to improve the quality of education (Bibi & Khan, 2018). Keeping in view the importance of education and problems that are prevailed, this study was conducted to explore the phenomena of professional integrity in university teachers and to identify the factors that determine professional integrity positively and negatively.

There is lack of literature and research on professional integrity so the focus of this study was to explore the construct from teachers' perspective. These days the integrity of teachers have become questionable as it is hard to fine dedicated, honest and fair teachers. False claim of expertise, lack of quality in education, poor student-teacher bonding and false research are the growing problems in academia which are affecting professional integrity of teachers (Ahmad et al., 2014).

To address these controversies the present study was conducted to explore the perspective of university teachers about professional integrity. This study focuses on teachers that how they view professional integrity and what are its key factors.

Objectives of the Study

1. To explore the perception of professional Integrity in university teachers

2. To investigates the underlying factors of professional integrity.

Method

Sample

One hundred and four university teachers (51 men and 53 women) belonging different departments were drawn from four public sector universities of Lahore and Islamabad through purposive sampling technique. The age of university teachers ranged from 25 to 62 years. Teachers were of various designations namely lecturer (27.9 %), assistant professors (46.2%), associate professors (14.4%) and professors (11.5%). Teachers belonged to the departments of Psychology ($n = 14$), Biology ($n = 10$), Chemistry ($n = 12$), Physics ($n = 10$), Political science ($n = 11$), Mass communication ($n = 10$), English ($n = 12$), Computer Science ($n = 13$), and Economics ($n = 12$).

Research Tool

Demographic information. It included information about gender, age, designation, educational qualification, the discipline they belong, the subject they teach and number of publications.

Open Ended Questionnaire. It was constructed keeping in view the literature and model to uncover the construct and perception of professional integrity in university teachers. Open ended questionnaire was preferred over close ended because the aim was to gather vast information that reflects the key elements and underlying factors of professional integrity. The questions were related to characteristics of teachers of high and low professional integrity, factors that risks professional integrity, central elements of quality of teaching, the role of morality and the importance of integrity related to research. Some of the questions asked were what are the characteristics of teachers with high professional integrity? In your view what are the factors that put professional Integrity of teachers at risk? How would you view a teacher who put his or her name as first author on article based on students dissertation? How professional integrity is related to quality teaching?

Procedure

Due to the situation of pandemic and lock down of universities, the questionnaire was administered online. Consent from the head of departments of different disciplines of four public universities was taken via email. The questionnaire was forwarded to heads and their faculty university teachers via email. The written responses of the participants on the open ended questionnaire were analysed.

Ethical Considerations

The confidentiality and the welfare of the participants were protected. Informed consent was taken from the participants and they were also given the freedom to drop out from the study at any time.

Data Analysis and Results

Thematic analysis was used to analyse the qualitative data. It is a technique used for texts such as transcripts of interviews, focus groups or survey responses. It helps in understanding people's ideas, knowledge and experiences from a set of qualitative data. One of the drawbacks of thematic analysis is that it is subjective in nature.

It is dependent upon the researcher's judgment; therefore an unbiased analysis should be done. It can be used on large set of data and is helpful in discovering a new phenomenon. There are two approaches in thematic analysis. In inductive approach the data determines the themes. Coding is done without any pre-existing theory. Deductive approach is theory driven in which the researcher has some preconceived themes he expects to find based on pre-existing theory or knowledge (Braun & Clarke, 2006). This study followed the deductive approach.

At first step the data was familiarized by reviewing the content of responses repeatedly. Common ideas and repetitive content was viewed. At second step, coding of the content was done to summarize the data. Similar codes having the same underlying meaning were grouped together to form themes. To avoid any biased judgment the content was also provided to the experts. The coding and themes of data was reconfirmed to avoid any biased judgment.

Discussion

The themes derived from the analysis of data were Professionalism, Honesty, Positive attributes, Negative attributes, Attitude with colleagues, Attitude with students, Quality of teaching, Morality, and Research integrity.

The theme of Professionalism included ethical behaviour, ethical decision making, recognition of responsibility and commitments. University teachers were of the view that teachers who strictly follow rules and regulation of the institute have high integrity. One of the teacher reported, *"It is acting in accordance with the ethical and moral standards of the university"*. Another teacher said, *"it is being committed to duties and making ethical decisions"*. Literature also shows that ethical decision making is associated with integrity. Gaikwad (2011) asserts that a teacher who performs all the required tasks and takes decisions ethically have high integrity. Recognition of responsibility and commitment in integrity is also in line with the previous literature (Micheál Ó Gríofa & Tomás Ó Ruairc, 2012). Honesty was the second theme derived. Honesty included truthfulness, faithfulness, objectivity, and sincerity in all aspects of teaching. Hinman (2002) has listed honesty to an important aspect of integrity. Similarly, Peters (2019) also reported that individuals with integrity are fair and honest in their professional and personal relationships.

