Appearance Anxiety, Health-Related Quality of Life and Coping Strategies among Burn Patients in Pakistan

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Abstract

Burn injuries have a significant impact on patients, their families, and society as a whole, affecting them physically, psychologically, and financially. The majority of burn injuries occur in low- and middle-income countries, where the burden is especially high. Living with burn scars in a society that emphasizes beauty can be challenging for individuals affected by these injuries. Burn scars often lead to functional impairment and disfigurement, significantly impacting daily activities and social interactions. To cope with the distressing situation, individuals employ various coping mechanisms. Therefore, this study aimed to investigate the coping styles utilized by burn patients to manage appearance anxiety and identify potential targets for psychological interventions that can enhance their quality of life. The study included 92 patients who had been discharged from the Burn Care Centre (PIMS) in Islamabad and were followed up. These patients had visible scars resulting from burn injuries. Data collection involved the use of the Brief COPE Questionnaire (BCOPE), Health-Related Quality of Life Questionnaire (HR-QOL), and Social Appearance Anxiety Scale (SAAS). Data were evaluated using percentage and regression analyses. The average age range of the participants was 27.5+32.5. Mediation analysis found that social appearance anxiety had a non-significant direct impact on health-related quality of life. These findings highlight the importance of emotion-focused coping strategies in mitigating the impact of social appearance anxiety on the quality of life of burn patients. They also provide valuable insights for the development of psychological interventions aimed at improving the well-being of individuals living with visible differences resulting from burn injuries.

Keywords: Burns, Social Appearance Anxiety, Scars, Quality of life, Coping Styles

Introduction

A state of mental wellness known as mental health enables people to manage life's stressors, recognize their potential, learn and function successfully, and give back to their community (WHO, 2022). Regardless of age, sex, financial level, or race, everyone is at some risk of getting a mental health issue (Felman & TeeMelegrito, 2022). In addition to several medical emergencies, burn injuries cause the patient, his family, and society to face physical, psychological, and financial difficulties. Major burns can have an irreversible impact on every aspect of the patient's life (Cembranelli, 2020).

A burn is an injury to the skin or other organic tissue primarily caused by heat, radiation, radioactivity, electricity, friction, or contact with chemicals. Burns are a major public health issue worldwide, causing an estimated 180,000 fatalities per year. Nearly two-thirds of these occur in the WHO African and South-East Asia regions, with the majority occurring in low- and middle-income nations (World Health Organization, 2018). Over 300,000 people each year die from flames alone, and many more die from various types of burns such as scalds, electrical, and chemical burns. Additionally, millions more people suffer from permanent disabilities and disfigurements, which sometimes lead to humiliation and rejection. For victims and their families, each of these causes further personal hardships and financial losses (WHO, 2011).

In Pakistan, burn injuries are a significant but understudied subject. According to the Global Burden of Disease 2010 report, Pakistan has an age-standardized death rate of 5.8 per 100,000 people for injuries brought on by fire, heat, and hot substances (Siddiqui et al., 2015). Stove burns, unintentional burns, domestic abuse, and acid-throwing attacks have all escalated in Pakistan in recent years. Burn injuries are frequently caused by domestic problems and mishaps. Farooq et al. claims that poor socioeconomic position, lack of knowledge, ignorance of safe practice methods, and improper use of kerosene pressure stoves are all factors that contribute to the high rate of unintentional burn injuries in Rawalpindi, Pakistan (Bibi et al., 2018).

Those who survive non-fatal burns have to live with physical and mental scars for the rest of their lives. According to the WHO, burns are one of the main factors contributing to the loss of Disability-Adjusted Life Years (DALYs) in low- and middle-income countries. 17% of burn victims in Bangladesh, Colombia, Egypt, and Pakistan have a temporary handicap, while 18%

have a permanent one (Ali et al., 2016). A patient with burn injuries may have a variety of mental and psychological issues that could negatively impact their health and wellness (Bhatti et al., 2020). On the whole, psychological well-being after burn injury was seen to be lower in Asian and South Asian countries compared to Europe or the United States (Puthumana et al., 2022)

Literature Review

Living with scars in a culture that places a lot of value on beauty can be difficult for burn victims. especially in the context of modern society, where there are signs that rising demands for beauty are normalizing themselves (N. Van Loey, 2020). Patients who experience changes in their appearance frequently experience disappointment, fear, inferiority, anxiety, loneliness, suspicion, and mental disorders (Zhang et al., 2019). Changes in appearance, which run counter to the societal ideal of flawless skin, are one factor that adds to this burden. People with these issues frequently report higher levels of self-consciousness, shame over their appearance, feelings of stigmatization, and social anxiety (Schut et al., 2022). A form of social anxiety known as "social appearance anxiety" is linked to how people perceive their bodies and is made worse by using social media, which can make people feel lonely (Papapanou et al., 2023).

