

Psychosocial Predictors of Quality of Life in Patients With Vitiligo

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The present study was designed to examine psychosocial predictors of quality of life (QoL) such as body image, self-esteem, impact of Vitiligo (psychologically and socially), and perceived stigmatization in patients with Vitiligo. The sample ($N = 120$) comprised of individuals with Vitiligo recruited from dermatology units of different hospitals in Lahore. Body Image State Scale (Cash, Fleming, Alindogan, Steadman, & Whitehead 2002), Rosenberg Self-Esteem Scale (Rosenberg, 1965), Vitiligo Impact Scale (Rammam, Khaitan, Mehta, Sreenivas, & Gupta, 2014), Perceived Stigmatization Questionnaire (Lawrence, Fauerbach, Heinberg, & Thomas, 2006) and Dermatology Life Quality Index (Finlay & Khan, 1994) were used as assessment measures. Results revealed that most of the individuals with Vitiligo reported poorer perception of QoL; while, men with Vitiligo expressed better perceived QoL as compared to women. Individuals with both types of Vitiligo (lesions on exposed/unexposed regions) expressed poor body image, negative impact of Vitiligo on their psycho-social functioning, and higher levels of perceived stigmatization. Individuals with exposed Vitiligo affected regions exhibited lower self-esteem. In addition, body image, impact of Vitiligo (psychologically and socially), and perceived stigmatization (absence of friendly behavior) significantly predicted QoL. It was concluded that Vitiligo had a greater impact on individual's psychological health and social functioning rather than physiological complications.

Keywords. Body image, self-esteem, impact of vitiligo, perceived stigmatization, quality of life

Individuals with a few diverse skin conditions are at high plausibility of extending psychosocial issues, and these can stay even after the skin gets recuperated. Sign of mental and enthusiastic

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pressure can prompt skin conditions which prompt mental pain; thereby, further may provoke poor psychological well-being, poor quality of life (QoL), and appearance related concerns (Morrone, 2004). Diagnosed with conditions like Vitiligo ultimately affect individual's perceptions about body image, self-esteem; influence their psychological health and social functioning; perceived stigmatization; and disturbed QoL. It is important to note that a worse body image is often linked with a high probability of developing depression, low self-esteem, eating disorders, and even suicidal ideation. Unmistakable skin conditions can make a significant social weight, particularly in connection to assemble kinships, fashioning, and enduring social connections. Startling responses from others, including questions, remarks, gazing, or shirking, can be thought about in all respects literally, inciting the negative impacts on QoL related with the physical side effects of skin diseases (Morrone, 2004).

Visible skin conditions can create a considerable social burden, especially, in relation to build friendships and forging or maintaining relationships especially in people diagnosed with Vitiligo (Thomson & Smolak, 2004). Vitiligo is the pigmentary disorder in which loss of pigments occurs on skin. It causes complications and visible impairments in all over the world; but, it is more distinguishable and problematic in dark skin people due to the white and pale patches on dark complexion (Parsad, Dogra, & Kanwar, 2003). It is also known as Leucoderma (leuco = white, derma = skin) which is defined by random light-colored and white lesions on the skin. It is one of the problems that bear serious social repercussions than medical upheavels (Osman, Elkordufani, & Abdullah, 2009). Conclusively, different researches inferred that Vitiligo negatively influences perceptions about body image, self-esteem, perceptions about being stigmatized, and create disturbances in psychosocial functioning (Parsad et al., 2003).

There are certain skin conditions which are associated with individual's perception about his or her own body image. Larsen and Lubkin (2005) described body image as the image of one's own body which builds in one's mind based on perceptions of one's bodies. Body image is also affected by the historical and the current influences; such historical influences from the past have major impact on how the individual shapes his or her appearance. It also affects the ways the individual perceived his or her appearance and what one possibly does about it. The current influences are the vents and experiences in everyday life of the individual that determine how do the individual thinks, feels, and behaves (Cash & Smolak, 2011). The body image comprises of two key facets, that is, body evaluation and

body investment. The evaluation facet of body image relates to the level of fulfillment or discontent with one's body and evaluative attitudes (Cash & Smolak, 2011). The other important facet of body image is investment, which refers to the extent to which one's attention is focused on one's own looks, thoughts, and actions. It also involves how much people rely on their physical appearance (Cash et al., 2002). Studies showed that body image and self-esteem are strongly related and interlinked and it has been suggested that body image is an integral component of the physical self as well as of mental and social environment. Therefore, body image is an important precursor in developing self-concept and self-esteem (Larsen & Lubkin, 2005).

