Oral health-related quality of life and related factors among facial burn injury patients in Pakistan.

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Abstract

Background: There is a limited understanding of the long-term effect of facial burn injury on oral health. This study was aimed to describe the oral health-related quality of life of patients with facial burn injury and determine the associated risk factors.

Methods: Patients with facial burn who attended the Burn Care Center in Islamabad, Pakistan were systematically and randomly selected and invited to participate in this cross-sectional study. They underwent extra- and intra-oral examinations and, completed self-administered questionnaires. The severity of disfigurement and, caries (DMFT), periodontal (CPI) and oral hygiene (OHI-S) statuses were assessed. Validated Urdu language instruments were used to collect information on sociodemographic background, oral health behaviours, oral health-related quality of life (OHIP-14) and satisfaction with appearance (SWAP). Information relating to the time of burn injury event and, cause and severity (type, TBSA) of burn were obtained from medical records. The OHIP- 14 severity (add-score) and prevalence of impact measures were derived and analysed using simple and multiple linear regression.

Results: A total of 271 patients had participated in the study. The OHIP-14 prevalence of impact was 94% mean the mean add-score 37 = unit (sd = 8.5). The domains with the greatest impact prevalence were the physical pain (87%), psychological disability (87%), social disability (85%) and physical discomfort (83%). Poor clinical oral health status – particularly dental caries, oral health behaviours, severe burn injury, psychological distress and time of burn event, were associated with poor oral health-related quality of life (p< 0.05).

Conclusion: Poor oral conditions, particularly caries, and severity of burn injury are the main factors that affect the oral health-related quality of life in facial burn patients. Addressing issues related to oral health behaviours, especially dental visit, may reduce the impact.

Introduction

There is a growing interest in the long term psychosocial effects of burn injury research that focuses on the quality of life (1–4). Similar interest is also observed in the head and neck burn research where new reports relating to the quality of life of facial are published in recent years (5–7).

Scar contractures following a head and neck burn may lead to changes to oral structures and dentition but there is a limited report on this. It has been suggested that, in children with a facial burn, scar contractures around the peri-oral region may alter and deform the shape of the maxilla and mandibular growth. In severe cases of scar contracture of the chin, the disproportionate forces of the tongue and lip muscles (orbicularis oris) may, respectively, push the teeth outwardly and inwardly, leading to crowding and/or spacing of the teeth (8). In children and adults, scar contracture at the peri-oral and facial region may lead to microstomia, incomplete oral occlusion and temporomandibular joint dysfunction which then affect the daily functions such as eating, swallowing and speaking (9–11). Microstomia also restricts jaw movement and mouth opening, with or without pain, and limits access to the oral cavity (10)

and; decrease the effectiveness of oral hygiene care and increases the risk of oral diseases (12). Facial burn patients are reported to have psychosocial problems related to dissatisfaction with facial image, low self-esteem and problems to re-integrate and adapt to a new life. Stress, anxiety and depression, which are not uncommon to them, are also risk factors of tooth decay, periodontal disease, and tooth loss (13–27). Recent evidence suggests that the burden of oral diseases in facial burn patients is high (28) and potentially impact on the oral health-related quality of life, but the evidence is currently a limited. Thus, the current report aims to describe the oral health-related quality of life (OHRQoL) in patients with facial burn injury and examine the associated factors.

Methods And Materials

A cross-sectional study was carried out at the Burn Care Centre of the Institute of Medical Sciences, Pakistan, between June of 2016 and July 2017. The data collection was carried out after the study protocol was approved by the ethics committee of the institute (Reference no. F.1–1/2015/ERB/SZABMU) and written informed consent was obtained from the participants. A detailed description of the method has been described in Chaudhary *et al*. (2019). In summary, head and neck burn injury patients aged 15 years or older who presented with > 10% of total body surface area (TBSA) and, able to feed by mouth were recruited during their follow up visit at the centre. The participants were subjected to an oro-facial examination and questionnaires.

