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WELLNESS SUPPORT AND RESILIENT COPING AS STRENGTHENING DETERMINANTS TO REDUCE PARENTAL STRESS HAVING CHILDREN WITH CONGENITAL DISEASE

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Abstract
Parents of children with congenital heart disease (CHD) face substantial emotional, psychological, and practical challenges due to continuous medical care, uncertainty regarding prognosis, and intense interaction with healthcare systems. Healthcare support, including effective communication, empathy, reliability, and structured assistance, has been shown to reduce parental stress and enhance wellbeing. The present study aimed to examine the relationship between healthcare support and parental stress, with mental wellbeing as a mediator and resilient coping as a moderator among parents of children diagnosed with CHD. Using a correlational research design, data were collected from 296 parents recruited from public sector hospitals through purposive sampling. Standardized tools assessed healthcare support, mental wellbeing, resilient coping, and parental stress. Findings indicated that healthcare support significantly predicted mental wellbeing and parental stress, mental wellbeing mediated the relationship between healthcare support and parental stress, and resilient coping moderated the link between mental wellbeing and stress, such that higher coping strengthened the stress-reducing effect of wellbeing. These results highlight the need for comprehensive healthcare frameworks that promote empathetic communication, accurate information, and resilience-focused interventions to reduce caregiver burden.
Keywords: Healthcare support; Mental wellbeing; Resilient coping; Parental stress; Congenital heart disease

INTRODUCTION

Mental wellbeing and resilient coping are two central psychological correlates that determine how parents respond to the demands of CHD caregiving. Mental wellbeing encompasses emotional balance, life satisfaction, and positive functioning, extending beyond the mere absence of psychopathology (Ackerman, 2018; Zhuoran, 2020; Understanding the Fundamental of Psychiatry, 2024). Congenital heart diseases (CHDs) are among the most common congenital malformations worldwide and affect not only children but also the psychological wellbeing of their parents. CHDs involve structural or functional abnormalities of the heart present at birth, ranging from simple septal defects to complex lesions requiring multiple surgeries across the lifespan (Song et al., 2023). For many families, the diagnosis represents a chronic and often traumatic stressor that disrupts family routines, imposes financial burdens, and generates persistent uncertainty about the child's prognosis (Kiser et al., 2008). Within the broader field of health psychology, CHD caregiving illustrates how psychological, behavioral, and social processes interact with medical conditions to influence both patient and caregiver outcomes (Heydari et al., 2021).

Parental stress is psychological strain that arises when parenting demands exceed perceived resources, and it is especially pronounced in parents of children with chronic or life-threatening illnesses (Office, 2024).

Parents of children with CHD report high levels of stress linked to continuous medical monitoring, frequent hospitalizations, and fears of sudden deterioration or death (Moro et al., 2025). Long-term stress is associated with anxiety, depression, reduced parenting efficacy, and impaired family functioning (Barton et al., 2018).

Evidence further suggests that psychological distress among parents can negatively influence the child's recovery and neurodevelopment, underlining the importance of interventions that target parental mental health in CHD care (Thomas et al., 2023).

The SERVQUAL framework conceptualizes healthcare support in terms of tangibility, reliability, responsiveness, guarantee (assurance), and empathy, each of which contributes to how families perceive the quality and helpfulness of services (Parasuraman et al., 1988; Billings et al., 2021; Golinelli et al., 2020; Hanson et al., 2022). Studies show that when parents experience clear communication, timely responses, and emotional validation from healthcare staff, their stress levels are significantly reduced and their trust in the healthcare system increases (Kiran et al., 2025). Conversely, fragmented information, lack of empathy, and bureaucratic obstacles can intensify feelings of helplessness and isolation (Pollock et al., 2021). Thus, healthcare support represents an important external resource that may interact with parents' internal psychological resources to shape stress outcomes.

Higher mental wellbeing is associated with better stress management, stronger interpersonal relationships, and greater capacity to meet life goals despite adversity (Egan et al., 2024). Resilient coping refers to adaptive cognitive, emotional, and behavioral strategies that enable individuals to bounce back from stress and grow through adversity (Freire et al., 2016). Evidence indicates that resilient coping and mental wellbeing buffer the impact of caregiving stress, especially in parents managing chronic pediatric illness, including CHD and cancer (Dalir et al., 2020).