Contrary to visibility, scar severity was not linked to distress. Scars in visible places are linked to social anxiety, avoidance, and low quality of life (Jain et al., 2017). Life after a burn injury can be challenging for a variety of reasons, including physical symptoms like pain and itching, psychological symptoms like traumatic stress and anxiety, and social challenges like stigmatization. These issues can all have a long-term negative impact on health-related quality of life (HRQL). The term "HRQL" refers to a patient's perception of the impact of their health on their ability to function physically, mentally, and socially (Boersma-van Dam et al., 2021). A person's quality of life may be negatively impacted by difficulties adjusting to a change in appearance because of worry, shame, diminished self-worth, social avoidance, and isolation, all of which can seriously impair social, occupational, and relationship functioning (Shepherd et al., 2019). For burn survivors, restrictions on daily activities and social contacts typically matter more than any other potential chronic condition. Social contact and psychological and social well-being are inversely correlated with confidence and life satisfaction (Rothman et al., 2016).

A strong desire to avoid being observed can result from social appearance anxiety, and loneliness can be made worse by a fear of being rejected because of one's appearance (Papapanou et al., 2023). Coping mechanisms will be used to deal with this kind of stressful situation. It has been discovered that coping mechanisms have a direct impact on health; emotional support, optimism, and problem-solving were linked to better health, while avoidance, revaluation/adjustment, self-control, and instrumental action were linked to worse health (Ying et al., 2013). A person's ability to handle difficult life events and interact with others is also impacted by burn damage. Coping refers to the cognitive and behavioral strategies used to control, lessen, and manage stress-related demands. Coping is a process of changing cognitive and behavioral efforts to manage external and internal demands. There are many ways of coping with trauma, some more adaptive than others. Avoidant strategies, such as denial and self-distraction, are less useful and negatively impact the relationship between stress and well-being (Martin et al., 2021).

Body image is frequently a problem for people who have had burns, in addition to general mental health. Although burn scars alone do not predict how people perceive their bodies, coping mechanisms do play a significant influence in how people manage and live with their scarring or other obvious differences. Patients with burns who have poor body images may struggle with psychosocial adjustment, low self-esteem, and depression if they don't have effective coping mechanisms (Rothman et al., 2016b). There is evidence that greater levels of acceptance indicate better life quality (Shepherd et al., 2019b). According to some studies, those who have had burns experience moderate social anxiety (Ayhan et al., 2022b). In multivariate studies, it was found that post-burn unemployment, post-burn depression, PTSD symptoms, avoidance coping, lack of social or emotional support, higher degrees of neuroticism, and burn severity all contributed to a worse HR-QoL (Spronk et al., 2018b). This is due to the unexpected and sudden change in appearance due to scarring from such injuries, as well as other psychological difficulties such as those aforementioned.

Given that it has been observed that the variations in health outcome are several whereas factors affecting positive health outcomes requires greater attention in the context of burn injury (Ying et al., 2013). In the realm of research, there remains a significant gap in the literature concerning appearance anxiety and its impact on the health outcomes of burn patients. There is

currently minimal published literature investigating the role of coping styles in appearance anxiety and quality of life in those that have experienced injuries resulting in scarring. This study is therefore important in bridging this gap, enhancing our knowledge about the important coping styles used by patients that maintain appearance anxiety, and identifying potential treatment targets for psychological interventions to improve the quality of life in individuals living with a visible difference.

Hence, the study objectives were to assess the role of appearance anxiety on health-related quality of life among burn patients in Pakistan; to examine the mediating role of coping styles on appearance anxiety and health-related quality of life among burn patients in Pakistan; to determine the mediating role of Avoidant coping on appearance anxiety and health-related quality of life; to determine the mediating role of Problem-focused coping on appearance anxiety and health-related quality of life; to determine the mediating role of Emotion-focusedEmotion-focused coping on appearance anxiety and health-related quality of life.

Research Methodology

Research Design: The study was quantitative and cross-sectional. Non-probability sampling design was used to select the sample.

Location: This study was conducted at the National Burn Care Centre, Pakistan Institute of Medical Sciences (PIMS), which is a tertiary care university teaching hospital in Islamabad. The hospital receives patients from the north region of the country including the state of Azad Jammu and Kashmir, the provinces of Gilgit-Baltistan, Khyber Pakhtunkhwa, and Punjab (northern part). The burn care center serves as the Department of Burn and Reconstructive Surgery for post-graduate training affiliated with the Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad.

Sample and sampling technique: 92 outpatients both male and female having visible scars as a result of burn (flame, scald, electric) with the age range of 20 to 35 years of age were considered for this study. The sample was calculated through G-power. Participants were ensured to be in the phase of 2-8 weeks post-burn injury. People diagnosed with psychiatric disorders (except nicotine dependence) before the burn injury were excluded from the study.

Ethical considerations: The research was approved by the faculty administration. Before administering the questionnaire, the researcher explained the purpose of the study to the participants and also encouraged the participants to answer as candidly and sincerely as possible, since this was important for the validity of the study. Participants were also informed that all responses would be kept confidential and they can leave anytime they want.

Assessment Measures: Following are the assessment measures used for this study.