The theme of positive attributes had list of all positive characteristics which respondents perceived to be present in teachers with high integrity. This included sincerity, dedication, creativity, hard work, humbleness, proficiency, consistency, patience, tolerance, reliability, credibility, vigilance, assertiveness for an immoral act, selflessness , motivation, and passion. All these attributes are in line with the prior literature. Nillsen (2005) state that integrity is selfless as it is to submit oneself to the surrounding reality selflessly without any personal advantage in the outcome. Moreover, Brown and Treviño (2006) asserted that empathy, reliability, humbleness, and patience are the foundations of integrity. The theme of negative attributes had list of all negative characteristics which respondents perceived to be present in teachers with low integrity. This included greediness, ego, impassion, insincerity, dishonesty, arrogance, rudeness, lack of commitment, unethical behaviour, inconsistency, lack of hard work and responsibility and poor decision making. Micheál Ó Gríofa & Tomás Ó Ruairc, (2012) reported that lack of responsibility, poor commitment to duties, dishonesty, and unethical acts are few of the characteristics of people with low integrity. One of the teachers stated, *"a teacher with low integrity is corrupt, has lack of commitment and is not loyal with his profession, the institute and the students"*. Attitude with colleagues was the fifth theme. Teachers with high integrity are collaborative, good at team work and they respect differences with colleagues as reported by Brown and Treviño (2006) that teachers with high integrity can be trusted upon by others as they are good in collaborative work, they respect their co-workers and they disagree with respect without humiliation. Attitude with students was the sixth theme. Teachers reported that university teachers who act as mentors, are unbiased, are helpful and supportive, and are concerned for students' academics and well-being are teachers with high integrity. Evidence show that positive student-teacher relationship has resulted in students' good well-being, and also students are more satisfied with their institute and the educational system (Moscardini, 2015). Bartholomew et al. (2018) have reported that students are more eager to come to school if the teachers are cooperative and the most important unbiased. Quality of teaching was the next theme. Teachers with high integrity were considered to have high quality teaching as reported by Azer (2005).

It consisted of upgradation and implication of knowledge, deep understanding of content, conceptual clarity, expertise in subject, completion of course on time, organized and well prepared lectures, regularity, punctuality and student centred learning. Sahito et al. (2016) concluded that time management, competence in the subject and punctuality and regularity are the essentials of high-quality teaching. Similarly, Ayodele and Ige (2012) found that effective' time management directly improves academic performance of the students. One of the teachers reported, *"A teacher should have understanding of the content and should have practical implication of knowledge"*. The next theme was morality of teachers. Teachers reported that university teachers with integrity have high moral values. Their behaviour and acts are based on morals. Past literature indicates that morality is a prerequisite for having integrity (Vandekerckhove, 2010). The last theme derived was of research integrity. Teachers were of the view that plagiarism, fake publications and unfair authorships are the current issues in research. Past literature also indicates that academic fraud and unethical practices like plagiarism have increased in the past decade globally (Glick, 2001). Marušić et al. (2011) has reported that authorship is given to that researcher who has not contributed much in the study and is only entitled as an author on the basis of his leadership and authority.

The above themes describe the construct of professional integrity and also reflect the model of Professional Integrity. The foundational derives of integrity having moral compass and inner derive which can be seen in professionalism, attitude with colleagues and students, morality and quality teaching. Teachers goals, motives and morals will keep them professionally and ethically committed. They will maintain good relationship with colleagues and students and will also focus on quality teaching and research integrity. Authenticity which is honesty, being true and genuine is applicable on all the derived themes of the study. A teachers needs to be authentic in his profession, attitude, moral values, quality teaching and research. Without authenticity a teacher has low integrity (Peters, 2019). Moreover, function of integrity is reflected in the themes. Understanding of principles and norms (cognitive function) and the need to evaluate oneself against moral values (affective function) is important for teachers for their professionalism, attitudes, quality teaching and research.

Competencies of integrity which are behaviour manifestation is also reflected. Abiding by the rules, being committed, showing good and bad attributes, displaying good quality teaching, showing morality and by being authentic in research can be demonstrated through behaviour.

From this study professional integrity of university teachers can be defined as *"ethically and honestly abiding by the university rules with high moral values along with good quality teaching and fairness in research"*.

Implication of the study

This study would help teachers to evaluate themselves in terms of professional integrity. Factors that positively affect integrity can be highlighted in educational institutes and factors that risk integrity in teachers should be deeply looked into so that in future they are avoided.

Limitations and Suggestions

Only few factors of professional integrity of university teachers were explored. Data was only taken from public universities. In future researches public and private university teachers can be compared on professional integrity.

Declaration

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Conflict of interest. The authors are well informed and there is no conflict of interest between the authors.

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Availability of data and materials. The data analyzed during the study is available from the corresponding authors on request.

Ethical Approval and Consent to participate. Formal permission was taken from the institutional ethical board to conduct the research.

Competing Interest. The authors have no competing interest

References

Ahmad, I., Rehman, K., Ali, A., Khan, I., & Khan, F. A. (2014). Critical Analysis of the Problems of Education in Pakistan: Possible Solutions. *International Journal of Evaluation and Research in Education (IJERE), 3*(2), 79–84. http://iaesjournal.com/online/index.php/IJERE.