The extraoral examination assessed the severity of deformity using the observer-rated disfigurement scale. The assessment is based on the size and degree of distortion, the extent of impairment on facial expression and visibility of the affected area. It is scored between 1 to 9, where a higher score indicates more severe disfigurement (29, 30). The intra-oral examination assessed the severity of caries (DMFT), periodontal (CPI) and oral hygiene (OHI-S) status using standard methods (31–33). A new parameter, the *clinical oral status* was derived from the DMFT, CPI and OHI-S indices using the principal component analysis with no rotation. The parameter has an Eigenvalue = 2.5, explained 82.8% of the variance with a mean = 0.0, sd = 1.0 (min = − 3.17, max = 1.91). The higher value indicates a worse overall clinical oral condition. The oral health behaviour information included the self-reported frequency of daily tooth brushing (once vs twice or more) and dental visit in the past year (Yes, No). The barriers to utilization of oral healthcare services were asked using an open-ended question and the first response was categorised as psychological, social, distance, cost and self-perceived. The questionnaires included information on the sociodemographic information (gender, age group, education, employment, income) and two validated instruments in the Urdu language. The Oral Health Impact Profile (OHIP-14) assesses the oral health-related quality of life (OHRQoL) in the past 12 months based on 7 domains; the functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, and social disability and handicap (34, 35). The response score for each of the 14-items is scored as '0 - never', '1 - seldom', '2 - sometimes', '3 - often' or '4 - very often' and two outcome measures were derived. The *severity* of impact (add-score) is the total of the scores and ranges from 0 to 56; where a higher score corresponds to a poorer OHRQoL. The *prevalence* of impact is the percentage of people reporting 'often' and 'very often' (score ≥ 3) (36, 37). The Satisfaction With Appearance Scale - Urdu (SWAP-U) measures the

perceived satisfaction with facial-image and impact of burn scars on socio-behaviour. It has 14-items in four domains; the dissatisfaction with facial features, dissatisfaction with body appearance, social discomfort and perceived social impact. The response score for each of the items ranges from 1 (strongly disagree) to 7 (strongly agree). The total score ranges from 0 to 84 with higher scores indicating greater dissatisfaction (6, 38). Information relating to the severity of burn; the type of burn (2° vs 3° degree burn) and total body surface area burned (TBSA, 10−20% vs > 20%), time since the burn event and cause of burn were obtained from the medical record.

Statistical analysis. Descriptive analysis was carried out to summarise all the variables. Association analysis was carried out by regressing the add-score on the independent variables using the simple and multiple linear regression. The ordinal independent variables were analysed to examine the trend of exposure. Each category of the barriers to healthcare utilisation, cause of burn and employment variables is analysed individually. Multiple linear regression analysis was carried out to obtain the standardised coefficients, which was then used to contrast the strength of influence on OHQoL between the factors in a model. Three selected multiple regression models are presented as alternative solutions to address the multicollinearity and overfitting problems related to the clinical oral status and burn-related variables (39). In Model 1, the DMFT, CPI and OHI-S were assumed to have an independent influence on OHRQoL and entered into the model as fixed factors. In Models 2 and 3, the clinical oral status was used as a fixed factor. A final model was obtained by adding a significant variable from the bivariate analysis, one variable at a time, using manual iteration. A variable is retained in a model if it increased the R^2 significantly ($p < 0.05$). All analyses were carried out at 5% significant level and using the IBM SPSS v24.

Results

A total of 271 facial burn patients had participated in the study. The summary statistics of the sample had been described in Chaudhary *et.al.* (2019). In summary, there were 68.6% females, 78.9% below the age of 35-year-old, 91.9% with less than 12 years of schooling, 49.1% unemployed and, 65.7% with low personal income (< 15000 PKR). Also, there were 48% third-degree burn cases, 46.1% who had > 20% total body surface area (TBSA) burned and 82.7% had sustained the injuries for more than 2 years. The fire was the major cause of burn (41.3%) and 88.9%% had moderate to severe facial disfigurement. The prevalence of caries (DMFT ≥ 1) was 100%, DMFT = 11.0 and 59% had periodontal pockets > 4 mm.

The OHIP-14 impact prevalence was very high at 94.1% (95%CI = 91.27%, 96.92%) (Table 1). Four most prevalent domains that impacted the participants were the physical pain (87%), psychological (87%) and social (85%) disabilities, and psychological discomfort (83%). The mean add-score was 37.7 units (95%CI = 36.64, 38.67 units) and four domains with the greatest score corresponded with that of impact prevalence.

In general, the bivariate analyses showed that the OHIP-14 add-score (poorer OHRQoL) was associated with poor clinical conditions (DMFT, CPI, OHI-S, clinical oral status), poor oral health behaviours (less frequent tooth brushing and dental visits), the longer time elapsed since the burn event and more severe

injury (disfigurement, dissatisfaction with appearance, type of burn and TBSA) (regression coefficient > 0 per unit increase in the exposure level; $p < 0.001$) (Table 2). The psychological barrier to healthcare utilisation was associated with poorer OHRQoL but the self-perceived and cost barriers were associated with better OHRQoL. Burns caused by fire or flame was associated with poorer OHRQoL but that by electrical was associated with better OHRQoL ($p < 0.05$). The male participants had a poorer oral health-related quality of life than females ($p < 0.01$).