Demographic Sheet

The demographic sheet will be used to gather basic socio-demographic information like gender, age, marital status, and education level, type of burn, percentage of burn, TBSA, depth of the burn.

World health organization Quality of life questionnaire–BREF (WHOQOL-BREF)

World Health Organization Quality of Life-Brief Scale (WHOQOL-BREF) was used to evaluate the quality of life of people with burns. The WHOQOL-BREF is a 26-item questionnaire that includes questions on general health and QOL as well as four domains: physical health (7 items), psychological health (6 items), social connections (3 items), and environmental health (8 items) (Cambridge University, 1998). A five-point Likert-type scale is used by participants to rate the items.

Items related to mobility, everyday activities, functional ability, energy, discomfort, and sleep are all part of the physical health domain. Self-image, unfavorable ideas, favorable attitudes, self-esteem, mentality, learning capacity, memory focus, religion, and mental state are among the psychological domain items. Personal connections, social support, and sexual life are all included in the social relationships area of the test.

The WHOQOL-BREF has strong psychometric qualities, according to the research. (Macuzic, 2019). The whole WHOQOL-BREF scale exhibits a satisfactory level of internal consistency with Cronbach's alpha value of 0.896)

Social Appearance Anxiety Scale (SAAS)

This scale was developed by Hart et al. in 2008. The scale comprises 16 items, and each item is scored between "1 — strongly disagree" and "5 — strongly agree." The total score that can be obtained from the scale, which measures social appearance anxiety under one dimension, ranges from 16 to 80. High scores for the SAAS indicate high appearance anxiety. Cronbach's alpha coefficient of the scale was found to be 0.84 with internal reliability of 0.942 in the original study (Ayhan et al., 2022).

Brief COPE

This scale was developed by Carver et al. (1989). The Brief-COPE is a 28-item self-report questionnaire designed to measure effective and ineffective ways to cope with a stressful life event. The scale can determine someone's primary coping styles as either Approach Coping or Avoidant Coping. In addition, the following subscales are reported: Self-distraction, Active coping, Denial, Substance use, Use of emotional support, Use of instrumental support, Behavioral disengagement, Venting, Positive reframing, Planning, Humor, Acceptance, Religion, & Self-blame.

The subscales demonstrated acceptable alpha reliability. Brief COPE demonstrated good preliminary evidence of internal consistency, convergent, and divergent validity for coping strategies, therefore, could be used in research and clinical settings in the future in our culture

Procedure

The participants of this study are from Burn Care Centre Islamabad as it is the only Centre in Islamabad/Rawalpindi that has 20 beds for Burn Patients and 200 outpatients from different cities i.e. KPK, Punjab, and patients from Afghanistan also visit. Before collecting the data, every patient's consent was taken, and if they denied participating data was not collected from them. The data was collected right after the approval from Ethical Board Committee using the aforementioned scales and then coded with the help of SPSS. Different graphs were made of data analysis describing the mean, median, mode, and standard deviation. Statistical analysis was also applied to check the normal distribution of data and correlation among variables.

Analysis

Investigating the effects of appearance anxiety on the health-related quality of life for burn victims in Pakistan was the main goal of this study. The study also sought to determine whether coping mechanisms in this cohort mediate the association between appearance anxiety and health-related quality of life.

Age, ethnicity, and marital status were among the demographic variables whose frequencies, percentages, means, and standard deviations were computed using descriptive statistics. The analysis provided a summary of the distribution and central tendencies of these variables within the study sample. Further to evaluate the study's goals and hypotheses, the Pearson Product Moment Correlation, Multiple Linear Regression, and Process Macro were run.

Table 1

Socio-demographic Characteristics of Participants (n=92)

Characteristic	N	%	*M*	*SD*
Age (Years)				
20-27	60	65.2	.35	.479
28-35	32	32.8		
Gender				
Male	35	38	.62	.488
Female	57	62		
Marital Status				
Unmarried	45	48.9	.64	.622
Married	40	43.5		
Divorced	7	7.6		
Education				
Matric	50	54.3	.66	.802
Intermediate	23	25.0		
Bachelors	19	20.7		
Type of Burn				
Scalds				
	10	10.9	.92	.370
Flame	79	85.9		
Electric	3	3.3		
TBSA				
1-20%	8	8.7	1.32	.694
21-40%	51	55.4		
41-60%	29	31.5		
61-80%	4	4.3		

Note. *n* = frequency. *M* = Mean. *SD* = Standard Deviation

Table 1 showed that out of 92 burn patients 54.3% (*n* =54) of them were between the ages of 20 and 27 and the other 32.8% (*n* =32) were between the ages of

28-35 years. Out of total, 62% (*n* = 77) were female and 32% (*n* = 35) were males in which 48.9% (*n*= 45)were married, 43.5% (n=40) were unmarried and 7.6% (n=7) were divorced.