The evaluation through which the individuals creates and usually maintain with respect to self; it expresses the attitude of endorsement and specifies the degree to which a person thinks oneself to be able, important, winning, and praise worthy (Murk, 2006). Self-esteem is based on one's inner feelings and not on apparent facts; therefore, there is often a wide gap between how one sees and think about perceptions of others about one's own self (Beugen et al., 2017). Self-esteem starts structuring in early years of development and parents/guardians play crucial role in developing sense of being valued and admired. There are some factors which play major role in the development of self-esteem such as family matters, genetic composition, social comparison, people, and occasions (Murk, 2006). Vitiligo, as a physical condition, is so much more than spots on the skin because it may deeply affect self-esteem. Vitiligo has a set of emotional, psychological, social symptoms; and these symptoms are characterized as frustration, shame, embarrassment, anxiety, stigmatization, perceived symptoms of burden and fear. Different researches about Vitiligo indicated that patients with low self-esteem tend to express perceived symptoms of burden. Vitiligo has greater psychosocial impact on patients; thereby, ultimately influencing their self-esteem and QoL as well (Pahwa, Mehda, Khaitan, Sharma, & Ramam, 2013).

It has long been theorized that people must be accepted and included in social interactions by others as a basic necessity. For health and well-being, social relationships are essential, and social rejection can lead to physical, behavioral, and emotional issues. Social rejection is fundamental to the stigmatization experience, which can be described as an understanding of social disapproval, discrediting or devaluation based on an attribute or physical mark (Alikhan, Felsten, Daly, & Rosic, 2011). A stigma is presently described as a biological or social discrediting mark that distracts an individual from others and

those who interact with them. People who vary in some respects from social norms are often marked as negative. Stigmatization in dermatology seems to be a prevalent and significant issue; specifically in Vitiligo (Dimitrov & Szepietowski, 2017), which would affect about 13.7% of the population. All types of stigma can bring stereotyping, distrust, fear, or avoidance and originate when other people or groups are labeled with a discrediting mark (Richard, Fortune, & Griffiths, 2003). In such circumstances, stigma can be overlapped with discrimination, to the point where personal and civil rights are denied being stigmatized (Falk, 2001). Particularly, health-related stigma, has been classified into three primary kinds including experienced or implemented stigma; expected, feel, or perceived stigma; and internalized or self-stigmatized (Perrott, Murray, Lowe, & Mathieson, 2000). Patients often experience or felt perceived stigma, referring to the adverse attitudes and reactions they perceive to be present in society associated with feelings of shame and fear of discrimination because of Vitiligo (Beugen et al., 2017). Real experiences of stigma (i.e., applied stigma) are also recorded, for instance, disgust or aversion reactions, adverse remarks, or contact avoidance (Falk, 2001).

In Pakistani context, some of the stereotypes emerged in empirical studies that people without Vitiligo are not like to sit with Vitiligo patients because of the misconception that Vitiligo is an infectious disease. Generally, people overlap leprosy and Vitiligo with each other and usually people without Vitiligo have misunderstanding that if people take milk after eating fish they are likely to develop Vitiligo, but medically this concept has not been proven (Ahmed, Ahmed, & Nasreen, 2007). The general misconceptions exclusively in Pakistan are that the Vitiligo is contagious, non-curable, developed due to deficiency of iron and calcium, associated to a specific kind of food/drinks, and disease is always have genetic predispositions which may lead to skin cancers (Sharaf, 2015).

Patients in a study narrated feeling visibly distinct and to some extent all had experienced perceived stigmatization. Stigmatization experiences have often been considered to be associated with socio-cultural variables related to appearance, status, and myths related to the Vitiligo cause (Thompson & Smolak, 2001). There are certain tribes in Nigeria having strong faith that anyone who has Vitiligo has disappointed the God by eating a particular food forbidden by his/her family and that until the God forgive, Vitiligo will not cure (Maduewesi, 2011). This is a highly religious and superstitious aspect of the Asian people; for instance, the most usual Vitiligo myth in Asia is that Vitiligo caused is by bad or evil people through magical

powers. In the light of different researches, it is concluded that different sociocultural aspects and stereotypes about Vitiligo can lead to individual's worse body image, low self-esteem (13.7%), provoking psychosocial impact of Vitiligo, and increased stigmatization which ultimately generate negative impact on patient's overall QoL (Ahmed et al., 2007).