Amir, S., Sharif, N., Khan, A. (2020). Pakistan's Education System: An Analysis of Education Policies and Drawbacks. *Electronic Research Journal of Social Sciences and Humanities, 2*(1). www.eresearchjournal.com

Arasli, H., & Tumer, M. (2008). Nepotism, favouritism and cronyism: A study of their effects on job stress and job satisfaction in the banking industry of North Cyprus. Social Behaviour and Personality: *An International Journal, 36*(9), 1237–1250. https://doi.org/10.2224/sbp.2008.36.9.1237

Aydogan, I. (2008). Favouritism in the classroom: a study on Turkish schools. *Journal of Instructional Psychology,* 35, 159–168.

Ayodele, J. B., & Ige, M. (2012). Teachers utilization as correlate of students' academic performance in senior secondary schools in Ondo State, Nigeria. *European Journal of Education Studies, 4*(2), 281-287. doi:10.18767/EJES.50873

Azer, S. A. (2005). The qualities of a good teacher: how can they be acquired and sustained? *Journal of the Royal Society of Medicine, 98*(2), 67–69. https://doi.org/10.1258/jrsm.98.2.67.

Banks, S. (2010). Integrity in Professional Life: Issues of Conduct, Commitment and Capacity. *British Journal of Social Work, 40*(7), 2168–2184. https://doi.org/10.1093/bjsw/bcp152.

Barnard, A., Schurink, W., & De Beer, M. (2008). A conceptual framework of integrity. *SA Journal of Industrial Psychology, 34*(2). https://doi.org/10.4102/sajip.v34i2.427.

Bartholomew, K. J., Ntoumanis, N., Mouratidis, A., Katartzi, E., Thøgersen-Ntoumani, C., & Vlachopoulos, S. (2018). Beware of your teaching style: A school-year long investigation of controlling teaching and student motivational experiences. *Learning and Instruction, 53*, 50–63. https://doi.org/10.1016/j.learninstruc.2017.07.006.

Bavdekar, S. (2012). Authorship issues. *Lung India, 29*(1), 76. https://doi.org/10.4103/0970-2113.92371.

Bibi, N., & Khan, W. (2018). A Survey of Quality of Guidance Services at Allama Iqbal Open University Professor Qurtaba University Peshawar. *Pakistan Journal of Distance and Online Learning, 4*(1), 120-138. https://pjsel.jehanf.com/index.php/journal /article/view/136.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706 qp063oa.

Brown, M. E., & Treviño, L. K. (2006). Ethical leadership: A review and future directions. *The Leadership Quarterly, 17*(6), 595–616. https://doi.org/10.1016/j.leaqua.2006.10.004.

Buzzelli, C., & Johnston, B. (2001). Authority, power, and morality in classroom discourse. *Teaching and Teacher Education,* 17, 873–884. Doi:10.1016/S0742-051X(01)00037-3.

Chory-Assad, R. M., & Paulsel, M. L. (2004). Classroom justice: student aggression and resistance as reactions to perceived unfairness. *Communication Education, 53*(3), 253–273. https://doi.org/10.1080 /0363452042000265189.

Emmer, E. T., & Stough, L. M. (2001). Classroom Management: A Critical Part of Educational Psychology, With Implications for Teacher Education. *Educational Psychologist, 36*(2), 103–112. https://doi.org/10.1207/S15326985EP360 2_5.

Gaikwad, P. (2011). Teaching with Integrity: A Focus on Higher Education. *International Forum Journal, 14*(2). https://journals.aiias.edu/info/article/view/159.

Glick, S. M. (2001). Cheating at medical school. *Bio Medical Journal, 322*(7281), 250–251. https://doi.org/10.1136/bmj.322.7281.250.

Halfon, M. S. (1989). Integrity: *A Philosophical Inquiry.* Temple University Press.

Harrison, T., & Walker, D. I. (2018). The Theory and Practice of Virtue Education. Routledge. https://doi.org/10.4324/9781315265353.

Hinman, L. M. (2002). Academic integrity and the World Wide Web. ACM SIGCAS *Computers and Society, 32*(1), 33–42. https://doi.org/10.1145/511134.511139.

Marušić, A., Bošnjak, L., & Jerončić, A. (2011). A Systematic Review of Research on the Meaning, Ethics and Practices of Authorship across Scholarly Disciplines. *PLoS ONE, 6*(9), e23477. https://doi.org/10.1371/journal.pone.0023477.

Micheál Ó Gríofa, & Tomás Ó Ruairc. (2012). *Code of Professional Conduct for Teachers.* https://www.teachingcouncil.ie/en/_fileupload/pro fessional-standards/code_of_conduct_2012_web-1 9june2012.pdf.

Moscardini, L. (2015). Primary special school teachers' knowledge and beliefs about supporting learning in numeracy. *Journal of Research in Special Educational Needs, 15*(1), 37–47. https://doi.org/10.1111/1471-3802.12042.

Mushtaq, S., & Mustafa, M, T. (2021). National Professional Standards for Teachers in Pakistan in Light of Teaching of the Holy Prophet (P.B.U.H). *Journal of Policy Research 7*(2). http://rfh.org.pk/jur/magazine-category/jpr.

Nillsen, R. (2005). The Concept of Integrity in Teaching and Learning. *Journal of University Teaching and Learning Practice, 2*(3), 96–105. https://doi.org/10.53761/1.2.3.9.