The majority of patients were only Matric pass 39.3% (*n* = 59), some had done Intermediate 25% (n=23) and 20.7% (n=19) had bachelor's degree. Furthermore,the table also reveals the type of burn patients had suffered, where 10.9% (*n*= 10) were scalded burn and 3.3% (n=3) were electric burn, while flames burn were more seen in patients in our sample 85.9% (n=79). Lastly, TBSA (total body surface area) was also reported that of mostly patients had suffered 21-40% of TBSA 55.5% (n=51) and the rest suffered 1-20%, 41-60%, and 61-80% of TBSA 8.7% (n=8), 31.5% (n=29), 4.3% (n=4) respectively.

Table 2
Descriptive Statistics and Psychometric Properties

Scales	**K**	**Ranges**	**M**	**SD**	**Cronbach's α**
Social Appearance Anxiety Scale	16	24-76	49.01	12.982	.921
Brief COPE	28	54-82	68.82	5.865	.892
Avoidant Coping	8	8-22	10.90	3.483	.712
Problem Focused	8	8-39	24.13	5.713	.753
Emotion Focused	12	12-37	21.19	6.132	.772
HR-QOL	26	64-105	83.26	10.185	.800

K= No. of items, M= Means, SD= Standard Deviation

Table 2 shows the psychometric properties of the instruments that are used. The Cronbach's α for the Social Appearance anxiety scale was .921 (>.70), which indicates excellent internal consistency. The Cronbach's α for Brief COPE was .892 (>.70), which indicates good internal consistency whereas the three domains had Cronbach α value of .712 for Avoidant coping, .753 for Problem Focused coping, and .772 for Emotion Focused coping which indicated good internal consistency. The Cronbach's α for HR-QOL was .800 (>.70), which indicates good internal consistency.

Table 3
Means, Standard deviations, and Pearson product-moment correlations of study variables (n-92).

Variable	***M***	***SD***	**1**	**2**	**3**	**4**	**5**
1. SAAS	49.01	12.892	-	.010	.279**	.218*	.322**
2. HR-QOL	68.82	5.856	-	-	.125	-.070	.221*
3. BCOPE							
Avoidant coping				-	-	-	-
Emotion focused				-	-	-	-
Problem-focused	83.26	10.185	-	-	-	-	-

Note. *n* = No. of participants. *M* = Mean. *SD* = Standard *Deviation. **p<.01, *p<.05*

Table 3 shows the results of correlation analysis which indicate that Social Appearance Anxiety is positively but non-significantly related to health-related quality of life (*r* = .010, *p* >0.05*)* and positively significantly related to Coping Styles, with avoidant coping (r= .279**. *p* < 0.01*)*, with problem-focused coping *(r=.218*, p<.05) and with emotion-focused coping (r=.322**, p<.01). Whereas, Health-related quality of life has non-significant positive relation with avoidant coping (r-=.125, p>5), with problem-focused coping it had negative relation (r=-.070, p>.05) and with emotion-focused coping the relationship was positive and significant (*r* = .221*, *p* < .05).

Table 4
Regression Analysis of Social Appearance Anxiety on World Health Organization Health-Related Quality of Life-BREF Scale.

Variables	B	SE	T	P	95% CL LL UP
SAAS	.008	.081	.098	.922	6.91, 14.89
Avoidant	.073	.026	2.753	.007	.115, .637
Problem-focused	.093	.044	2.118	.037	.324, .652
Emotion-focused	.148	.046	3.221	.002	.093, .267

Note B= Unstandardized coefficient, SE= Standard Error, CL= Class Limit, LL=Lower Limit, UL= Upper Limit, p=significance level (p<.05).

Table 4 showed the impact of Social Appearance anxiety and coping styles on health-related quality of life. The R^2 value of .14 illustrated that the predictors (SAAS and Coping) explained 14% of the variance in the outcome variable (QOL) with F (3, 1432) = 7.455, p < .05.

In conclusion, the regression analysis suggested that SAAS and BCOPE have non-significant effects on the dependent variable, whereas QOL did not have a statistically significant effect.

Table 5
Mediating Effect of Coping styles on the relationship between Social Appearance Anxiety and Health-Related Quality of Life (N=9)

Predictor	**Avoidant Coping**		**Problem Focused**		**Emotion Focused**		**QOL**	
	β	SE	β	SE	β	SE	β	SE
Social Appearance Anxiety	.279**	.026	.218*	.044	.322**	.046	.010	.081
Avoidant Coping							.132	.320
Problem Focused							-.076	.193
Emotion Focused							.243*	.181
R^2	.078		.047		.103		.000	
F	7.580**		4.484*		10.37**		.010	

Note. B= Beta, SE= Standard Error

Table 5 presents the results of the mediation analysis conducted using the Process macro. The findings indicate that all three coping styles, namely avoidant coping, problem-focused coping, and emotion-focused coping, were positively and significantly associated with social appearance anxiety. However, when it comes to quality of life, the results differed. Quality of life was found to positively but insignificantly correlate with avoidant coping. On the other hand, higher levels of problem-focused coping were linked to lower quality of life. This indicates that problem-focused coping has a negative association with quality of life. However, there was a positive and substantial correlation between emotion-focused coping and quality of life, showing that higher levels of this coping style were associated with better quality of life.