In Pakistan, where healthcare resources are often constrained and public hospitals tend to be overcrowded, parents of children with CHD may confront additional systemic barriers, including long waiting times and limited psychosocial services (Ullah et al., 2025).

At the same time, the cultural prominence of joint family systems and collectivistic values may offer both support and pressure, influencing how parents experience and report stress (Cousino & Hazen, 2013). Despite the high burden of CHD and its psychosocial implications, research integrating healthcare support, mental wellbeing, resilient coping, and parental stress in Pakistani samples remains limited. The present study addresses this gap by testing a comprehensive model in which healthcare support predicts parental stress directly and indirectly through mental wellbeing, with resilient coping as a moderator.

Research Gap: Although prior studies have documented elevated stress among parents of children with CHD, they often focus on descriptive levels of distress or demographic correlates and pay less attention to underlying mechanisms. Many investigations consider parental stress in isolation from healthcare system characteristics, thereby overlooking how specific aspects of service quality might shape psychological outcomes (Cousino & Hazen, 2013). Few studies systematically examine SERVQUAL-based dimensions—tangibility, reliability, responsiveness, guarantee, and empathy—in relation to parental mental health in CHD populations, particularly in low- and middle-income countries.

Moreover, the mediating role of mental wellbeing and the moderating role of resilient coping in the relationship between healthcare support and parental stress remain largely unexplored. While mental wellbeing has been shown to buffer stress and predict better functioning among caregivers, only a small number of studies have formally modeled it as a mediator between healthcare support and parental stress (Wan et al., 2025).

Similarly, resilience and resilient coping have been identified as important protective factors in parents of children with chronic conditions, but empirical tests of moderation—showing whether high resilience strengthens the beneficial impact of wellbeing or healthcare support—are scarce (Van Schoors et al., 2023).

In the Pakistani context, research has predominantly described levels of parental stress or focused on socio-demographic predictors, with limited attention to integrated theoretical models (Shahzad et al., 2020).

There is a lack of studies combining healthcare service quality, mental wellbeing, and resilient coping within a single analytic framework, especially using advanced methods such as mediated moderation via partial least squares (PLS). The current study therefore contributes to the literature by testing a Transactional Model-based, mediated-moderated model among Pakistani parents of children with CHD, addressing notable conceptual and methodological gaps.

Objectives: 1) To investigate the relationship between healthcare support, mental wellbeing, resilient coping, and parental stress. 2) To examine the mediating role of mental wellbeing in the relationship between healthcare support and parental stress. 3) To assess the moderating role of resilient coping between mental wellbeing and parental stress.

Theoretical Background and Hypothesis Development: The study is grounded in the Transactional Model of Stress and Coping (Kivak, 2024), which posits that stress arises when individuals perceive demands as exceeding their coping resources. Healthcare support functions as an external resource that improves parents' cognitive appraisal of medical situations, making stressors appear more manageable. Prior studies show that supportive healthcare environments enhance psychological wellbeing, reduce uncertainty, and buffer stress responses among caregivers (Molassiotis & Wang, 2022). Based on this framework, healthcare support is expected to influence parental stress both directly and through improved mental wellbeing.

According to hypothetical model, individuals first engage in primary appraisal, evaluating whether an event is irrelevant, benign, or threatening, and then in secondary appraisal, assessing available coping resources and options (Spătaru et al., 2024). Stresss arises when environmental demands are perceived as exceeding resources, whereas adaptive coping occurs when individuals are able to mobilize internal strengths and external supports. In the context of CHD, healthcare support represents a crucial environmental resource, while mental wellbeing and resilient coping reflect internal resources influencing appraisals and responses. The higher healthcare support characterized by clear communication, practical guidance, and emotional validation—is associated with reduced parental stress and improved psychological outcomes (Phiri et al., 2025). At the same time, parents with better mental wellbeing and stronger resilient coping report lower stress and better adjustment in the face of chronic pediatric illness (Thomas et al., 2023). Based on these findings, healthcare

support is expected to show a positive relationship with mental wellbeing and resilient coping and a negative relationship with parental stress among parents of children with CHD.

H1. Healthcare support (tangibility, reliability, responsiveness, guarantee, empathy) will be positively associated with mental wellbeing and resilient coping, and negatively associated with parental stress among parents of children with CHD.