Oberlander, S. E., & Spencer, R. J. (2006). Graduate Students and the Culture of Authorship. Ethics & *Behavior, 16*(3), 217–232. https://doi.org/10.1207/s15327019eb1603_3.

Ofojebe, W. N., & Ezugoh, C. (2010). Teachers' motivation and its influence on quality assurance in the Nigerian educational system. *African Research Review, 4*(2). https://doi.org/10.4314/afrrev.v4i2.58352.

Peters, M. A. (2019). Academic integrity: An interview with Tracey Bretag. *In Educational Philosophy and Theory, 51*(8), 751–756. https://doi.org/10.1080/00131857.2018.1506726.

Rose, M. R., & Fischer, K. (1998). Do Authorship Policies Impact Students' Judgments of Perceived Wrongdoing? *Ethics & Behaviour, 8*(1), 59–79. https://doi.org/10.1207/s15327019eb0801_5

Sahito, Z., Khawaja, M., Panhwar, U. M., Siddiqui, A., & Saeed, H. (2016). Teachers' Time Management and the Performance of Students: A Comparison of Government and Private Schools of Hyderabad, Sindh, Pakistan. *World Journal of Education, 6*(6). https://doi.org/10.5430/wje.v6n6p42

Rimm-Kaufman, S & Sandilos, L. (2018). Improving Students' Relationships With Teachers. *American Psychological Association.* Retrieved from https://www.apa.org/education-career/k12/relationships.

Shahabuddin, S. (2009). Plagiarism in Academia. *International Journal of Teaching and Learning in Higher Education, 21*(3), 353–359. http://www.isetl.org/ijtlhe/.

Toom, A. (2017). Social relations contributing to teachers' professional capabilities and integrity: for the best of student learning. *Teachers and Teaching, 23*(6), 631–634. https://doi.org/10.1080/13540602.2017.1327403.

Vandekerckhove, W. (2010). On the Notion of Organisational Integrity. *Philosophy of Management, 9*(1), 123–134. https://doi.org/10.5840/pom20109121.

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Personal Relative Deprivation, Altruistic behaviour and Reciprocity Towards Strangers: Mediating Role of Belief in Just World

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Abstract

Background. The present study was conducted to explore the role of personal relative deprivation as a predictor of altruistic behavior and reciprocity towards strangers. Moreover, the mediating role of belief in just world about others was also assessed.

Method. The sample (N = 510) comprised of students (male = 144; female = 366) with ages ranging from 18 to 42 years (M = 22.9; SD = 4.2) from different universities of Pakistan.

Results. Results revealed that personal relative deprivation and belief in just world about others positively predicted altruistic behavior and reciprocity towards strangers. Furthermore, it was also discovered that belief in just world about others mediates the relationship between predicting variable i.e. personal relative deprivation and outcome variables i.e. altruistic behavior and reciprocity.

Conclusion. Inculcating altruistic behavior can aid communities and governments in developing more effective campaigns centered on encouraging prosocial behavior towards strangers.

Keywords. *Personal relative deprivation, altruism, reciprocity, belief in just world.*

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Introduction

Charity in Pakistan is a celebrated social practice. A nation-wide survey revealed that 98% of Pakistanis participate in philanthropic activities (Pakistan Centre for Philanthropy, 2017). The extent of charitable giving can be further evidenced by the fact that Pakistan contributes more than 1% of its GDP to charity despite being a considerably less wealthy country (Amjad & Ali, 2018). Donating money is one of the most common form of helping behavior (Piferi et al., 2006). This helpful attitude or prosociality of Pakistani society needs to be harnessed so a social safety net can be guaranteed to the 4% Pakistanis living in extreme poverty (World Data Lab, 2021). Therefore, identifying the correlates and predictors of prosocial behavior in Pakistan can be beneficial. This endeavor can only begin after understanding what constitutes as prosocial behavior.

Nostrand et al. (2018) suggest that prosocial behavior can either be self-benefitting or without any expectation of personal gain. The current research focuses on these subsets of pro-social behavior i.e. altruism and reciprocity towards strangers. Altruism is motivated by the desire to be provide benefit to another person but not expecting any of the benefit for one's own self in return (Feigin et al., 2014). On the other hand, reciprocity follows that one should return a favor after having received one (Erreygers et al., 2018). This reciprocal attitude could be both positive and negative depending upon the experience the individual has encountered (Keysar et al., 2008). Now with this definition in mind, we can proceed to discussing the possible cultural, social, and psychological factors that might be influencing the adoption of prosocial behaviors in Pakistan.

There is a scarcity of literature in Pakistan in which correlates of pro-social or altruistic behaviors are examined. A single study conducted by Iqbal (2013) reported the effect of environmental conditions, marital status, and gender on an individual's pro-social behavior. It was found that fear towards helping others existed in Pakistan that might hinder prosocial behavior. Factors must be identified in this regard. To address the existing gap, we examine a more detailed framework that underlies prosocial behavior in Pakistan.

Two defining cultural forces of Pakistani society are collectivism (Hofstede-Insights, 2020) and Islam (Zaman, 2018). Collectivistic societies tend to espouse altruism (Cohen & Hill, 2007).