The concept of QoL is mostly identified with subjective well-being and interpretation of QoL usually includes four elements comprising of satisfaction with life, happiness, positive feelings, and negative feelings such as predominating feeling of anxiety, depression, and distress (Ferrans et al., 2005). QoL is a vast concept which includes all range of constructs that influence what people value in living, reaching beyond its material side. The concept of QoL may differ depending on the objective or subjective approach (Jaiswal, Nayak & Shah, 2016); the former highlights the importance of health, living standards, and personal qualities of the individual related to individual's social status, as well as the objective features of their material, cultural, and natural environment. The latter aspect of QoL concentrate on the individual's subjective feeling of satisfaction with life resulting from the evaluation of various areas of their life and life, in general (Juczynki, 2006). Consistent with this idea, QoL is conceptualized on the basis of factor analysis establishing four domains of QoL such as physical health, psychological/spiritual, social/ economic, and environment (Ferrans et al., 2005).

Literature suggested that patients with Vitiligo experience psycho-social problems that ultimately deteriorate their QoL. Most of the researchers concluded that people, while, having Vitiligo experienced low self-esteem, poor body image and QoL, perceived stigmatization, adjustment problems, discrimination in work places, less marriage opportunities, and poor psychological well-being (Hedayat et al., 2016). To assess the impact of Vitiligo on QoL, self-esteem and body image, a cross-sectional examination based on patients with Vitiligo and control subjects coordinated by age and sex. Correlation of QoL, self-esteem, and body image among Vitiligo and control gatherings demonstrated a measurably significantly diminished QoL for patients with vitiligo, lower confidence, and more unfortunate image of the body prompting psychosocial difficulties. Similarly, Gaafar (2018) demonstrated Vitiligo Effect Scale based on patients significantly correlated with the gender, length of disease, marital status, face vitiligo, and proportion of the region engaged. Another study investigated the psychosocial influence that affect the generic and dermatological health related quality of life in Vitiligo patients (Pender, 1996). An aggregate of 300 Vitiligo patients and 300

solid controls, were coordinated on socio-statistic information, finished two polls of General Wellbeing Survey and DLQI. Results show that female patients with Vitiligo, patches on exposed areas of the body, longer duration of disease and previous treatment history expressed negative impact on QoL. This study suggested that it is important to assess the psychological and sociocultural effects of the Vitiligo (Aradhya, Manjunath, & Somaiah, 2015).

The physical appearance is predominantly judged by an individual's face. Any disfigurement in physical appearance affects the individual's self-esteem, body image, and QoL negatively. Individuals with visual bodily disfigurement may experience stigmatization which may vary across different cultures. Vitiligo is one of the dermatological illnesses that have a greater impact on person's QoL. In Pakistan, studies investigating Vitiligo tend to emphasize the clinical aspects only, such as treatment options, prevalence rates, psychiatric comorbidities and dietary restrictions with less focus on the psychosocial aspects of life (Ahmed et al., 2007). However, this study will facilitate to identify psychosocial aspects including the barriers that affect one's QoL which need to be screened, assessed, and managed.

Hypotheses

1. Body image is likely to have a positive relationship with QoL.
2. Impact of Vitiligo (psychologically/socially) is likely to have a negative relationship with QoL.
3. Perceived stigmatization is likely to have a negative relationship with QoL.
4. Self-esteem is likely to mediate the relationship between body image and QoL.
5. There are likely to be a gender differences in terms of body image, self-esteem, impact of vitiligo, perceived stigmatization and QoL.

Method

Sample

A cross-sectional research design was used to investigate the psychosocial factors of skin condition Vitiligo. Sample for the current study was approached through purposive sampling from Dermatology Departments of Hospitals, Lahore city. Estimated sample through

G-power Calculator ($N=120$) included 58 (48.3%) patients with exposed Vitiligo, 29 (24.2%) patients with unexposed Vitiligo, and 33(27.5%) patients with both types (exposed/unexposed) of Vitiligo. In terms of gender representation, sample consisted of 36 (30%) men and 84 (70%) women with mean age of 30.0 years ($SD = 10.4$). Mean age at onset of Vitiligo was 23.3 years ($SD = 9.47$); while duration of condition was 6.5 years ($SD = 5.60$) and percentage of Vitiligo spreading on body was 32.2 ($SD = 21.8$). Individuals with any physical and psychological conditions were excluded. Those who had any skin conditions other than Vitiligo were also excluded.