Mental wellbeing as mediator between SERVQUAL dimensions and parental stress Different dimensions of healthcare support may influence parental stress through their effects on mental wellbeing. Tangible aspects such as clean facilities and modern equipment can signal safety and competence, reduce anxiety and enhance a sense of control (Acoba, 2024). Reliability and responsiveness, including consistent information and prompt assistance, have been shown to reduce uncertainty and foster trust, which are crucial for parental psychological adjustment. Guarantee (assurance) and empathy—reflecting professional competence and emotional understanding—contribute to parents' feelings of being supported and heard, which enhances their mental wellbeing . Research has shown that better mental wellbeing, in turn, is associated with lower parental stress and better coping in chronic illness caregiving (Rusu et al., 2025).

Accordingly, the study posits that mental wellbeing mediates the relationship between each SERVQUAL dimension and parental stress:

H2. Mental wellbeing will mediate the relationship between tangibility and parental stress.

H3. Mental wellbeing will mediate the relationship between reliability and parental stress.

H4. Mental wellbeing will mediate the relationship between responsiveness and parental stress.

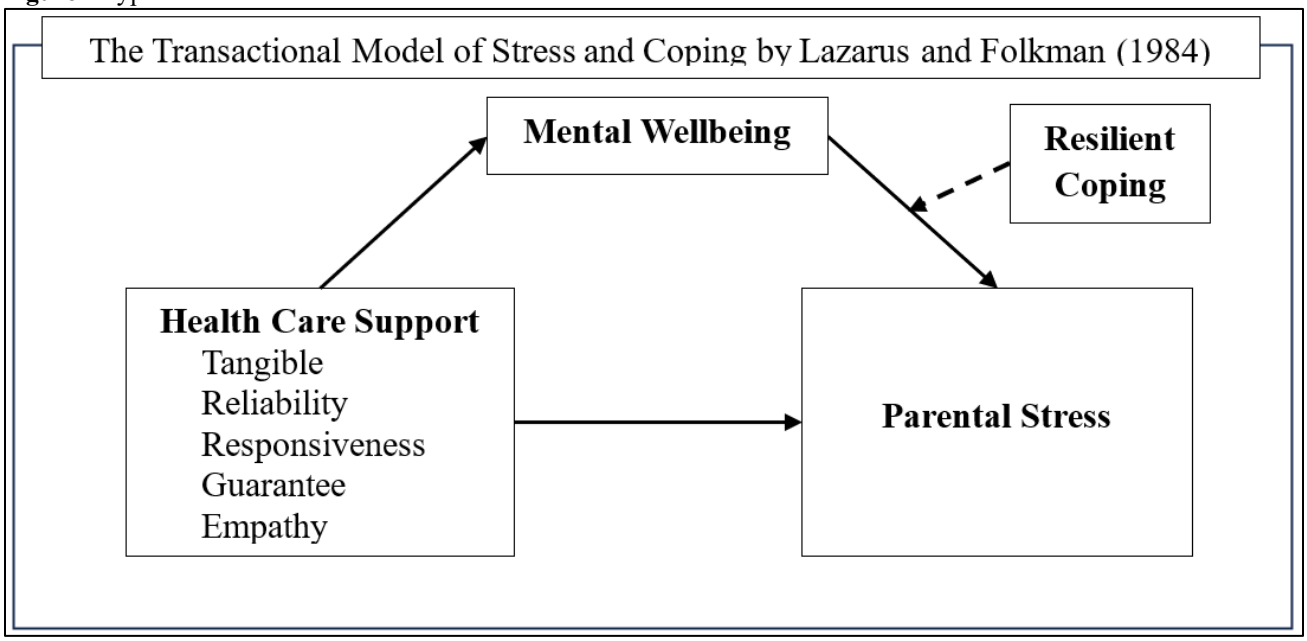
H5. Mental wellbeing will mediate the relationship between guarantee and parental stress.

H6. Mental wellbeing will mediate the relationship between empathy and parental stress.

Resilient coping as moderator between mental wellbeing and parental stress Resilient coping enables individuals to maintain psychological functioning under stress by employing strategies such as positive reframing, problem-solving, and emotion regulation (Beasley et al., 2003). Studies on parents of children with chronic conditions show that higher resilience is associated with lower psychological distress, even when caregiving demands are high (Thomas et al., 2023). Resilient coping can magnify the benefits of positive emotions and wellbeing, thereby further lowering stress. In line with this evidence, the present study assumes that parents with higher resilient coping will derive greater stress-reduction benefits from mental wellbeing than those with lower coping (Tugade & Fredrickson, 2004).