Moreover, Islam also mandates prosocial behaviors such as altruism, alms giving, and community welfare (Abideen & Abbas, 2021). All these factors point towards high rates of prosocial tendencies in Pakistani population. One possible way collectivism and religiousness might be associated with prosocial behavior is "Belief in Just World" (Hafer & Sutton, 2016; Wu et al., 2011).

Belief in just world is a belief that the life treats everyone in a fair and just manner (Dalbert, 2001). This belief thus motivates the people to exhibit altruistic behavior towards others around them (Begue, 2002; 2014; Strelan, 2007). Similar motivation is observed for reciprocating of behavior. The person who has a higher belief in just world will be high on reciprocity and treat others fairly (Edlund et al., 2007).

Despite these encouraging forces, poverty and its associated sense of deprivation might hinder positive attitudes towards prosocial behavior. Various indicators of growth and development paint a dismal picture for Pakistan. Pakistan has a low GDP per capita placing it at 174th position in the world (World Bank, 2020). Pakistan ranks 154th among 189 countries, on Human Development Index (HDI; United Nations Development Programme, 2019).

Furthermore, the HDI varies among various provinces of Pakistan as well as between rural and urban areas. Poverty (Townsend, 1979) and income inequality (Coccia, 2018) are predictors of personal relative deprivation—feeling deprived in comparison with the other people that form part of one's society (Schaefer, 2015; Walker & Smith, 2002).

Personal relative deprivation is usually negatively associated with prosocial behaviors (Callan et al., 2008; John et al., 2014; Zhang et al., 2016). How this relationship operates can be explained in the light of General Strain Theory (Agnew, 2006), according to which a strain may reduce an individual's social control which includes lack of direct control over undesirable behaviors, conformity, and the belief about wrong nature crime. And if the strain remains persistent for a long period of time the reduction in social control will also persist for long (Agnew, 2006). The reduction in social control results in reduction on the belief in just world (Peng et al., 2019; Stroebe et al., 2015; Wenzler et al., 2017). It is because the individual no longer carry the belief about world as being a just place (Benabou & Tirole, 2006; Wenzler et al., 2017).

Another reason why personal relative deprivation leads to disbelief in just world about others is that, since an individual feel deprived of their basic needs, they start believing in an unjust world (Begue, 2014; Leites & Ramos, 2018; Begue et al., 2008; Lerner, 1980). Owing to it being a risk factor for antisocial tendencies, impact of personal relative deprivation also needs to be studied within the context of Pakistan.

We conducted the present study in order to explore the role of personal relative deprivation in predicting altruistic behavior and reciprocity towards strangers. The mediating role of belief in just world about others in this relationship was also examined.

Overview and Predictions

In light of our literature review, we predicted varying relationships among our study variables. Personal relative deprivation would be negatively associated with altruistic behavior and reciprocity, as per findings from previous literature (Callan et al., 2008; John et al., 2014; Zhang et al., 2016). All three of these variables are also found to be associated with belief in just world about others (Begue, 2002; 2014; Begue et al., 2008; Callan et al., 2017; Strelan, 2007) which would act as a mediator among them. More specifically, we predicted that personal relative deprivation would negatively predict belief in just world which would lead to a decrease in prosocial behaviors. Our rationale for studying this mediation relationship was to explain the paradox of high philanthropy rates in Pakistan despite it being a struggling country.

Method

The ethical committee at National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan, gave approval for the protocols of this study. We decided to approach university students for participation in this study because study instruments were in English which is the most commonly used language of instruction in higher education sector of Pakistan (British Council, 2015).

Sample

Minimum sample size limit was determined to be 134 by G-power calculator 3.1 using two-tailed test, effect size 'r' 0.3, alpha error probability 0.05, and power 1 – beta error probability 0.95. However, we recruited more participants in order to increase the statistical power. A total of 540 participants participated in our survey through via the online platform Google Forms.

Thirty questionaires had to be discarded since they were incomplete. The final sample consisted of 510 participants within the age range of 18-42 years old (M=22.9; SD=4.2) with 28.2% men and 71.76% women. Moreover, 53.5% were graduate students, and 46.5% were post-graduate students. Most of the sample was unemployed, unmarried and belong to nuclear family system. The sample characteristics also indicate that with respect to parental education, majority has mother's education till matriculation level and father's education till masters/PhD level.

Prior to the administration of questionnaires, participants gave their informed consent after learning about our study's aims, associated risks and benefits as well as their rights. We collected our data from December, 2019, to March, 2020. Following materials were utilized for data collection:

Personal Relative Deprivation Scale (PRDS). Personal relative deprivation refers to the feelings of resentment and dissatisfaction stemming from the belief that one is deprived of a desired and deserved outcome compared with some referent (Callan et al., 2008). Personal relative deprivation was assessed by using Personal Relative Deprivation Scale (PRDS) developed by Callan et al., (2008). The original PRDS is a five-item measure (1 = strongly disagree to 6 =*strongly agree*; α = .78) which assesses one's general beliefs and feelings associated with comparing one's outcomes with the outcomes of people similar one's self. In the modified version, the internal consistency of measure was improved by modifying the wording of original four items and adding one item to the scale.