Table 1

Clinical Characteristics of Individuals with Vitiligo (N=120)

Characteristics	<i>f</i>	%
Body part affected by Vitiligo		
Hands	2.0	1.7
Feet	3.0	2.5
Face	24	20.0
Neck	2.0	1.7
Belly	6.0	5.0
Legs	8.0	6.7
Arms	1.0	0.8
More than one body part	74.0	61.7
Type of Vitiligo		
Exposed	58.0	48.3
Unexposed	29.0	24.2
Both	33.0	27.5
Previous treatment history		
Yes	33.0	27.5
No	85.0	70.8
Current treatment history		
Yes	110.0	91.7
No	8.0	6.7
Health care center		
Private	7.0	5.8
Government	111.0	92.5
Both	1.0	0.8
Are you taking medication?		
Yes	105.0	87.5
No	14.0	11.7
Family history of Vitiligo		
Yes	19.0	15.8
No	101.0	84.2

Instruments

Following instruments were used in the present study.

Demographic information sheet. A self-build demographic information sheet was used to gather knowledge about the exclusive information of the Vitiligo patients such as age, gender, education, educational background, occupational background, institute of employment, family system, residential background, and marital status.

Clinical information sheet. A self-constructed clinical information sheet was used to gather knowledge about the exclusive information of the Vitiligo patients such as age at the onset of Vitiligo, duration of condition, body part affected by Vitiligo, types of Vitiligo, percentage of Vitiligo spreading on body, previous treatment history, current treatment history, health care center, taking any medication and family history of Vitiligo.

Body Image State Scale (BISS). It was originally developed by Cash et al. (2002) comprises of six items: (1) dissatisfaction/satisfaction with the general physical appearance; (2) dissatisfaction/satisfaction with the size and shape of the body; (3) dissatisfaction/satisfaction with the weight of the body; (4) physical attractiveness/unattractiveness feelings; (5) present emotions about one's appearance relative to how one generally feels; and (6) appraisal of one's appearance relative to the average person's appearance with 9-point Likert scale. There is no defined cut off or ranges of BISS score by the original author; while higher score on BISS indicated positive body image. For the present study validated Urdu version was used that was translated by Manawar, Hasnain, and Kausar (2014); while, reliability index of .79 was achieved for BISS in the present study.

Rosenberg Self-Esteem Scale (RSES). RSES was developed by Rosenberg (1965). It contains 10 items with a 4-point Likert scale varying from 1 = *strongly disagree* to 4 = *strongly agree*. Five negatively phrased items were reverse scored as proposed by the author. Possible score range on the scale varied between 0 and 30; whereas, scores from 16 to 25 fall within normal range; scores 15 or below 15 indicate low self-esteem. Validated Urdu Version was used in the present study translated by Rasool, Khan, and Kausar (2010); while, alpha coefficient of .69 was acquired for RSES in the present study.

Vitiligo Impact Scale (VIS). Originally developed by Rammam et al. (2014) assessed the psychosocial consequences or impact of Vitiligo on individual's life. At the initial phase, the scale consisted of 35 items; however, after validation and adaptation, the final instrument consisted of 22 items with 3-point Likert scale ranging from (0) *Not at all* to (3) *very much*. The author proposed interpretation of scores as, no effect at all (0-1), small effect (2-5), moderate effect (6-10), large effect (11-20), and extremely large effect on patient's life (21-30). Validated Urdu version translated by Nazar and Kamran (2019) was used in the present study. Alpha coefficient of .84 was attained for the VIS in the current sample.

Perceived Stigmatization Questionnaire (PSQ). This Questionnaire was originally developed by Lawrence et al. (2006) which included 21 items consisted of three sub-scales, that is, Absence of Friendly Behaviors, Confusing /Staring Behaviors, and Hostile Behaviors. The respondents were required to rate how often she/he experiences stigmatization behaviors on a 5-point Likert scale ranging from 1 = *never* to 5 = *always*. Total score was tabulated by adding all the response scores and dividing by the total number of items (sub-scale 1 items were coded in reverse because these were worded positively); while, higher scores showed a higher perception of the conduct of stigmatization (Lawrence et al., 2006). In the present study, Urdu translated version (Nazar & Kamran, 2019) was used which exhibited good consistency coefficient of .77 for the current sample.