Several possible and comparable model solutions with a good fit and similar adjusted-R^2 (≈ 0.8) were obtained from the multiple regression analyses. For brevity, only three models are presented to demonstrate the consistency of the findings (Table 2). Model 1 showed that the DMFT, CPI, oral health behaviours, cost, disfigurement, fire, scald, and sex-education interaction were significant predictors of the add-score. The DMFT had the largest influence in the model (standardised coefficient, $\beta = 0.48$) followed by the disfigurement ($\beta = 0.15$). The standardised coefficients for DMFT, CPI and OHI-S were 0.60 ($p < 0.001$, adjusted $R^2 = 0.81$), 0.30 (< 0.001, 0.76) and 0.22 (< 0.001, 0.75) respectively when each index was entered into a model as a lone fixed factor with the same covariates as in Model 1. However, the standardised coefficients for CPI and OHI-S were smaller than the disfigurement (0.45 and 0.52 respectively, $p < 0.001$). A collinearity problem in Model 1 caused the OHI-S index to lose its significance. The *clinical oral status* was used as an alternative oral health indicator in Models 2 and 3 to overcome the issue. Model 2 showed that one unit increase in clinical oral status score was associated with 4.7 unit increase in the add-score ($p < 0.001$) after adjusting for oral health behaviours, cost, disfigurement, satisfaction with appearance, time passed since the burn incident, scalding injury, and sex-education interaction. Model 3 is an alternative solution to Model 2 and addressed the collinearity problem between the disfigurement and SWAP variables and showed a very similar result to Model 2. The standardised coefficients of clinical oral status were consistently the largest ($\beta = 0.56$ for both) in the both models and followed by disfigurement, time since burn and satisfaction with appearance.

Discussion

This study found that the oral health-related quality of life of the participants is impacted by oral diseases. The proportion of participants with at least one OHIP-14 domain impacted (94%) is one of the highest ever reported. The next highest prevalence reported is in the homeless people and patients with the temporomandibular joint disorder, both at 91%. In these studies, however, the sample sizes are smaller and, the threshold that defines prevalence is less conventional, where it includes the responses *occasional*, *often* and *very often* (40, 41). Only the latter two responses are commonly used to define impact prevalence, for example in the reports on the impact prevalence of the general population of England (16%), and Australia (18%) (37) and, dentate (19%) and edentulous (31%) populations (37, 42); which are much lower compared to the present report. Correspondingly, the impact severity in the present study is also somewhat high (mean add-score = 37.6 unit) compared to patients with the gastrointestinal and hepatic disorder, temporomandibular joint disorder and; socially vulnerable and underserved populations (mean ranges from 8.8–27.8 unit) (40, 43, 44).

The results showed that the prevalence (> 74%) and severity of impacts (mean add-score > 2.7) are greater in the psychosocial items (items: 1, 5, 6, 9, 10, 11) compared to oral functions items (2, 4, 7, 8) (< 72%, < 2.7 respectively). The prevalence of psychosocial impact is much lower in earlier reports (< 7%) (37, 40, 42). Many participants in the sample have disfigured lips, exposed teeth, severe periodontal condition, gum recession, dry mouth and halitosis. They are uncomfortable being 'stared' at by the researcher and somewhat agitated during the oro-facial examination. The reactions are not uncommon and similar responses including embarrassment, tense, anxiety, and irritation have been reported (30, 45). Some participants seemed annoyed about having to repeat themselves when their pronunciation cannot be understood. These lower the self-esteem and increases the stress, anxiety and depression level during social interaction. and because they view the social impact of the oral condition as severe, thus they are more likely to report an impact with high frequency (often and very often). The consequence of poor dental condition in facial burn patients surpasses the dental pain and oral function limits to affect the psychological and social well-being. That reporting behaviour is in contrast to the denial attitude described in Slade et. al., (2005) as the willingness to report minor discomfort or unwilling to report a severe impact which leads to reporting an adverse impact with low frequency (never, seldom) (37). A less likely explanation for the high psychosocial impact is that the participants misinterpret the context of OHIP-14 instrument as that related to disfigurement instead of a dental condition. This is because the instruction is given by the investigator and specified in the instrument is very clear. Also, the instrument is shown to be valid and reliable for self-administration.