Belief in Just World Scale for Others (BJW-O). Belief in just world about others refers to the individual's belief that the world is fair to all others and justice is for all and people get what they deserve and deserve what they get (Dalbert, 1999). This construct was measured by Belief in Just World Scale for others (BJW-O) developed by Dalbert (1999) consisted of 8 items with response options ranging from 1 for *absolutely wrong* to 5 for *absolutely true* (α = .83).

Adapted Self-report Altruism Scale. Altruism was assessed by utilizing adapted version of the Self-report Altruism Scale (Rushton et al., 1981; Witt & Boleman, 2009).

The scale comprised of 14 items with response options ranging from 1 =never to 5 =*very often* (α= .80; Witt & Boleman, 2009). High scores on this scale show intention to show altruistic behavior.

Personal Norm of Reciprocity Questionnaire. Personal Norm of Reciprocity Questionnaire, developed by Perugini et al. (2003), was used to measure participants' tendency to reciprocate. It has three subscales possessing 9 items each; positive reciprocity (α = .83), Negative reciprocity (α = .76), reciprocity beliefs (α = .67). Items are rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree)*.

It should be noted that psychometric properties and cultural validity of all the above-mentioned instruments were assessed in a Pilot study (*N* = 150) and deemed appropriate for use in the main study.

Results

The data obtained was analyzed with the help of SPSS version 2.16. Table 1 given below demonstrates internal consistencies, Pearson product-moment correlation coefficients, and descriptive statistics for our study variables. Personal relative deprivation positively correlates with belief in just world about others and reciprocity along with its components. However, there is no significant relationship between personal relative deprivation and altruistic behavior. Belief in just world about others is significantly correlated with altruistic behavior and reciprocity. Altruistic behavior is positively correlated with positive reciprocity and belief in reciprocity components of reciprocity. Furthermore, significantly positive inter-correlations can be observed among reciprocity and its three components, thereby, lending support to the construct validity of Personal Norm of Reciprocity Questionnaire.

Table 1
Alpha Reliabilities, Inter-Correlations, and Descriptive Statistics (N=510)

Variables	1	2	3	4	5	6	7
1. Personal Relative Deprivation	-	.15**	.07	.24**	.11*	.18**	.25**
2. Belief in Just World about Others		-	.19**	.17**	.16**	.05	.18**
3. Altruistic Behavior			-	.18**	.32**	-.03	.13**
4. Reciprocity				-	.72**	.73**	.80**
5. Positive Reciprocity					-	.19**	.44**
6. Negative Reciprocity						-	.42**
7. Belief in Reciprocity							-
α	.68	.71	.79	.82	.77	.75	.66
Mean	16.54	26.29	43.81	105.68	43.71	27.84	34.11
Standard Deviation	4.27	4.67	9.12	22.03	10.04	10.42	8.92

*Note. *p<.05.**p<.01*

Table 2
Multiple Regression Analysis for the effect of Personal Relative Deprivation and Belief in Just World about others on the Prediction of Altruistic Behavior and Reciprocity toward Strangers (N=510)

Outcome Variables	Predictors	*B*	*S.E*	*β*		*p*
Altruistic Behavior	Constant	25.59	4.21			.00
	PRD	.37	.16	17		.02
	BJW-O	.51	.13	.29		.00
	R²				12	
	F				10.73	
Reciprocity	Constant	33.12	9.14			.00
	PRD	1.66	.36	.32		.00
	BJW-O	1.43	.29	.34		.00
	R²				25	
	F				25.36	

Note. PRD = Personal Relative Deprivation , BJW = Belief in Just World about Others. **p < .01. ***p < .001.

Table 2 above demonstrates the results of a multiple regression analysis which confirms the significant role of personal relative deprivation and belief in just world about others in prediction of altruistic behavior and reciprocity. Personal Relative Deprivation and Belief in Just World about Others are jointly responsible for 12% variance in altruistic behavior. These two predictors are also responsible for 25% variance in Reciprocity.

Table 3

Role of Belief in Just World as a Mediator between Personal Relative Deprivation and Altruistic Behavior towards Strangers (N=510)

Indirect Effects	B	SE	z-score	p	95% CI	R^2
Total .	16	.09		.09	[-.03,.34]	.01
Belief in Just World	.06	.03	2.57	.01	[.02,.13]	.04**

*p <.05, **p<.01

Table 3 demonstrates that the mediator; that is, belief in just world about others, has a significant effect on the altruistic behavior. The coefficient for direct effect (i.e., .10) is also less than the total effect (i.e., .16) which also signifies the presence of mediating role of belief in just world between the relationship of personal relative deprivation and altruistic behavior.

Table 4

Role of Belief in Just World as a Mediator between Personal Relative Deprivation and Reciprocity towards Strangers (N=510)

Indirect Effects	B	SE	z-score	p	95% CI	R^2
Total	1.23	.22		.00	[.79,1.66]	.06***
Belief in Just World	.11	.06	2.30	.02	[.02,.13]	.04*

*p <.05, **p <.01, ***p <.001

Table 4 reveals that the mediator; that is, belief in just world about others, has a significant effect on the reciprocity. Here also, the coefficient for direct effect (i.e., 1.12) is also less than the total effect (i.e., 1.23) which further signifies the presence of mediating role of belief in just world about others between the relationship of personal relative deprivation and reciprocity towards strangers.