Dermatology Life Quality Index (DLQI). In many skin diseases, DLQI has been commonly used. It consist of 10 items which measures the effect of skin conditions over the previous seven days on vital components of everyday life. Each item was to be responded on 4-point likert scale ranging from 0 = *not relevant at all* to 3 = *very much*. The maximum score possible on DLQI was 30; where, high scores correlate with the QoL being more impaired. The range of score were interpreted as from 0-1 = no impact on patient's life; 2-5 = little effect on patient's life; 6-10 = mild effect on patient's life; 11-20 = huge effect on patient's life; and 21-30 = profound impact on patient's life (Finlay & Khan, 1994). Reliability index of .78 was acquired in the present study.

Procedure

Before data collection permission letter were presented to the different heads of hospitals for the purpose of data collection. After getting permission the researcher ensured the patients about

confidentiality of all obtained information from them and consent of the patients was sought. The participants were given the demographic information sheet, clinical information sheet, Rosenberg Self-Esteem Scale, Body Image State Scale, Vitiligo Impact Scale, Perceived Stigmatization Questionnaire, and Dermatology Life Quality Index scales to complete. Questionnaires were administered after brief instructions.

Results

Results revealed that there was significant correlation between study constructs as depicted by Table 2.

Table 2

Pearson Product Moment Correlation for Study Variables (N=120)

Variables	1	2	3	4	5	6	7	8
1 Body image	-	-.13	.48**	.37**	.37**	.32**	.46**	.53**
2 Self-esteem		-	-.11	-.10	-.04	-.03	-.07	-.09
3 Vitiligo Impact			-	.42**	.68**	.32**	.67**	.72**
4 Absence of friendly behavior				-	.46**	.27*	.72**	.49**
5 Confused/staring behavior					-	.36**	.89**	.60**
6 Hostile behavior						-	.61**	.34**
7 Perceived stigmatization							-	.65**
8 DLQI								-

Note. DLQI = Dermatology Life Quality Index.

* $p < .01$. ** $p < .00$.

The results given in Table 2 reveal that body image is positively correlated with impact of Vitiligo (psychologically and socially), perceived stigmatization and QoL. It has been found that the more individuals perceived poor body image, the more they perceived disease burden and stigmatization. Further, results reveal nonsignificant association of self-esteem with all the study variable. In addition, impact of Vitiligo is positively correlated with perceived stigmatization (absence of friendly behavior, confused/staring behavior, hostile behavior, and QoL. Moreover, overall perceived stigmatization is positively related with QoL.

Table 3
One way ANOVA for the Comparison of Three Vitiligo Groups (N = 120)

Variables	Exposed (n = 58)		Unexposed (n = 29)		Both (n = 33)		F	p	Tuckey's Post-hoc
	M	SD	M	SD	M	SD			
BI	31.1	5.14	23.3	4.51	32.8	3.78	37.1	.00	1, 3 > 2
SE	15.4	2.77	17.5	4.93	16.1	2.92	3.70	.00	1, 3 > 2
IV	32.5	8.23	21.6	8.09	36.2	7.29	28.34	.00	3, 1 > 2
AFB	21.8	3.47	19.0	4.63	22.1	3.46	6.76	.00	3, 1 > 2
CSB	26.5	6.26	20.3	8.29	28.1	4.38	13.12	.00	3, 1 > 2
Hostile	9.20	2.66	8.20	2.58	11.0	4.22	6.58	.00	3, 1 > 2
DLQI	13.7	4.22	7.17	5.30	15.1	4.21	28.07	.00	3, 1 > 2

Note: BI = Body Image, IV = Impact of Vitiligo, AFB = Absence of Friendly Behavior, CSB = Confused/Staring Behavior, PS = Perceived Stigmatization, DLQI = Dermatology Life Quality Index

Results presented in Table 3 show those individuals who have both types of Vitiligo (lesions on exposed/unexposed regions) express poor body image, higher level of negatively perceived impact of Vitiligo on their psychosocial functioning, perceived stigmatization, and poor QoL. Conversely, individuals with unexposed Vitiligo tend to express higher self-esteem as compared to other groups.

