

# Impact of Childhood Vitiligo on Self Esteem and Quality of Life in Adulthood

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## Abstract

**Objective:** To evaluate the impact of stigma around childhood vitiligo on self-esteem and quality of life of the patients in adulthood.

**Methods:** We conducted a cross-sectional paper based survey at New Cross Hospital, Wolverhampton, United Kingdom from January to June 2019.

**Results:** There was a statistically significant negative correlation between DLQI and RSES i.e., the bigger the effect of vitiligo on the quality of life, the lower the self-esteem of the patient ( $P=0.006$ , Pearson correlation coefficient =  $-0.638$ ). The highest scoring domain on DLQI was emotional distress (embarrassment), followed by clothes and social life. The least affected were physical symptoms and work life (mean =  $0.176$ ).

**Conclusion:** There is a huge stigma around childhood vitiligo and this has an adverse impact on the self-esteem and quality of life of patients in adulthood. The inverse relationship between RSES and DLQI highlights the need for psychological intervention along with dermatological therapies in these patients.

**Keywords:** Vitiligo, Self-Esteem, Childhood

## INTRODUCTION

Vitiligo is a stigmatised, chronic acquired pigmentary skin disorder, affecting 1 % of the general population<sup>1</sup>. It is clinically characterized by hypo-pigmented macules, which are the result of a loss of functional melanocytes in the epidermal basal layer<sup>2</sup>. The exact etiology of vitiligo remains unknown. Recent studies suggest that vitiligo results from the complex interplay of autoimmunity, genetics, psychological and oxidative stress<sup>3,4</sup>. Vitiligo can occur at any age, but is most commonly noted in the first two decades of life. 25 % of the patients are clinically affected before the age of 10<sup>5</sup>.

Detrimental psychosocial impact in adulthood is one of major consequences of this socially stigmatised disease, as childhood vitiligo tends to have a profound and long lasting impact on an individual's self esteem<sup>1</sup>. This in turn, causes deterioration in their quality of

life (QoL) as an adult. It is also known to affect the QoL of family members of the affected individual<sup>6</sup>.

Previous studies have noted that perceived stigma, recent experiences, self-esteem, personal distress and race are factors causing emotional instability among vitiligo patients<sup>4</sup>. However, there are very limited studies focused on the psychosocial impact of the stigma around childhood vitiligo. The aim of this present study is to evaluate the impact of stigma around childhood vitiligo on self-esteem and quality of life of the patients in adulthood.

## MATERIALS AND METHODS

This is a cross-sectional paper-based survey conducted with patients who have been suffering from vitiligo since childhood. This study was conducted at the dermatology outpatient department at New Cross Hospital in Wolverhampton, United Kingdom from January to June 2019. This survey screened for effect

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of stigma around childhood vitiligo on self-esteem in adulthood. This research study has also captured data on the psychosocial effects of vitiligo in adults. Two validated questionnaires have been adapted for use in this study. DLQI (Dermatology Life Quality Index), a 4-point, 10-item likert scale questionnaire has been used in this study. Rosenberg Self Esteem Scale (RSES), a 1965 scale, which was developed by Rosenberg, has also been adapted for use in this research.

DLQI, a 10-item has been validated to assess the impact of various dermatological conditions on the QoL (Quality of Life) of patients<sup>7</sup>. This questionnaire assesses the effects of issues such as relationships, employment, social life as well as mental and emotional distress. DLQI scores range from 0 to 30. A higher score signifies a decreased quality of life. QoL of the patients were considered impaired if the overall score > 2. The interpretation for the overall scoring is as follows:

- 0 -1: no effect at all on patient's life
- 2-5 : small effect on patient's life

## RESULTS

**Table 1.** Demographic Profile of Study groups

<b>Age Group of sample population</b>	
Mean	33.12
Mode	22
SD (Standard Deviation)	11.062
<b>Gender of sample population</b>	
	<b>N (%)</b>
Female	7 (41.2 %)
Male	10 (58.8 %)
<b>Ethnicity of Sample population</b>	
	<b>N (%)</b>
Asians	12 (70.6)
Caucasian	4 (23.5)
Afro- Caribbean	1 (5.9)

Overall, seventeen patients who are currently suffering with vitiligo were given these questionnaires to answer. Table 1 shows a demographic profile of the sample population. A good range of people from different ethnic background was interviewed in this survey.

16 out of 17 participants (94.1 %) indicated having negative childhood experiences as a result of vitiligo. Mean RSES among the 16 participants who experienced negative childhood experience was 17.56 +/- 4.115. RSES scores were statistically different between

- 6 -10: moderate effect on patient's life
- 11 -20: very large effect on patient's life
- 21 -30: extremely large effect on patient's life

Rosenberg Self Esteem scale (RSES) is a 10-item uni-dimensional scale that measures global self-worth by assessing both positive, negative thoughts and self-perception<sup>8</sup>. All items are answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree. We had to take into consideration that certain items on the Rosenberg questionnaire 2, 5, 6, 8, 9 were reverse scored. Scales range from 0-40, 40 indicating the highest possible score. A higher score indicates better self-esteem. Additional question aimed at the childhood experience of vitiligo were included.