The present research explored some demographic differences as well. Results of independent t-test analysis revealed that employed individuals ($n = 100$; $M = 45.58$; $SD = 9.16$) showed higher scores on altruistic behavior as compared to unemployed individuals ($n = 410$; $M = 43.38$; $SD = 9.07$); $t = 2.17$, $p = .03$. Opposite significant differences were observed for reciprocity between employed ($M = 101.27$; $SD = 25.12$) and unemployed individuals ($M = 106.76$, $SD = 21.10$); $t = -2.33$, $p = .02$.

Discussion

The results confirm the existence of significant relationships among our study variables. As proposed, belief in just world phenomenon positively predicts altruism and reciprocity—components of prosocial behavior. This finding is line with suggestions of previous literature (Begue, 2002; 2014; Strelan, 2007).

However, results and directions of some of the linkages are inconsistent with our proposed hypotheses. For instance, personal relative deprivation is positively predicting reciprocity and altruistic behavior. Literature, on the contrary, suggests a negative relationship between relative deprivation and prosociality (Callan et al., 2017; Zhang et al., 2016), since, personal relative deprivation motivates disapproval of others (Calkins & Keane, 2009). Furthermore, a previous study demonstrates a negative relation of personal relative deprivation with belief in just world (Callan et al., 2017), but, a positive association exists between these two variables in our study.

The key to understanding the direction of this relationship lies in findings of our mediation analysis. Personal relative deprivation increases belief in just world for others, which in turn leads to an increase in both reciprocity and altruism. The reason why this relationship goes against our prediction could be that previous literature on which we based our hypotheses, was composed of primarily Western studies. According to Wu et al. (2011), people belongings to collectivistic societies tend to have a strong belief in a just world, which allows them to be resilient in the face of harsh conditions. Therefore, belief in just world might be buffering the negative impact of personal relative deprivation in our sample, which in turn, might be increasing the tendency to do good for others despite one's own perceived short comings.

The results of our study also show that employed participants scored higher on altruistic behavior than unemployed while unemployed scored higher on reciprocity including positive and negative reciprocity as compared to the employed. Literature also demonstrate that employed individuals are economically more stable and possesses high income than the unemployed one which results to increase the behavior of altruism (Chowdhury & Jeon, 2012; Nakavachara, 2018; Piff et al., 2010).

Individuals who are unemployed in our society generally believe in reciprocating same deeds, because of unemployment they mostly search for some reward or incentive for doing something good that they can own. There are some limitations associated with our study as well, most pressing of which is the use of self-report instruments. It is likely that people might have projected a more positive image of themselves. Therefore, future studies should utilize more implicit measures or study these variables in an experimental setting. Another limitation has to do with the recruitment of students as our study sample. For better generalization of results, instruments need to be translated into Urdu and administered to a more diverse sample of Pakistani population.

Despite these limitations, the results of our study highlight factors which motivate prosocial behavior. The nature of relationships discovered in our study is slightly contradictory to what findings from Western literature suggest. Nonetheless, we believe our findings might have uncovered a potential protective role of just world belief in collectivistic cultures which is usually associate with more negative outcomes. However, the extent of this role needs to be explored further before any conclusive judgement can be made. Harnessing the power of such variables can aid communities and governments in developing more effective campaigns centered on encouraging prosocial behavior towards strangers. Intervention plan need to incorporated at school and university level for students to recognize the importance of altruistic behavior and its long lasting impact on the society.

Conclusion

The results of the present study demonstrated presence of significantly positive relationships among personal relative deprivation, belief in just world about others, altruistic behavior, and reciprocity. Mediation analysis revealed that personal relative deprivation positively predicts belief in just world for others, which in turn positively predicts both components of prosocial behavior i.e., reciprocity and altruism. Furthermore, we discovered that employed individuals are more likely to be altruistic than unemployed individuals, who on the other hand, show higher scores on reciprocity.

Declaration

References

Abideen, Z. U., & Abbas, F. (2021). Believers, Islamic Brotherhood and Mosque-Based Emotional and Informal Social Support System among Muslims in Pakistan. *Journal of Religion, Spirituality & Aging, 33*(1), 54-85.

Agnew, R. (2006). General strain theory: Current status and directions for further research. Taking stock: *The Status of Criminological Theory, 15,* 101-123.

Amjad, S. M., & Ali, M. (2018). Philanthropy in Pakistan. *Stanford Social Innovation Review.*

Begue, L. (2002). Beliefs in justice and faith in people: Just world, religiosity and interpersonal trust. *Personality and Individual Differences, 32*(3)*,* 375-382.

Begue, L. (2014). Do just-world believers practice private charity? *Journal of Applied Social Psychology, 44*(1), 71-76.

Begue, L., Charmoillaux, M., Cochet, J., Cury, C., & De Suremain, F. (2008). Altruistic behavior and the bidimensional just world belief. *The American Journal of Psychology,* 47-56.