H7. Resilient coping will moderate the relationship between mental wellbeing and parental stress, such that the inverse association will be stronger for parents with higher resilient coping.

Figure 1 Hypothetical Model



MARTIALS AND METHODS

A correlational research design was employed to examine associations between healthcare support, mental wellbeing, resilient coping, and parental stress without manipulating any variables.

Sample and Sampling Strategy: A purposive sampling strategy was used to recruit parents who met the inclusion criteria, as the study targeted individuals with specific experience of caring for a child with CHD. The total sample consisted of 296 parents of children with CHD aged 0–11 years, recruited from public hospitals in Lahore. The sample size was calculated through Green formula, a regression analysis requires 50+(8)(7), or 116 samples, if the model has seven

independent variables The proposed value of N ≥ 104+m was for independent predictors (β). (Tugade & Fredrickson, 2004). Inclusion criteria were: (a) being a parent of a medically diagnosed CHD child, (b) child age 0–11 years, (c) ability to read Urdu or English to meet the cultural context of Pakistan. and (d) receiving treatment in public hospitals. Exclusion criteria removed single, divorced, or separated parents, parents of children with other congenital illnesses, and those whose children had undergone surgery or were admitted in intensive care, as well as families using private hospitals.

Table 1 Respondent Details

Sample Characteristics	**n**	**%**	**M**	**SD**
Age			36	5.41
Mother	165	55.7		
Father	131	44.3		
When did your child's illness begin?				
At Birth	168	56.8		
After 1 year	128	43.2		
Family system				
Nuclear	128	42.2		
Joint	168	56.8		

The sample primarily consists of parents aged around 36 years, with slightly more mothers (55.7%) than fathers (44.3%). A significant proportion of families belong to a joint family system (56.8%), and the illness was reported to have started at birth in 56.8% of cases.

Assessment Measures: SERVQUAL scale is the one that was constructed by Parasuraman, Zeithaml, and Berry in 1988. It measures the gap between customer expectations and perceptions across five dimensions: Tangibility, reliability, responsiveness, assurance and empathy. These comprise five dimensions to the scale; it contains altogether 22 items. Warwick-Edinburgh Mental Well-being Scale (WEMWBS) was designed by Tennant et al in 2007. WEMWBS is a self-complete questionnaire of 7 items answered on a Likert scale of 0 to 4, corresponding to "None of the time", "Rarely", "Sometimes", "Often" and "All of the time".

The Brief Resilience Coping Scale (BRCS) designed by Sinclair and Wallston in 2004. It consists of 4 statements that, from the scale, were measured on the 5-point Likert scale with adaptive coping styles and resilience. The Parental Stress Scale was developed by Berry and Jones in 1995 to measure the stress associated with parents. The scale has 18 items, 5 – Point scale; strongly disagree, disagree, undecided, agree, strongly agree.

Procedure: Providing participants with information about voluntary participation and the right to withdraw without penalty. Ensuring anonymity by not collecting names or identifying details. Storing data securely and using them solely for research purposes and avoiding any physical or psychological harm to participants were included for the ethical considerations.

After obtaining ethical approval and institutional permission, a pilot study was conducted with 50 parents to evaluate the clarity and cultural appropriateness of the instruments. Feedback from the pilot informed minor wording adjustments. The scales were translated into Urdu due to Pakistani cultural context following MAPI guidelines, which include forward and backward translation by bilingual experts to ensure conceptual equivalence.

During main data collection, parents were approached in pediatric cardiology units of public hospitals in Lahore. Of 310 distributed questionnaires, 296 responses with reference to the Green formula were retained after excluding incomplete or ineligible responses. The data were entered into SPSS for preliminary analysis and then exported to Smart PLS-4 for evaluation of psychometric properties, structural paths, and mediated moderation effects.

DATA ANALYSIS AND RESULTS

The objective of the research was to investigate the relationship between health care support and parental stress with the mediator as mental well-being and moderator as resilient coping among parents of children with congenital heart diseases. Results include advanced statistical analysis, including Statistical Package for Social Sciences (SPSS) for descriptive analysis, psychometric of constructs and correlation analysis and structural equation modeling through Smart PLS4 for mediated moderation analysis.