On the basis of gender it has been observed that women tend to have poor body image, higher perceived stigmatization, and poor QoL in relation to their male counterparts (see Table 4).

Table 4
Gender Differences on Study Variables (N=120)

Variables	Men (n = 36)		Women (n = 84)		t	p	95% CI		Cohen's D
	M	SD	M	SD			LL	UL	
BI	28.01	6.41	30.41	5.56	-2.00	.03	-4.71	-0.12	0.39
SE	16.50	4.63	16.00	2.94	0.78	.43	-0.83	1.95	0.12
IV	28.33	10.71	32.02	8.91	-1.91	.05	-7.45	0.04	0.37
PS	53.01	11.20	57.50	10.96	-2.00	.04	-8.82	-0.10	0.40
AFB	20.11	3.82	21.72	3.94	-2.00	.04	-3.15	-0.07	0.41
Con./Staring	24.45	7.76	25.91	6.66	-1.00	.28	-4.27	1.25	0.20
Hostile	8.52	2.33	9.86	3.56	-2.03	.04	-2.62	-0.05	0.44
DLQI	10.21	5.09	13.41	5.31	-3.01	.00	-5.28	-1.13	0.61

Note. BI = Body Image; SE = Self Esteem; IV = Impact of Vitiligo; PS = Perceived Stigmatization; AFB = Absence of Friendly Behavior; Con. = Confused; DLQI = Dermatology Life Quality Index.

The scores indicated that women tend to have poor body image than men as the mean difference is statistically significant. Similarly

women with Vitiligo display more perceived stigmatization and poor quality of life as compared to men.

Further results based on Multiple Regression Analysis indicated that body image and impact of vitiligo significantly predicted quality of life. In addition, perceived stigmatization (absence of friendly behavior) also positively predicted poor quality of life; whereas, confused/staring behavior and hostile behavior have not significantly predicted quality of life.

Table 5

Mediating Role of Self Esteem Between Body Image and QoL (N=120)

Variables	Dermatology Life Quality Index	
	Model 1	Model 2
	<i>B</i>	β
Constant	-2.04	-1.29
Body image	.49*	.48*
Self-esteem	-.04	-.09
R^2	.28	.28
ΔR^2	.27	.27
<i>F</i>	46.70*	23.20*

* $p < .00$.

Results presented in Table 5 show that overall model explain 28% of variance. Results revealed that body image positively predicted QoL; however, self-esteem does not mediate the relationship body image and quality of life.

Discussion

The present research is conducted to investigate the psychosocial predictors of perceived QoL in patients with Vitiligo. The study aims to investigate how most people with Vitiligo perceive their QoL. Furthermore, it aims to assess the psychosocial aspects associated with Vitiligo and to identify issues that act as barriers or facilitating factors influencing their QoL. This study based on the theoretical background of Revised Wilson and Cleary Model of Health Related Quality of Life (Daria, 2008). As indicated by this model, there are four noteworthy affecting components of overall QoL such as natural capacity, side effects, practical status, and general wellbeing discernments. Attributes of the individual and condition have critical effect on these variables just as on QoL.

Biological processes include the physiological function that support life and is the most central determinant of health status (Ferrans, Zerwic, Wilbur, & Larson, 2005). Biological function focuses on the work of cells and organ systems and can always be consistent through lab tests, physical assessment, and medical diagnosis. The next level of the revised Wilson and Cleary model (Daria, 2008) is functional status, which assesses the ability to perform certain tasks and is often influenced by biological function and symptoms. However, it is once again important to assess functional status as a separate variable because it may not be fully correlated with biological function or symptoms. Four constructs of working that are regularly estimated are physical, social, role, and mental. The following degree of the model is general wellbeing observations, a portrayal of all wellbeing ideas together, others that may not be delineated by the model. All of these concepts ultimately impact overall QoL which is a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to individuals (Ferrans et al., 2005).