Benabou, R., &Tirole, J. (2006). Belief in a just world and redistributive politics. *The Quarterly Journal of Economics, 121*(2), 699-746.

British Council. (2015). *English Language in Pakistan's Higher Education.* Retrieved from https://www. britishcouncil.pk/sites/default/files/english_languag e_in_pakistan_higher_education_-_2015.pdf.

Callan, M. J., Ellard, J. H., Shead, N. W., & Hodgins, D. C. (2008). Gambling as a search for justice: Examining the role of personal relative deprivation in gambling urges and gambling behavior. *Personality and Social Psychology Bulletin, 34,* 1514–1529. doi:10.1177/ 0146167208322956.

Callan, M. J., Kim, H., Gheorghiu, A. I., & Matthews, W. J. (2017). The interrelations between social class, personal relative deprivation, and prosociality. *Social Psychological and Personality Science, 8*(6), 660–669.

Cialdini, R. B. (2001). Harnessing the science of persuasion. *Harvard Business Review, 79*(9), 72-81.

Coccia, M. (2018). A theory of general causes of terrorism: high population growth, income inequality and relative deprivation. *Archives of Psychology, 2*(4).

Dalbert, C. (1999). The world is more just for me than generally: About the personal belief in a just world scale's validity. *Social Justice Research, 12*(2), 79-98.

Dalbert, C. (2001). The justice motive as a personal resource: *Dealing with challenges and critical life events.* Science & Business Media: Springer.

Hofstede-Insights. (2020). *What about Pakistan? Hofstede-Insights.* Retrieved from https://www. hofstedeinsights.com/country/pakistan/.

Edlund, J. E., Sagarin, B. J., & Johnson, B. S. (2007). Reciprocity and the belief in a just world. *Personality and Individual Differences, 43*(3), 589-596.

Erreygers, S., Vandebosch, H., Vranjes, I., Baillien, E., & De Witte, H. (2018). Positive or negative spirals of online behavior? Exploring reciprocal associations between being the actor and the recipient of prosocial and antisocial behavior online. *New Media & Society, 20*(9), 3437-3456.

Findley-Van Nostrand, D., & Ojanen, T. (2018). Forms of prosocial behaviors are differentially linked to social goals and peer status in adolescents. *The Journal of Genetic Psychology, 179*(6), 329-342.

Feigin, S., Owens, G., & Goodyear-Smith, F. (2014). Theories of human altruism: A systematic review. *Annals of Neuroscience and Psychology, 1*(1), 1-9.

John, L. K., Loewenfstein, G., & Rick, S. I. (2014). Cheating more for less: Upward social comparisons motivate the poorly compensated to cheat. *Organizational Behavior and Human Decision Processes, 123*(2), 101-109.

Leites, M., & Ramos, X. (2018). *The effect of relative concern on life satisfaction: Relative deprivation and loss aversion.* Urguay: University of Republic Press.

Lerner, M. J. (1980). The Belief in a just world: *A Fundamental Delusion.* New York, US: Springer.

Myers, D. G., & Twenge, J. M. (2017). *Social Psychology* (12th ed.). New York: Mcgraw Hill.

Pakistan Centre for Philanthropy. (2017). *The state of individual philanthropy Pakistan*. The Army Press.

Perugini, M., Gallucci, M., Presaghi, F., & Ercolani, A. P. (2003). The personal norm of reciprocity. *European Journal of Personality, 17*(4), 251-283.

Piferi, R. L., Jobe, R. L., & Jones, W. H. (2006). Giving to others during national tragedy: The effects of altruistic and egoistic motivations on long-term giving. *Journal of Social and Personal Relationships, 23*(1), 171-184.

Rushton, J. P., Chrisjohn, R. D., &Fekken, G. C. (1981). The altruistic personality and the self-report altruism scale. *Personality and Individual Differences, 2*(4), 293-302.

Strelan, P. (2007). The prosocial, adaptive qualities of just world beliefs: Implications for the relationship between justice and forgiveness. *Personality and Individual Differences, 43*, 881–890.

The World Bank. (2020). *GDP per capita (current US$).* Retrieved from https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=PK.

Townsend, P. (1979). *Poverty in the United Kingdom: a survey of household resources and standards of living.* Univ of California Press.

Wenzel, K., Schindler, S., & Reinhard, M. A. (2017). General belief in a just world is positively associated with dishonest behavior. *Frontiers in Psychology, 8,* 1770.

Witt, P. A., & Boleman, C. (2009). Adapted self-report altruism scale. *Youth Development.*

World Data Lab. (2021). *World Poverty.* Retrieved from https://worldpoverty.io/map.

Wu, M. S., Yan, X., Zhou, C., Chen, Y., Li, J., Zhu, Z., ... & Han, B. (2011). General belief in a just world and resilience: Evidence from a collectivistic culture. *European Journal of Personality, 25*(6), 431-442.

Zaman, M. Q. (2018). *Islam in Pakistan.* Princeton University Press.

Zhang, H., Liu, M., & Tian, Y. (2016). Individual-based relative deprivation (IRD) decreases prosocial behaviors. *Motivation and Emotion, 40*(5), 655-666.

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