The analysis showed that the effect of oral health indices, either individually or combined, is greater compared to other non-dental factors. Oral health status is the main predictor of poor OHRQoL in the participants; the more severe caries, periodontal and oral hygiene status, the greater the impact. This is consistent with the general understanding of the relationship between oral health status and OHRQoL (12). Poor oral health behaviour, i.e. less frequent tooth brushing and episodic / no dental visit in the past year, is the most likely explanation for the oral health status in the participants (46, 47); but the reason behind it is not clear from this study. Nonetheless, it is possible that the psychosocial factors adversely influence the health behaviours, specifically the dental visit. Most of the participants avoided the dentist for fear of treatment and feeling embarrassed with their dental conditions. Those with social barriers have problems to interact with other people because they are shy, lack self-confidence or have low esteem (28); which could be due to the dental condition and/or disfigured appearance. Thus, they lose the opportunity to learn about good oral hygiene practice and get the treatment for their condition. Further investigations to better understand and overcome the issue is recommended.

The cost of dental treatment is shown to be associated with better OHRQoL. on further assessment, the data show that the majority of participants with a cost issue have significantly less severe injury and better oral health condition (p < 0.05). Because of that, they are less likely to have a major oral hygiene care problem compared to more severe conditions; hence, have a lower risk of having impacted OHRQoL. Caries development involves the interaction between time, plaque, acid from the bacteria and fermentable carbohydrates (48). Thus the longer the time of exposure to the risk factors after the burn incident, i.e. the oral health behaviours and psychosocial changes, the greater the risk of developing caries and having

poor OHRQoL. The associations between OHRQoL and scalding, fire and chemical burns are likely to be chance observations as there is no logical explanation for the significant findings. The sex-education interaction is significantly associated with OHRQoL in all three models. In the participants with low education, the OHRQoL is better in females than the males but; it is worse in the females who are better educated. This could be because the women are generally more conscious about their appearance and have greater aesthetic concerns than men and more expressive in describing a depressive impact, particularly those who are educated (49, 50).

It has been recommended that different scoring formats should be used in the analysis of participant-based outcomes such as the OHIP-14 (51, 52). However, only the results of the add-score are presented in this report because the analysis of impact prevalence did not yield any significant multivariate model. This is partly due to multicollinearity between the oral indices, barriers to health care utilisation, cause of the burn, and burn-related measurements that affect both outcomes. Multicollinearity issues are not unexpected because of the apparent correlation between the parameters. For example, all of the severity based burn measures such as the clinical assessments (the type of burn, TBSA) and subjective assessment (disfigurement and SWAP) are expected to be correlated to each other. Thus, only fitting only one measure in a model would be adequate. Thus, it is possible to obtain variations of reasonable 'final' model depending on the choice of measures included in a model. Models 2 and 3 demonstrate that effect by examining the disfiguration and SWAP separately. Similarly, in Models 2 and 3, the clinical oral status resolves the collinearity issue between the oral indices and supports the hypothesis for the effect of oral health measures on OHRQoL.

The results of this study should be interpreted with caution. Several limitations relating to the limited inference from the cross-sectional study design, reference population from a single institution in Pakistan, lack of reliability study due to patients unwilling to return for clinical reassessment and recall bias, have been discussed earlier (28). A very limited inference can be drawn for facial burn patients who are not followed-up at a burn centre. The key strength of this study is in its originality as this is the first study that investigated the OHRQoL of facial burn injury victims; a small niche and underserved population with unknown need. Highlighting their problem might help in getting them the attention and open a path to provide services to meet the oral health needs. Hopefully, these will improve the oral health-related quality of life and assist the victims to reintegrate into society.

Conclusion

The analysis showed nine out of ten patients with facial burn injury have impacted OHRQoL and; the major attribute to that is dental caries and followed by the periodontal and oral hygiene status and severity of the burn. In facial burn victims, the effects of poor oral conditions on psychosocial OHRQoL impact are greater than that on functional. Steps should be taken to improve the quality of life in this population by improving their dental visit behaviour. It is recommended that burn patients should be referred to a dentist for management of their oral health needs as soon as possible after the completion

of burn treatment. Institutions, such as the centre where this study was carried out could set up an in house dental services for that purpose.

Declarations

Code availability: Not applicable

Authors' contributions: FAC and BA contributed to the study concept, design, data analysis and manuscript preparation. Material preparation and data collection were carried out by FAC, under the supervision of UB. MZS reviewed and commented on the manuscript. All authors have reviewed and approved the final version of the manuscript.