The first finding of the study revealed that most individuals with Vitiligo tend to report poorer perceptions of QoL. Comparatively, males perceived their QoL better as compared to women with vitiligo. Mostly in societies, women tend to exaggerate or highlight their feelings, emotions, thoughts, and troubles in front of others which ultimately negatively affect their QoL and causing disturbances in interpersonal or intrapersonal relationships. On the other hand, men tend to hide their emotions and difficulties in front of people and try to calmly handle the situations which may facilitate their QoL in a better way (Ahmed, Ahmed, & Nasreen, 2007). The first finding of the present study is consistent with the study of Gafaar (2018) which stated that chronic skin diseases condition such as Vitiligo have been well reported to affect the individuals QoL on multiple dimensions, including the psychosocial domain. Because Vitiligo is commonly associated with social stigmatization, patients can suffer from lowered self-esteem, anxiety, or depression which ultimately negatively influences their QoL.

Similarly, Sangma et al. (2015) found the Vitiligo affect QoL of female patients negatively as compared to men. Vitiligo-affected female patients had significantly elevated DLQI scores as compared to male patients. There is increase in parameters like itch, embarrassment, decrease social and leisure activities, anxiety, poor body image, marital maladjustment, poor self-confidence, low self-esteem, facing stigma, lack of social support, depression and interpersonal or intrapersonal conflicts. This revealed that female

patients experienced more psychological and physiological consequences of Vitiligo thereby, supporting the current study finding.

Another finding of the present study revealed that individuals with both types of Vitiligo (lesions on exposed/unexposed lesions) tend to report poor body image, experienced more psychological consequences of Vitiligo, perceived stigmatization, and poorer perceptions of QoL as compared to other groups. This finding is consistent with Borimnejad, Yekta, and Nasrabadi (2006) inferring that patients with both types of Vitiligo (white patches on exposed and unexposed regions of the body) are likely to experience more stigmatization and report adverse psychological consequences in terms of disease burden; which ultimately affect their perceptions about body image and QoL. The reason patients reported that they are observed and judged by their appearance; which generally includes perception about face tone and complexion first. Those who had patches on their face tend to report poor body image and higher psychosocial consequences rather than those who have patches on other hidden body regions.

Nguyen et al. (2016) analyzed reviews about the psychosocial impact of three different Vitiligo groups, acne, and psoriasis. Findings suggested that those individuals who had white patches on both exposed and unexposed body parts experienced more stigmatization, fear of rejection, lack of social support, isolation, marital conflicts, relationship problems, distress, poor eating habits, adverse psychological, and physiological consequences in terms of longevity of skin condition which ultimately affect their perceptions about body image, stigmatization, and QoL.

Results of the present research showed that self-esteem is not associated with body image. This finding is in line with the study of Pahwa, Mehta, Khaitan, Sharma, and Rammam (2013) which revealed that body image is also influenced by different individual's factors such as personal preferences, morals, beliefs, socio-cultural values, and good social interactions. All these factors have greater impact on individual's body image and not only self-esteem. It has been disclosed that there are other geographical determinants that influence the body image of people living with skin diseases. Perceptions about body image are not impacted by individuals with fair complexion and skin lesions. People with darker skin lesions tend to perceive poorer body image that eventually leads to poor QoL. Therefore, self-esteem does not influence or mediate the relationship between body image and QoL as a single factor.

Limitations and Suggestions

Recruitment of participants was difficult due to non-availability of specific individuals with Vitiligo. To increase the generalizability of the results the study could be replicated to more hospitals and more cities in Pakistan. Some important variables, for example, social support, coping strategies, and fear of rejection that are related to Vitiligo are not catered in the present study. Therefore, these should be added in the future researches to see their mediating and moderating roles on QoL of patients with Vitiligo.

Implications

The findings of this study could be helpful in order to frame the psychological interventions to improve the QoL of these patients. It is important to explore psychosocial factors related to Vitiligo which could help in conducting therapeutic interventions for individuals whose psychosocial functioning are disturbed due to this autoimmune condition. Awareness campaigns should be held in order to dispute myths and superstitious beliefs regarding Vitiligo.

Conclusion

Vitiligo is the condition in which loss of pigments of the skin develop. Behavioral modifications and psychological interventions are essential for its treatment along with medication (American Vitiligo Research Foundation, 2014). The present study concluded that most individuals with Vitiligo tend to report poorer perception of QoL. Individuals who have both types of Vitiligo are likely to report poor body image, experiencing more psychological consequences due to their skin condition, high tendency to perceived stigmatization and poor QoL; whereas, individuals with exposed Vitiligo tend to report lower self-esteem.

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