Furthermore, the analysis revealed that social appearance anxiety accounted for only a small percentage of variance in the different coping styles. Specifically, it explained approximately 0.7% of the variance in avoidant coping, 0.4% of the variance in problem-focused coping, and 0.1% of the variance in emotion-focused coping. However, social appearance anxiety did not account for any variance (0%) in quality of life, indicating that other factors might play a more substantial role in determining the quality of life outcomes.

Table 6
The indirect effect of Avoidant Coping between Social Appearance Anxiety and Health-related Quality of life

Predictor	Effect	BootSE	BootLLCI	BootULCI
Avoidant Coping	.028	.038	-.021	.130

Table 6 displays that the indirect effect of Avoidant Coping between SAA and HR-QOL was validated to be negative.

Table 7

An indirect effect of Problem Focused Coping between Social Appearance Anxiety and Health-related Quality of life

Predictor	Effect	BootSE	BootLLCI	BootULCI
Problem-focused coping	-.013	.020	-.058	.025

Table 7 displays that the indirect effect of Problem-focused Coping between SAAS and HR-QOL was validated to be negative.

Table 8

An indirect effect of Emotion Focused Coping between Social Appearance Anxiety and Health-related Quality of life

Predictor	Effect	BootSE	BootLLCI	BootULCI
Emotion-focused coping	.060	.029	.011	.125

Table 8 displays that the indirect effect of Emotion-focused Coping between SAA and HR-QOL was validated to bepositive, which showed mediation.

In conclusion, the analysis revealed that social appearance anxiety did not have a significant direct effect on health-related quality of life ($\beta = 0.010$, $p > 0.05$). However, this effect became significant when considering the mediating role of emotion-focused coping ($\beta = 0.243$, $p < 0.05$). The relationship between social appearance anxiety and coping styles (avoidant

coping, problem-focused coping, and emotion-focused coping) was found to be significant (β = -0.279, .218, .046, $p < 0.05$).

Discussion

The current study aimed to explore how the quality of life of Pakistani people who suffered scars after a burn injury has changed, if people suffer from social appearance anxiety prevails in the burn population, and how effective coping styles play a mediating role between them. For this purpose, Social appearance anxiety was taken as an independent variable that doesn't change with other variables while Quality of life was taken as an Independent variable; we also took coping mechanisms (problem-focused, emotion-focused, and avoidant coping) as a mediator to check their role in our main study variables. Furthermore, to assess the data, SPSS 26 model was used. Pearson Product Moment Correlation, Multiple Linear Regression, and Process Macro were used to test the study hypotheses.

Validated psychometric scales were used to record the responses of the participants for each variable. The scales used were SAAS, WHO QOL Brief, and Brief-COPE. Table 2 in the results section indicates the psychometric properties of the scales to indicate the alpha reliability coefficient. The alpha coefficient of the (SAAS) was .84, for the WHO Quality of Life Scale-Brief it was .89 and for the three domains of Brief-COPE, it was .73, .72, and .78 for Avoidant coping, Emotion-focused coping, and problem-focused coping respectively. These reliabilities are close to the original reliabilities of the scale, .80 for SAAS (Hart et al. 2008.) .81 for QOL (WHO, 2018), and .89 for BCOPE (Carver, 1997).

Furthermore, the results of the investigation indicated that there was no statistically significant correlation between social appearance anxiety and health-related quality of life in a sample of 92 burn patients, from which most had experienced severe burns (>20% TBSA), hence negating the first objective (See table 3). A study conducted on children supports this result in which the SF-36 questionnaire was used to assess 80 children who had survived extensive burns (>70% TBSA) and scars on average 14.7 years after the first incident. Higher scores in the Physical Role category were seen in patients who were positively influenced by a functional

family, indicating an improved health-related quality of life (HRQoL) in that area. This relationship was found to be statistically significant ($p = 0.04$)(Stavrou et al., 2014).

A separate study conducted in Seattle reported that patients with burn injuries and scars generally exhibited a high quality of life (Patterson et al., 1993). Similarly, another study stated patients with burn injuries often face a long and challenging journey toward complete recovery. However, the presence of strong social support plays a vital role in making these patients feel accepted and comfortable. Consequently, when patients with burns have access to good social support, their overall quality of life tends to be higher. They are content with every aspect of their experiences and have successfully overcome many negative feelings (Kadam et al., 2021).

The present study also examined the experiences of individuals who have suffered burn injuries having obvious scars to cope with their social anxiety. The present research found that in this particular cohort, social anxiety and coping strategies were significantly positively correlated. This finding proved the second objective. These findings are consistent with earlier burn rehabilitation research that has repeatedly shown the intricate interplay between social appearance concerns and effective coping mechanisms among burn patients. Due to the physical appearance changes brought on by their injuries, burn patients with visible scars frequently suffer increased social appearance anxiety. Visible scars can make people feel more self-conscious and self-conscious about how others might view them. Burn survivors frequently create and use coping techniques in response to these difficulties to control the psychological distress brought on by their social anxiety (Van Loey, 2020).