## STATISTICAL ANALYSES

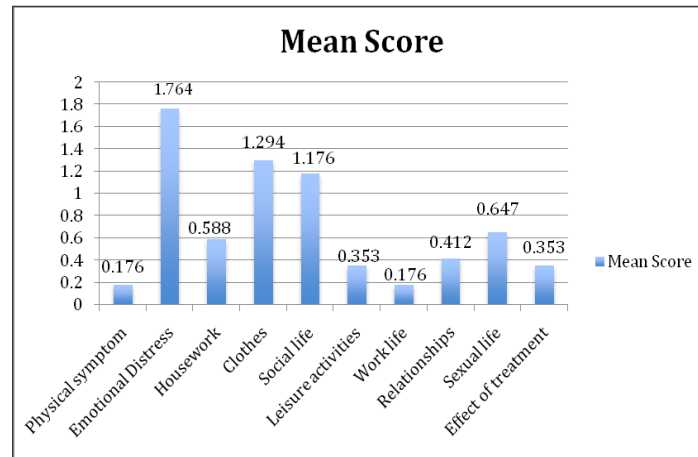
Data analysis was done using IBM SPSS software. DLQI and Rosenberg 1965 Self-Esteem questionnaire were scored based on the guidelines set by the instrument developing committee.

the two groups of patients with negative childhood experience and positive childhood experience ( $p=0.042$ ).

Vitiligo had an impact on 76.5 % ( $n=13$ ) of the respondents' quality of life (i.e. DLQI >2), as shown in Figure 2. Total mean DLQI is 7. Analysis of the DLQI showed that 23.3 % ( $n=4$ ) of the participants had DLQI <2 which indicates no effect on QoL, 5.9 % ( $n=1$ ) had small effect, 53.1 % ( $n=9$ ) had moderate effect and 17.7 % ( $n=3$ ) had a very large effect on QoL.

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There was a statistically significant negative correlation between DLQI and RSES i.e., the bigger the effect of vitiligo on the quality of life, the lower the self-esteem (P=0.006, Pearson correlation coefficient= -0.638), as illustrated by Figure 3.



**Figure 1.** Mean of Item-wise DLQI scores

Figure 1 gives a detailed explanation on the various domains on the DLQI. Mean score for individual DLQI items was analysed. Highest scoring domain was emotional distress (embarrassment), followed by influence on clothes and social life. The least affected were physical symptoms and work life (mean= 0.176).

### QOL AND GENDER

Although the QoL is more affected in male (8.70 +/- 4.057) compared to female (4.57 +/- 4.198), it was not statistically significant (P=0.43).

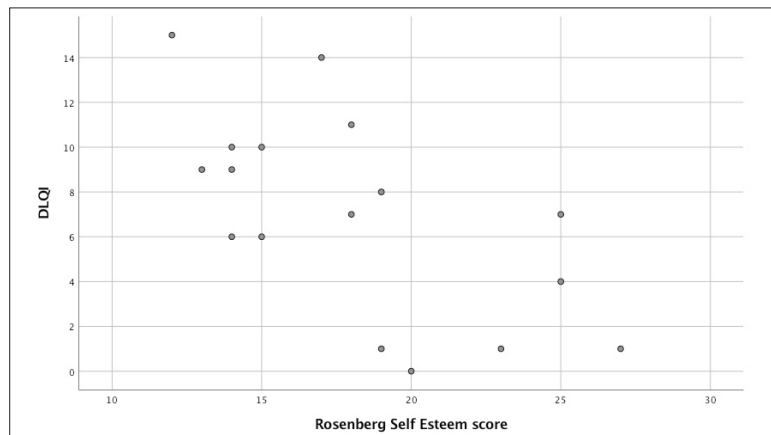
### QOL AND ETHNICITY

The mean value of DLQI was compared between various ethnicities (Asian, Caucasian and Afro-Caribbean). Mean DLQI of Asian, Caucasian and afro-Caribbean were noted to be 7.67+/- 4.98, 5 +/- 3.16