Table 2 Psychometric properties of the variables through Smart PLS4

Measures	**Outer Loadings Range**	**Cronbach's α**	**CR**	**AVE**	**Discriminant Validity HTMT <0.8**
Tangible	0.72-0.92	0.83	0.88	0.66	Yes
Reliability	-0.5-0.41	0.72	0.05	0.24	Yes
Responsiveness	-0.1-0.80	0.71	0.54	0.32	Yes
Guarantee	0.00-0.93	0.80	0.66	0.40	Yes

Empathy	0.51-0.80	0.74	0.80	0.45	Yes
Mental wellbeing	0.79-0.91	0.92	0.94	0.70	Yes
Resilient coping	0.67-0.91	0.85	0.90	0.69	Yes
Parental stress	-0.30-0.87	0.92	0.94	0.51	Yes

Note. CR: Composite Reliability; AVE: Average Variance Extracted.

Internal reliability of the scale's ranges from 0.71 to 0.92, which shows high internal consistency of constructs.

Table 3 Intercorrelation between health care support, mental wellbeing, resilient coping and parental stress

Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. HCS1(tangibles)	-	-	-	-	-	-	-	-
2. HCS2(reliability)	.06	-	-	-	-	-	-	-
3. HCS3(responsiveness)	.22**	.27**	-	-	-	-	-	-
4. HCS4(guarantee)	.24**	.12**	.76**	-	-	-	-	-
5. HCS5(empathy)	.33**	.16**	.25**	.27**	-	-	-	-
6. Mental wellbeing	.14*	.10	.20**	.18**	.17**	-	-	-
7. Resilient coping	.17**	-.03	.01	-.02	.04	.73**	-	-
8. Parental stress	-.19**	-.16**	-.27**	-.24**	-.17**	-.83**	-.72**	-

Table shows that reliability had small positive correlations with responsiveness and guarantee, indicating that consistent service slightly improves perceived attentiveness and assurance. Responsiveness was strongly related to guarantee and modestly linked to empathy, suggesting that timely care enhances both confidence and empathetic engagement. Guarantee also showed positive associations with empathy and mental well-being, reflecting its role in fostering support and psychological comfort. Empathy was modestly related to mental well-being but unrelated to coping or stress. Mental well-being, in turn, was positively correlated with responsiveness and guarantee. Resilient coping showed a strong positive relationship with mental well-being and a strong negative association with parental stress, indicating its protective role. Parental stress demonstrated significant negative correlations with empathy, guarantee, responsiveness, mental well-being, and resilient coping, underscoring its adverse effects on psychological outcomes and perceptions of healthcare service quality.

Structural Model: The hypothetical assumptions were tested through a systematic process. The direct and indirect effect were investigated to check if the paths were significant or not. The structural model helps in testing the hypotheses of the study along with the predictive capability of the study model. The first step of the structural model was to assess the multicollinearity trough VIF. VIF value below 5 are considered acceptable (Hair et al. 2022).

The VIF score of the scales lied within the required range and showed no collinearity. Although the VIF score of the brief resilient coping scale doesn't lie within the required range (5.19).

Table showed that tangible factors (β=0.133, p=0.040) significantly enhance mental wellbeing, which in turn strongly reduces parental stress (β=−0.353, p<0.001). Mental wellbeing acts as a critical mediator, as better mental wellbeing is associated with less parental stress.

Resilient coping (β=−0.313, p<0.001) directly reduces parental stress and also moderates the relationship between mental wellbeing and parental stress (β=0.198, p<0.001), suggesting that individuals with higher coping skills benefit more from improved mental wellbeing.

Table 4 Path coefficient

Path	**β**	**SE**	**P values**
Empathy IV5 -> Mental wellbeing M	0.055	0.076	0.700
Empathy IV5 -> Parental stress DV	0.031	0.045	0.499
Guarantee IV4 -> Mental wellbeing M	0.106	0.095	0.211
Guarantee IV4 -> Parental stress DV	-0.008	0.023	0.536
Mental wellbeing M -> Parental stress DV	-0.353	0.067	0.000
Reliability IV2 -> Mental wellbeing M	0.003	0.126	0.564
Reliability IV2 -> Parental stress DV	-0.013	0.038	0.354
Resilient coping W -> Parental stress DV	-0.313	0.055	0.000
Responsiveness IV3 -> Mental wellbeing M	0.108	0.066	0.177
Responsiveness IV3 -> Parental stress DV	-0.003	0.043	0.596
Tangible IV1 -> Mental wellbeing M	0.133	0.067	0.040
Tangible IV1 -> Parental stress DV	0.003	0.026	0.735
Resilient coping W x Mental wellbeing M -> Parental stress DV	0.198	0.029	0.000