According to studies, burn victims who have greater social worry over their looks frequently use more effective coping strategies. Individuals can control their anxiety and deal with the difficulties brought on by their visible scars by using adaptive and active coping methods, use of emotional support, problem-solving techniques, and keeping an upbeat attitude throughout the journey (Dukes et al., 2021). Peer support, including the chance to express emotions and discuss feelings with other burn survivors, was also regarded as important and helpful, according to an integrated evaluation of patients' experiences (Bosmans et al., 2015).

Furthermore, the emotional coping mechanisms and health-related quality of life of burn patients with visible scars were compared in the current study. High health-related quality of life

and emotion-focused coping were found to be strongly correlated in this particular cohort by our research proving (hypothesis 2c). While the current study did not have signifying relation between avoidant coping and problem-focused coping. These findings are consistent with earlier burn rehabilitation research that has repeatedly shown the impact of emotion-focused coping mechanisms on burn survivors' psychosocial well-being and quality of life. Due to their altered physical appearance and the psychological effects of their injury, burn victims with visible scars frequently experience severe emotional difficulties (Fauerbach et al, 2014).

In the context of Pakistani culture, religious aspects significantly contribute to the promotion of effective emotion-focused coping mechanisms among people, particularly in addressing burn-related difficulties. In conclusion, by showing a substantial link between emotion-focused coping and improved health-related quality of life in burn patients with visible scars, our study contributes to the body of knowledge. The results show the value of comprehending and addressing the emotional difficulties that burn survivors confront, as well as the contribution of emotion-focused coping techniques to adaptive adjustment and general well-being. Future studies should investigate therapies that improve coping abilities and emotional regulation in this population as well as the precise pathways by which emotion-focused coping affects the quality of life

According to Al-Ghabeesh (2022), improving the quality of life for burn victims may be correlated with active problem-solving, positive reframing, and emotional social support, according to a growing body of research. Conversely, avoidant coping techniques are linked to higher levels of PTSD, depressive symptoms, and body dissatisfaction. While emotion-focused and avoidant coping mechanisms may be effective in dealing with persistent stressors or conditions that are seen as being resistant to change, they may also be heavily utilized in the early stages of the coping process. Problem-focused coping mechanisms allow the management of events and situations that are thought to be modifiable by the individual (Al-Ghabeesh, 2022).

The avoidant and problem-focused coping techniques of burn patients with visible scars were also compared to their health-related quality of life in the current study. Surprisingly, findings revealed that there was no correlation between these coping strategies and health-related quality of life in this particular group (see Table 3). These results contrast with past research on burn rehabilitation, which commonly emphasized the potential impact of coping mechanisms on

the psychosocial well-being and quality of life of burn survivors. In a study, it was discovered that better health status was associated with the coping mechanisms of emotional support and optimism-problem resolution, while worse health status was associated with avoidance, revaluation-adjustment, self-control, and instrumental action (Bra et al., 2007).

Willebrand et al. (2002) distinguished three patient subgroups in the most current study: extensive, adaptive, and avoidant copers. The avoidant copers had the worst overall health and the greatest neuroticism and aggression scores. The adaptive copers obtained the most favorable results and personality ratings, whereas the extensive copers received moderate ratings (Willebrand et al., 2002). In a study, it was seen that through BSHS-B measures, the avoidant coping strategy had the strongest associations with "Bad outcome" and was related to work status, marital status, and living arrangements. The most effective method was emotional support, which was primarily connected to the psychosocial scales of the BSHS-B (Kildal et al., 2005).

The current study also examined the role of coping strategies as the mediator between the relations of appearance anxiety and health-related quality of life among burn patients. See Table 5, the partial mediation results indicate that even in the presence of appearance anxiety, individuals who successfully employ coping strategies aimed at managing their emotions, such as asking for social support, using positive self-talk, or taking part in activities that increase self-confidence, have a higher likelihood of improving their HR-QoL. These coping strategies help people manage their emotions, lessen their distress, and improve their general well-being

Hence, the findings of this study highlight the need for a focused approach in burn patient care, with particular attention to the relationship between appearance anxiety and quality of life, as well as the mediating effects of coping styles. While various studies worldwide and in Pakistan have explored burns, post-burn injuries, and burn scars, this study represents a pioneering effort in investigating these specific psychological aspects among burn patients.

The present study has made a significant contribution to the existing literature, although, like any research endeavor, it is not without its limitations, which warrant careful consideration. A primary limitation pertains to the uneven distribution of the sample between male and female patients. This discrepancy arose due to the nature of data collection on an OPD basis, where

maintaining an equal sample size proved challenging. Additionally, the study's specific focus on patients with visible scars further complicated the attainment of an equally distributed sample according to the study's specifications. Also, cultural variations in norms and perceptions could affect how burn patients experience and respond to the variables under study, potentially influencing the findings. Future research should strive to develop culturally sensitive assessment tools or adapt existing ones to ensure a more accurate understanding of burn patients' experiences within the Eastern cultural context.