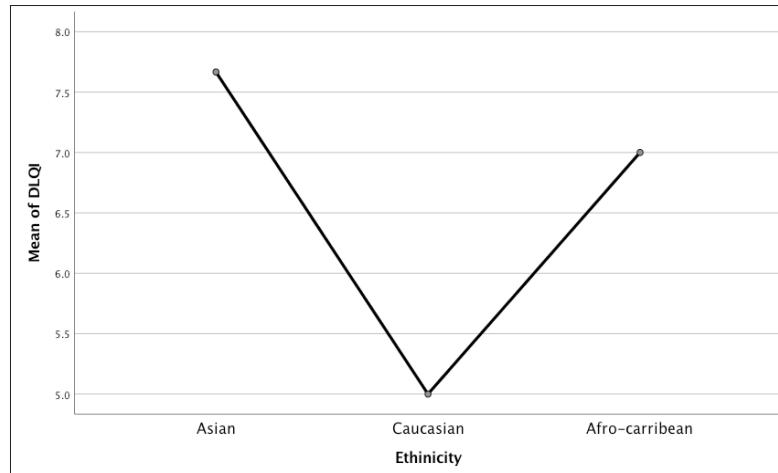
and 7 respectively, as illustrated in figure 4. However, this difference was not statistically significant between the three ethnic groups (p= 0.621).

DLQI score	N (Number of sample)/ %
No effect on QoL(0-1)	4(23.3 %)
Small effect on QoL (2-5)	1 (5.9 %)
Moderate effect on QoL(6-10)	9 (53.1 %)
Very large effect on QoL (11-20)	3 (17.7 %)
Extra large effect on QoL(21-30)	0 (0 %)
<b>RSES</b>	
Good Self Esteem (>15)	12
Low Self-Esteem (<15)	5

**Figure 2.** Distribution of scale scores according to study groups



**Figure 3.** Diagram illustrating correlation between DLQI and RSES



**Figure 4.** Means of DLQI among various ethnicities.

### DISCUSSION

Scientific evidence reveals that adverse childhood events or disorders have long-lasting effects on the function of neural stress-regulatory circuits such as hippocampus, amygdala and anterior cingulate cortex. These have an impact on the emotion regulation and stress levels in adult phase of life<sup>9</sup>. Thus, it is important to ensure mental health well-being in children who are vulnerable to negative childhood experiences to avoid any future emotional repercussions in adulthood.

Childhood vitiligo has been perceived to be a socially stigmatised condition that is known to affect children psychosocially. This current study investigates the link between negative experiences associated with childhood vitiligo and self esteem as well as quality of life in adulthood.

L Homan MW et. al suggested in a 2008 journal article that negative childhood experiences led to increased problems in social development and more impairment in HRQoL (Health related Quality of life) in adulthood<sup>10</sup>. This is reinforced by the results of the current study where 94.1 % of the patients reported having negative experiences in childhood as a result of vitiligo. The sample (n=1) that did not report experiencing any negative effect as a child scored the highest on Rosenberg Self Esteem Score (27). The mean RSES among the patients who experienced negative childhood events as a result of vitiligo was 17.56, which indicates low self-esteem on Rosenberg Self-Esteem Scale. The statistical significance between the RSES of two groups of people who are classified according to their experiences in childhood further proves that self-esteem of adults can be significantly affected as

a result of stigma around childhood vitiligo. Homan et al has also suggested that negative childhood experiences led to HRQL impairment and trouble with social development in early adulthood<sup>10</sup>.

A 1986 seminal study by Porter et al reports the adverse impact on an individual's self esteem as a result of vitiligo<sup>11</sup>. It was noted in the study that patients with a higher self esteem were found to have better coping strategies as opposed to patients with lower self-esteem. In this current study, a negative Pearson correlation coefficient of -0.638 between DLQI and RSES indicates that the impact of quality of life has a negative linear link with the patient's self esteem. Thus, when vitiligo affects various domains of a person's life, as shown in figure 1, it also has an adverse effect on self-esteem.

In this present study, the highest scoring domain on DLQI was emotional distress (embarrassment), followed by influence of vitiligo on clothes and social life. The least affected were physical symptoms and work life (mean= 0.176). Sarkar et al further supports this in a 2018 study based in rural eastern India, which suggests that depression, embarrassment, social problem and discomfort are the predominant psychological issues faced by vitiligo patients<sup>12</sup>. Previous research also indicates that psychological stress increases level of neuroendocrine hormones that affects the immune system and alters the level of neuropeptides in the body. This, in turn, initiates that pathogenesis of vitiligo<sup>13</sup>. Thus, emotional distress not only has an impact psychosocially, but is also potentially a factor that has triggered the course of the disease.

### CONCLUSION

Conclusively, results from this study shed a greater light on stigma around childhood vitiligo as it has an adverse impact on the self-esteem and quality of life of patients in adulthood. This will help dermatologists gain a better understanding of the importance of raising awareness around vitiligo in young population. Furthermore, the inverse relationship between RSES and DLQI highlights the need for psychological intervention in these patients. Thus, professional collaboration between psychiatrists and dermatologists should be encouraged to ensure a holistic approach towards these patients.

This study is an initial step in identifying the effect of childhood vitiligo on adulthood. Research on the impact of vitiligo on various ethnicities is currently ongoing.

### Competing Interests

The authors declare that they have no conflict of interests.

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