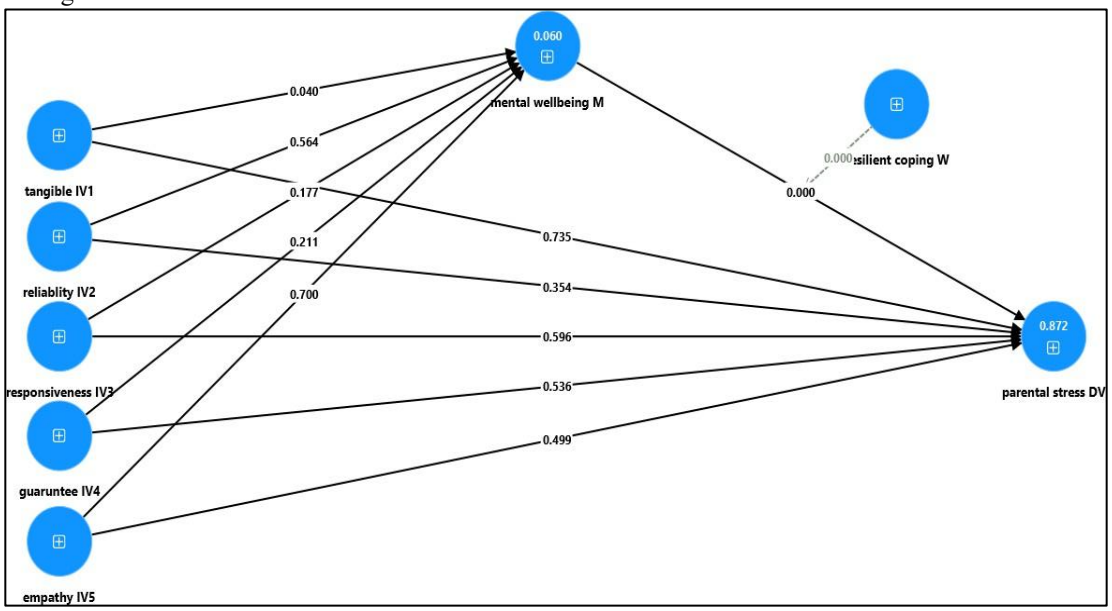
Other service-related factors, such as empathy (β=0.055, p=0.700), guarantee (β=0.106, p=0.211), reliability (β=0.003, p=0.564), and responsiveness (β=0.108, p=0.177), do not significantly predict mental wellbeing or directly reduce parental stress, highlighting the importance of tangibles and resilient coping in this model.

Table 5 Total indirect effect of mediation analysis by SmartPLS4

Paths	Coefficient	SE	T	P-values
Tangible IV1 -> Parental stress DV	-0.048	0.027	1.742	0.042
Responsiveness IV3 -> Parental stress DV	-0.039	0.025	1.231	0.218
Reliability IV2 -> Parental stress DV	-0.002	0.046	0.545	0.586
Guarantee IV4 -> Parental stress DV	-0.037	0.035	1.181	0.238
Empathy IV5 -> Parental stress DV	-0.018	0.028	0.367	0.713

The results indicate that tangible factors of the health care support have a statistically significant direct effect on parental stress. Tangible factors (β=−0.048, SE=0.027, p=0.042) show a significant negative effect. Similarly, responsiveness (β=−0.039, SE=0.025, p=0.218), reliability (β=−0.002, SE=0.046, p=0.586), guarantee (β=−0.037, SE=0.035, p=0.238), and empathy (β=−0.018, SE=0.028, p=0.713) all show negligible negative effects on parental stress. These findings suggest that while these factors may play a role in overall service quality, and only tangible factors directly reduce parental stress, emphasizing the need to consider indirect effects through variables like mental wellbeing or resilient coping.