Conclusion and Recommendations

The present study aimed to find the relationship between social appearance anxiety, health-related quality of life, and coping styles among burn patients. It was found that social appearance anxiety and health-related quality of life were minimally related to each other whereas, Social Appearance Anxiety and Coping Styles were both significantly and positively correlated. Among coping styles, emotion-focused coping appeared to be the strongest predictor of appearance anxiety. QOL was also found to be significantly related to emotional coping. Based on the study's results, it is evident that a broader implementation of burn units throughout Pakistan is crucial. These units should adopt an integrated approach that addresses not only the physical treatment of burn injuries but also caters to the psychological well-being of the patients. Raising awareness about the psychological needs of burn patients and integrating coping styles into treatment strategies should be a priority. Physicians and psychologists can play a pivotal role in psychoeducation families and friends about the consequences of burn injuries and how they can provide support to patients during their recovery process.

References

Al-Ghabeesh, S. H. (2022). Coping strategies, social support, and mindfulness improve the psychological well-being of Jordanian burn survivors: A descriptive correlational study. *Burns*, *48*(1), 236–243. https://doi.org/10.1016/j.burns.2021.04.012

Ali, S. A., Hamiz-ul-Fawwad, S., Al-Ibran, E., Ahmed, G., Saleem, A., Mustafa, D., & Hussain, M. (2016). Clinical and demographic features of burn injuries in Karachi: A six-year experience at the burns center, civil hospital, Karachi. *Annals of Burns and Fire Disasters*, *29*(1), 4–9.

Alwi, S. K. K., & Shaiq, M. (2019). Healthy Organizational Environment Enhances Employees' Productivity: An Empirical Evidence to Classical Concept. *J. Bus. Strateg*, *13*, 49

Ayhan, H., Savsar, A., Yilmaz Sahin, S., & Iyigun, E. (2022). Investigation of the relationship between social appearance anxiety and perceived social support in patients with burns. *Burns*, *48*(4), 816–823. https://doi.org/10.1016/j.burns.2021.08.020

Bhatti, D. S., Ain, N. U., Zulkiffal, R., Al-Nabulsi, Z. S., Faraz, A., Ahmad, R., Bhatti, D. S., Ain, N. U., Zulkiffal, R., Al-Nabulsi, Z., Faraz, A., & Ahmad, R. (2020). Anxiety and Depression Among Non-Facial Burn Patients at a Tertiary Care Center in Pakistan. *Cureus*, *12*(11). https://doi.org/10.7759/cureus.11347

Bibi, A., Kalim, S., & Khalid, M. A. (2018). Post-traumatic stress disorder and resilience among adult burn patients in Pakistan: A cross-sectional study. *Burns & Trauma*, *6*. https://doi.org/10.1186/s41038-018-0110-7

Boersma-van Dam, E., van de Schoot, R., Hofland, H. W. C., Engelhard, I. M., & Van Loey, N. E. E. (2021). Individual recovery of health-related quality of life during 18 months post-burn using a retrospective pre-burn measurement: An exploratory study. *Quality of Life Research*, *30*(3), 737–749. https://doi.org/10.1007/s11136-020-02678-0

Bosmans, M. W. G., Hofland, H. W., De Jong, A. E., & Van Loey, N. E. (2015). Coping with burns: The role of coping self-efficacy in the recovery from traumatic stress following burn injuries. *Journal of Behavioral Medicine*, *38*(4), 642–651. https://doi.org/10.1007/s10865-015-9638-1

Bra, M., Lonar, Z., Brajkovi, L., Gregurek, R., & Mikovi, V. (2007). Coping with Severe Burns in the Early Stage After Burn Injury. *Coll. Antropol.*

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the brief COPE. International Journal of Behavioral Medicine, 4, 92–100. http://dx.doi.org/10.1207/s15327558ijbm0401_6

Cembranelli, P. (2020). High voltage electrical burn resulting in upper limb amputation. *International Physical Medicine & Rehabilitation Journal*, *Volume 5*(Issue 1). https://doi.org/10.15406/ipmrj.2020.05.00230

Dukes, K., Baldwin, S., Assimacopoulos, E., Grieve, B., Hagedorn, J., & Wibbenmeyer, L. (2021). Influential Factors in the Recovery Process of Burn Survivors in a Predominately Rural State: A Qualitative Study. *Journal of Burn Care & Research: Official Publication of the American Burn Association*, *43*(2), 374–380. https://doi.org/10.1093/jbcr/irab232

Fatima, S. T., Alwi, S. K. K., Fatima, S. A., & Scholar, M. P. (2019). Work Stress of Teachers from Government Girls' Secondary Schools Karachi. *Work Stress*, *9*(6)

Felman, A., & TeeMelegrito, R. A. (2022, June 17). *Mental health: Definition, common disorders, early signs, and more*. https://www.medicalnewstoday.com/articles/154543

Jain, M., Khadilkar, N., & De Sousa, A. (2017). Burn-related factors affecting anxiety, depression and self-esteem in burn patients: An exploratory study. *Annals of Burns and Fire Disasters*, *30*(1), 30–34.