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Authors' information

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Tables

Table 1. Summary of OHIP-14 add-score and impact prevalence, by item and domain (N = 271).

Domain and item	Item add-score Mean (sd)	Domain add-score Mean (sd)	Item impact prevalence n %	Domain impact prevalence n%
Functional limitation				
1. Trouble pronouncing words	2.97 (.948)	5.21 (1.62)	201(74.2)	204 (75.3)
2. Sense of taste worsens	2.25 (.864)		125 (47.2)	
Physical pain				
3. Has painful aching	2.92 (.587)	5.54 (1.20)	224 (86.7)	236 (87.1)
4. Uncomfortable to eat	2.62 (.797)		192 (71.9)	
Psychological discomfort				
5. Been self-conscious	2.72 (.893)	5.58 (1.71)	203 (75.0)	225 (83.0)
6. Feel tense	2.87 (.965)		202 (74.6)	
Physical disability				
7. Unsatisfactory diet	2.65 (.869)	5.04 (1.62)	166 (61.2)	179 (66.1)
8. Interrupt meals	2.39 (.895)		101 (37.2)	
Psychological disability				
9. Difficult to relax	2.97 (.867)	6.03 (1.88)	216 (79.8)	236 (87.1)
10. Embarrassment	3.06 (.983)		203 (74.9)	
Social disability				
11. Irritable with other people	3.25 (.956)	5.79 (1.88)	228 (84.1)	231 (85.2)
12. Difficulty doing usual jobs	2.54 (1.231)		141 (52.0)	
Handicap				
13. Less satisfying life	2.73 (.842)	4.47 (1.10)	176 (65.0)	185 (68.3)
14. Unable to function	1.74 (.831)		47 (17.3)	
Overall				
Add-score:		37.67 (8.50)		-
No impact		16.06 (3.26)		16 (5.9)
Impacted (1+ domain)		39.01 (6.71)		255 (94.1)

Table 2. The summary OHIP-14 add-scores by factors and results of the SLR and MLR analyses (N=271).

	Add-score	SLR	Model 1 (R^2 = 0.81[f])	Model 2 (R^2 = 0.79[f])	Model 3 (R^2 = 0.79[f])
(n)	mean (sd)	b (95%CI) (p)	b (95%CI) (p) (β)		
Total	37.7 (8.50)	-	-	-	-
DMFT, mean (sd)	0.87[5] (<0.001)	3.1 (2.87, 3.28) (<0.001)	1.7 (1.24, 2.17) (<0.001) (0.48)	-	-
CPI Bleeding (n=31) Calculus (n=80) 4-5mm pocket (n=117) >6mm pocket (n=43)	 19.6 (6.81) 35.6 (6.36) 41.4 (2.55) 44.2 (2.59)	7.4 (6.67, 8.14) (<0.001)	1.1 (0.22, 1.99) (0.01) (0.12)	-	-
OHI-S Good (n=7) Fair (n=85) Poor (n=179)	 17.9 (4.10) 30.5 (9.36) 41.8 (3.21)	11.5 (10.2, 12.8) (<0.001)	1.0 (-0.30, 2.38) (0.1) (0.07)	-	-
Clinical oral status	0.87[e] <0.001	7.4 (6.88, 7.89) (<0.001)	-	4.7 (3.64, 5.85) (<0.001) (0.56)	4.7 (3.80, 5.64) (<0.001) (0.56)
Brushing frequency (daily) Two or more (n=59) Once (n=212)	 27.7 (9.81) 40.4 (5.54)	12.7 (10.7, 14.6) (<0.001)	1.9 (0.45, 3.34) (0.01) (0.09)	2.0 (0.44, 3.50) (0.01) (0.10)	1.9 (0.41, 3.42) (0.01) (0.09)
Dental visit (past 12 months) Regular (n=45) Episodic (n=209) None (n=17)	 28.1 (11.2) 39.2 (6.47) 42.8 (3.30)	8.7 (6.79, 10.62) (<0.001)	1.6 (0.46, 2.65) (0.01) (0.09)	1.7 (0.57, 2.89) (0.004) (0.1)	1.5 (0.38, 2.67) (0.01) (0.08)
Barriers to oral health care utilization[a] Psychological (n=125) Social (n=42) Distance (n=25) Self-perceived (n=11) Cost (n=68)	 40.7 (4.80) 38.0 (8.21) 36.9 (9.37) 26.7 (9.42) 34.0 (10.6)	 5.6 (3.66, 7.52)* 0.4 (-2.46, 3.17) -0.9 (-4.37, 2.67) -11.4 (-16.37, -6.41)* -4.9 (-7.17, -2.62)*	 -1.3 (-2.36, -0.24) (0.02) (-0.07)	 -1.5 (-2.63, -0.37) (0.01) (-0.08)	-
Time since burn 1-2 years ago (n=47) >2-3 years ago (n=78) >3-4 years ago (n=105) >4 years ago (n=41)	 22.5 (7.31) 37.9 (4.52) 41.5 (3.08) 44.2 (2.80)	6.8 (6.14, 7.53) (<0.001)	-	1.1 (0.13, 2.05) (0.02) (0.12)	-
Cause of burn[a] Electrical (n=24) Chemical (n=58) Scald (n=77) Fire (n=112)	 25.7 (11.1) 39.3 (7.42) 37.9 (7.17) 39.1 (7.20)	 -13.1 (-16.29, -9.84)* 2.2 (-0.27, 4.67) 0.4 (-1.85, 2.67) 2.48 (0.43, 4.53)*	 2.0 (0.84, 3.22) (0.001) (0.11) 1.1 (0.02, 2.21) (<0.05) (0.07)	 1.4 (0.30, 2.47) (0.01) (0.07)	 1.1 (0.08, 2.17) (0.04) (0.06)
Disfigurement	0.81[c](<0.001)	4.6 (4.18, 4.96)	0.9 (0.25, 1.48)		1.4 (0.85,