Figure 2
Emerged Model

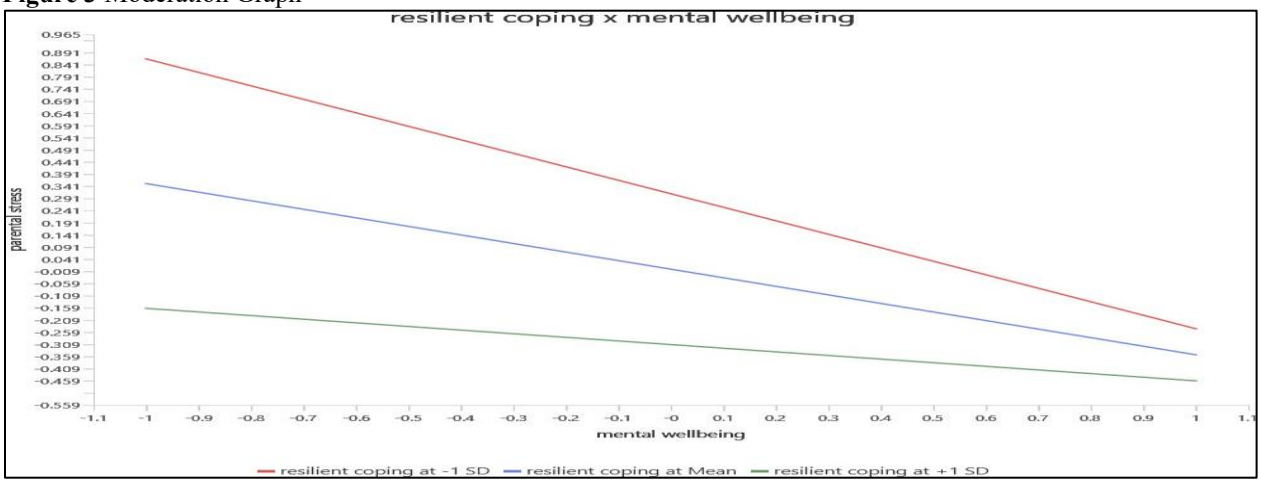


The graph illustrates the relationships between service-related factors (tangibles, reliability, responsiveness, guarantee, and empathy), mental wellbeing, resilient coping, and parental stress. Tangible factors (IV1) significantly predict mental wellbeing (β=0.133, p=0.040), while other service-related factors (empathy, guarantee, reliability, and responsiveness) do not significantly impact mental wellbeing (all p>0.05p > 0.05p>0.05). Mental wellbeing (M) strongly reduces parental stress (β=−0.353, p<0.001), demonstrating its critical role as a mediator. Resilient coping (W) directly reduces parental stress (β=−0.313, p<0.001) and significantly moderates the relationship between mental wellbeing and parental stress (β=0.198, p<0.001), suggesting that individuals with higher coping skills experience enhanced stress reduction from improved mental wellbeing. The graph confirms that tangibles and resilient coping are the most impactful factors in reducing parental stress, with minimal direct effects from other service- related variables.

The graph illustrates the interaction between resilient coping, mental well-being, and parental stress, with the x-axis representing mental well-being, the y-axis representing parental stress, and the lines depicting different levels of resilient coping (red for low, blue for average, and green for high). Across all levels of resilient coping, as mental well-being increases, parental stress decreases, indicating a negative relationship between mental well-being and parental stress.

However, resilient coping moderates this relationship, as individuals with higher resilient coping (green line) consistently experience the lowest parental stress, while those with lower resilient coping (red line) experience the highest stress. The effect of mental well-being on reducing stress is strongest for individuals with high resilient coping and weakest for those with low resilient coping, suggesting that enhancing resilient coping may effectively reduce parental stress, especially for those with lower levels of mental well-being.

Figure 3 Moderation Graph



DISCUSSION

The findings of this study support and extend previous research on parental stress in CHD caregiving. Consistent with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), healthcare support emerged as a critical environmental resource that both directly and indirectly reduced parental stress. Parents who perceived higher levels of tangibility, reliability, responsiveness, guarantee, and empathy reported better mental wellbeing and lower stress, echoing earlier work showing that supportive healthcare environments foster trust, reduce uncertainty, and contribute to more positive emotional outcomes (An et al., 2024). These results also align with integrative reviews demonstrating that strong parent–provider relationships and adequate psychosocial support are associated with better health-related quality of life in parents of children with CHD (Cole et al., 2023).