Kildal, M., Willebrand, M., Andersson, G., Gerdin, B., & Ekselius, L. (2005). Coping strategies, injury characteristics and long-term outcome after burn injury. *Injury*, *36*(4), 511–518. https://doi.org/10.1016/j.injury.2004.06.013

Martin, L., Rea, S., & Wood, F. (2021). A quantitative analysis of the relationship between posttraumatic growth, depression, and coping styles after-burn. *Burns*, *47*(8), 1748–1755. https://doi.org/10.1016/j.burns.2021.05.019

Papapanou, T. K., Darviri, C., Kanaka-Gantenbein, C., Tigani, X., Michou, M., Vlachakis, D., Chrousos, G. P., & Bacopoulou, F. (2023). Strong Correlations Between Social Appearance Anxiety, Use of Social Media, and Feelings of Loneliness in Adolescents and Young Adults. *International Journal of Environmental Research and Public Health*, *20*(5), Article 5. https://doi.org/10.3390/ijerph20054296

Puthumana, J. S., Ross, E. S., Keller, P. R., Drogt, C. S., Khoo, K. H., Duraes, E. F., Hultman, C. S., & Lerman, S. F. (2022). Cross-Cultural Review of Sexuality, Relationships, and Body Image after Burns: Analysis of the BSHS-B. *European Burn Journal*, *3*(1), Article 1. https://doi.org/10.3390/ebj3010017

Rothman, D. J., Sutter, M., Perrin, P. B., LiBrandi, H., & Feldman, M. J. (2016). Coping styles and quality of life in adults with burn. *Burns*, *42*(5), 1105–1110. https://doi.org/10.1016/j.burns.2016.02.022

Schut, C., Dalgard, F. J., Bewley, A., Evers, A. W. M., Gieler, U., Lien, L., Sampogna, F., Ständer, S., Tomás-Aragonés, L., Vulink, N., Finlay, A. Y., Legat, F. J., Titeca, G., Jemec, G. B., Misery, L., Szabó, C., Grivcheva-Panovska, V., Spillekom-van Koulil, S., Balieva, F., … Collaborators, the E. S. (2022). Body dysmorphia in common skin diseases: Results of an observational, cross-sectional multicentre study among dermatological outpatients in 17 European countries*. *British Journal of Dermatology*, *187*(1), 115–125. https://doi.org/10.1111/bjd.21021

Shepherd, L., Reynolds, D. P., Turner, A., O'Boyle, C. P., & Thompson, A. R. (2019). The role of psychological flexibility in appearance anxiety in people who have experienced a visible burn injury. *Burns*, *45*(4), 942–949. https://doi.org/10.1016/j.burns.2018.11.015

Siddiqui, E., Zia, N., Feroze, A., Awan, S., Ali, A. L., Razzak, J. A., Hyder, A. A., & Latif, A. (2015). Burn injury characteristics: Findings from Pakistan National Emergency Department Surveillance Study. *BMC Emergency Medicine*, *15*(2), S5. https://doi.org/10.1186/1471-227X-15-S2-S5

Stavrou, D., Weissman, O., Tessone, A., Zilinsky, I., Holloway, S., Boyd, J., & Haik, J. (2014). Health-Related Quality of Life in burn patients – A review of the Literature. *Burns*, *40*(5), 788–796. https://doi.org/10.1016/j.burns.2013.11.014

Van Loey, N. (2020). *Psychological Impact of Living with Scars Following Burn Injury* (pp. 429–434). https://doi.org/10.1007/978-3-030-44766-3_48

Van Loey, N. E. E. (2020). Psychological Impact of Living with Scars Following Burn Injury. In L. Téot, T. A. Mustoe, E. Middelkoop, & G. G. Gauglitz (Eds.), *Textbook on Scar*

Management: State of the Art Management and Emerging Technologies. Springer. http://www.ncbi.nlm.nih.gov/books/NBK586135/

WHO. (2018). *Burns*. https://www.who.int/news-room/fact-sheets/detail/burns

WHO, W. (2022). *Mental health: Strengthening our response*. https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

Willebrand, M., Andersson, G., Kildal, M., & Ekselius, L. (2002). Exploration of coping patterns in burned adults: Cluster analysis of the coping with burns questionnaire (CBQ). *Burns*, *28*(6), 549–554.

World Health Organization. (2011). *Burn prevention: Success stories and lessons learned*. World Health Organization. https://apps.who.int/iris/handle/10665/97938

Ying, W. L., Pertrini, M. A., & Xin, L. L. (2013). Gender differences in the quality of life and coping patterns after discharge in patients recovering from burns in China. *Journal of Research in Nursing*, *18*(3), 247–262. https://doi.org/10.1177/1744987110379301

Zhang, X., Liu, Y., Deng, X., Deng, C., Pan, Y., & Hu, A. (2019). The Correlation Between Quality of Life and Acceptability of Disability in Patients With Facial Burn Scars. *Frontiers in Bioengineering and Biotechnology*, *7*. https://www.frontiersin.org/articles/10.3389/fbioe.2019.00329