		(<0.001)	(0.006) (0.15)	-	2.02) (<0.001) (0.26)
SWAP[b], mean (sd)	0.75[e] (<0.001)	0.8 (0.76, 0.74) (<0.001)	-	0.1 (0.14, 0.23) (0.03) (0.11)	-
Interaction: Sex-education	-0.13[e] (0.03)	-0.9 (-1.70, -0.08) (0.03)	-0.4 (-0.76, -0.05) (0.03) (-0.06)	-0.4 (-0.76, -0.01) (<0.05) (-0.06)	-0.4 (-0.77, -0.03) (0.04) (-0.06)
Type of injury 2nd-degree burn (n=141) 3rd-degree burn (n=130)	 33.2 (9.43) 42.3 (3.39)	9.1 (7.35, 10.8) (<0.001)	-	-	-
TBSA[c] 10-20% (n=146) > 20% (n=125)	 33.7 (9.49) 42.2 (3.48)	8.6 (6.79, 10.3) (<0.001)	-	-	-
Gender Male (n=85) Female (n=186)	39.6 (5.69) 36.7 (9.38)	-2.9 (-5.05, -0.72) (0.009)	-	-	-
Education (years of schooling) 0-5 (n=73) 6-12 (n=176) 13+ (n=22)	 39.1 (7.43) 36.7 (9.07) 39.5 (5.90)	0.8 (-2.64, 0.98) (0.4)	-	-	-
Age 15-24 (n=89) 25-34 (n=125) 35-44 (n=40) 45+ (n=17)	 34.2 (10.48) 40.7 (5.13) 36.2 (8.90) 37.1 (8.72)	1.2 (-0.12, 2.36) (0.05)	-	-	-
Employment status Unemployed (n=133) Full time job (n=49) Part time job (n=76) Others[1] (n=13)	 36.5 (8.32) 39.4 (6.95) 37.0 (9.33) 37.4 (7.76)	(reference) -0.5 (-3.28, 2.280 2.4 (-0.004, 4.79) 0.4 (-4.43, 5.25)	-	-	-
Personal income PKR[d] 5000-14000 (n=178) 15000-24000 (n=47) 25000-34000 (n=24) 3500+ (n=22)	 37.4 (8.79) 40.0 (6.41) 35.8 (9.33) 36.3 (7.76)	-0.3 (-1.33, 0.80) (0.6)	-	-	-
Family income PKR[d] 15000-24000 (n=139) 25000-34000 (n=59) 35000+ (n=73)	 37.8 (8.75) 38.4 (7.09) 36.6 (9.06)	-0.5 (-1.66, 0.73) (0.4)	-	-	-

SLR: simple linear regression, MLR: multiple linear regression, [a] entered as individual variable – contrasted the exposed to non-exposed,

[b]Satisfaction With Appearance Scale, [c]Total Body Surface Area, [d]Pakistani Rupees, [e]Correlation coefficient, [f]Adjusted-R^2,

b: regression coefficient, β: standardised coefficient

*$p < 0.05$