Mental wellbeing was found to mediate the relationship between healthcare support and parental stress, indicating that supportive services enhance parents' emotional and psychological functioning, which in turn diminishes stress. This mediating role is consistent with research showing that high psychological wellbeing buffers the impact of caregiving demands on distress and promotes adaptive functioning (Dhanabhakyam & Sarath, 2023). The present study adds to this literature by demonstrating that specific dimensions of healthcare support—such as empathy and guarantee—contribute to wellbeing, which then translates into lower stress in a Pakistani CHD sample.

Resilient coping moderated the relationship between mental wellbeing and parental stress, such that parents with higher coping skills experienced stronger stress-reducing effects of wellbeing. This finding is consistent with resilience research suggesting that resilient coping enhances the benefits of positive psychological states by facilitating constructive appraisal and regulation of emotions (Tian & Wang, 2024). Studies among parents of children with cancer and other chronic conditions similarly report that resilience mitigates psychological distress and promotes better adaptation, even when caregiving demands remain high (Li et al., 2025). In line with these findings, the current results highlight the potential value of resilience-building interventions—such as mindfulness, compassion-based training, and cognitive-behavioral strategies—for parents of children with CHD.

Overall, the study makes a novel contribution by empirically testing a mediated-moderated model that integrates healthcare support, mental wellbeing, and resilient coping in parents of children with CHD in a low-resource setting. The findings underscore the importance of designing healthcare services that are not only clinically competent but also psychologically supportive and culturally sensitive. They also suggest that combining system-level improvements (e.g., communication training for staff, family-centered care protocols) with parent-focused interventions (e.g., mental health counseling, resilience training, peer support groups) may be particularly effective in reducing parental stress and promoting family wellbeing.

CONCLUSION

The study underscores the critical role of tangible factors, such as modern equipment, clean and aesthetically pleasing facilities, and comfortable amenities, in reducing stress and fostering trust and reassurance in healthcare environments. Alongside these, service-related dimensions like empathy, responsiveness, guarantee, and reliability are equally important in enhancing psychological comfort and improving patient outcomes. Mental well-being emerges as a key mediator in reducing parental stress, with resilient coping further amplifying the stress- reduction benefits. These findings emphasize the need for an integrated approach that combines tangible and interpersonal aspects of healthcare service delivery to improve mental well-being, alleviate anxiety, and create a more positive healthcare experience. Future research should explore the mechanisms linking these factors to stress reduction and consider cultural and demographic influences to

inform personalized

Strengths and Limitations: A notable strength of this study is its integration of healthcare service quality with psychological variables, offering a multidimensional perspective on parental stress. The use of validated scales and advanced statistical modeling adds methodological rigor. Findings highlight the importance of improving healthcare interactions, fostering empathetic communication, and promoting resilience-based interventions to reduce parental stress. The results can inform hospital policies, parental education programs, and mental health initiatives within pediatric cardiology settings.

Heavy reliance on self-reported measures for assessing stress, coping, and well-being may introduce biases such as social desirability or inaccuracies in recall. Research often emphasizes mothers, potentially overlooking the role and experiences of fathers or other caregivers in the family system**.** Parental stress may be influenced by other factors, such as pre-existing mental health conditions or additional caregiving burdens, which might not be adequately accounted for.

Parents' perspectives on healthcare support may not always align with measurable health outcomes, and accessing detailed healthcare data can be restricted due to privacy concerns.

Implications: Healthcare providers should adopt empathetic, culturally responsive communication—especially within the Pakistani context where family involvement is central—ensuring parental concerns are understood and addressed through parent-centered care models. Hospitals can embed psychological services into routine care by offering CBT, mindfulness programs, and SFBT to help parents challenge negative thoughts, regulate emotions, and strengthen coping mechanisms during their child's treatment. Family therapy and parent support groups can enhance communication, reduce isolation, and create a shared support network, fostering resilience among parents facing the stress of caring for a child with medical conditions. Awareness campaigns and workshops teaching stress management, relaxation techniques (e.g., PMR, breathing exercises, yoga), and coping strategies can empower parents with practical skills to manage emotional distress. Conducting culturally relevant research—particularly in Pakistan—can guide the development of effective, context-appropriate interventions that address parental stress, mental well-being, and healthcare support needs.

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