

Quality of Life of People with Vitiligo: A Brazilian Exploratory Study

Qualidade de Vida de Pessoas com Vitiligo: Um Estudo Exploratório Brasileiro

Calidad de Vida de Personas con Vitíligo: Un Estudio Exploratorio Brasileño

Emerson Araújo Do Bú(1); Maria Edna Silva Alexandre(2); Vitória Medeiros Santos(3)

1 Instituto de Ciências Sociais da Universidade de Lisboa (ICS-UL), Lisboa, Portugal.

Faculdade de Psicologia da Universidade de Lisboa (FP-UL), Lisboa, Portugal.

E-mail: emerson.bu@campus.ul.pt | ORCID: <http://orcid.org/0000-0003-3864-3872>

2 Universidade Federal da Paraíba (UFPB), João Pessoa - Paraíba, Brasil.

E-mail: edna_silva20@hotmail.com | ORCID: <https://orcid.org/0000-0003-3610-7208>

3 Universidade Federal de Campina Grande (UFCG), Campina Grande - Paraíba, Brasil.

E-mail: medeirosvitoria505@gmail.com | ORCID: <https://orcid.org/0000-0002-4319-2597>

Revista de Psicologia da IMED, Passo Fundo, vol. 13, n. 1, p. 264-282, janeiro-junho, 2021 - ISSN 2175-5027

[Submetido: julho 29, 2020; Revisão: agosto 10, 2020

Aceito: agosto 26, 2020; Publicado: agosto 18, 2021]

DOI: <https://doi.org/10.18256/2175-5027.2021.v13i1.4236>

Endereço correspondente / Correspondence address

Emerson Araújo Do Bú

Av. Prof. Aníbal Bettencourt 9, 1600-189, Lisboa, Portugal.

Sistema de Avaliação: *Double Blind Review*

Editores: Jean Von Hohendorff e Ludgleydson Fernandes de Araújo

Como citar este artigo / To cite this article: [clique aqui!/click here!](#)

Abstract

Vitiligo is a dermatological disease characterized by the presence of hypopigmented macules on the skin. Considering that its effects are not limited to the biological dimension of the subject, it is assumed negative impacts on the quality of life of their bearers. Yet, little attention has been giving to this phenomenon in Brazilian studies. This research sought to overcome this gap by verifying the relationship between sociodemographic variables of people with Vitiligo, as well as their perceptions of discrimination and severity of the disease in their qualities of life. It is a quantitative study with a descriptive and exploratory nature, in which 200 Brazilians with Vitiligo participated, most of them female (73%), with white skin colour (50.5%) and predominantly residents of Southeast Brazil (31.02%). For data collection, a sociodemographic questionnaire and the Vitiligo-specific health-related quality of life instrument (VitiQoL) scale were used. Results revealed that female participants, with black skin colour, low income and white patches in areas of easy social perception showed worse rates of quality of life. The findings are discussed with pertinent literature, and it is expected that they contribute to the development of public policies aiming to improve the quality of life of Brazilians with Vitiligo.

Keywords: Quality of Life, Prejudice, Vitiligo

Resumo

O Vitiligo é uma doença dermatológica caracterizada pela presença de máculas hipopigmentadas na pele. Considerando-se que seus efeitos não se limitam a dimensão biológica do sujeito, se supõem impactos negativos na qualidade de vida de seus portadores. Nesse contexto, sabendo-se da incipiência de pesquisas brasileiras que busquem entender aspectos alusivos da qualidade de vida deste público, buscou-se no presente estudo verificar a relação entre variáveis sociodemográficas de pessoas com Vitiligo, assim como suas percepções de discriminação e gravidade da afecção em suas qualidades de vida. Trata-se de um estudo quantitativo de cunho descritivo e exploratório, em que participaram 200 brasileiros com Vitiligo, a maioria do sexo feminino (73%), de cor de pele branca (50,5%) e prevalentemente residentes do Sudeste do Brasil (31,02%). Para a coleta de dados, utilizou-se um questionário sociodemográfico e a escala *Vitiligo-specific health-related quality of life instrument* (VitiQoL). Os resultados apontaram que participantes do sexo feminino, de cor de pele negra, de baixa renda e com acromias em áreas de fácil percepção social demonstraram piores índices de qualidade de vida. Discute-se os achados com a literatura pertinente e espera-se que os mesmos contribuam para o desenvolvimento de políticas públicas de intervenção junto a brasileiros com Vitiligo.

Palavras-chave: Qualidade de Vida, Preconceito, Vitiligo

Resumen

El Vitiligo es una enfermedad dermatológica caracterizada por la presencia de máculas hipopigmentadas en la piel. Considerando que sus efectos no se limitan a la dimensión biológica del sujeto, se suponen impactos negativos en la calidad de vida de sus pacientes. No obstante, conociendo la incipiente investigación brasileña que busca entender aspectos alusivos a la calidad de vida de este público, este estudio buscó verificar la relación entre las variables sociodemográficas de las personas con vitiligo, sus percepciones de discriminación y la gravedad de la condición en su calidad de vida. Consiste en un estudio cuantitativo de carácter descriptivo y exploratorio, en el que participaron 200 brasileños con vitiligo, la mayoría mujeres (73%), de color blanco (50,5%) y predominantemente residentes del sureste brasileño

(31,02%). Los datos se recopilaron mediante un cuestionario sociodemográfico y la escala de calidad de vida relacionada con la salud específica para el Vitiligo (VitiQoL). Resultados mostraron que las participantes del sexo femenino, de piel negra, de bajos ingresos y con manchas en áreas de fácil percepción social demostraron peores índices de calidad de vida. Los hallazgos se discuten con la literatura relevante y se espera que contribuyan al desarrollo de políticas de intervención con brasileños con Vitiligo.

Palabras clave: Calidad de vida, Preconcepción, Vitiligo

Introduction

Vitiligo is a chronic dermatological disease, characterized by the presence of hypopigmented and asymptomatic macules caused by the destruction and/or function loss of the melanocytes in the skin. It is estimated, worldwide, that this skin condition may display prevalence of occurrence in approximately 1% of the population. Moreover, different countries as India, Brazil, and United States verify some discrepancy from this percentage (.5% to 4%) (Boniface et al., 2018; Bonotis et al., 2016; Iannella et al., 2016; Sociedade Brasileira de Dermatologia [SBD], 2017). In Brazil, specifically, a study carried out by the Brazilian Society of Dermatology showed that there is some variance in the prevalence of Vitiligo among the regions in the country, having in the Middle-West (.69%), the Southeast (.66%), and the North (.65%) its highest indices; whereas in the Northeast (.39%), and the South (.40%) the lowest numbers being registered (Sociedade Brasileira de Dermatologia [SBD], 2017).

This affection may present itself in any age group and occur, on average, around the age of 20, having no significant difference in prevalence between sexes. Its progression tends to happen in a centrifugal way, as a local or generalized depigmentation (Boza, 2016; Silva et al., 2011). When local, Vitiligo may be focal (presence of one or more acromic macules that envelop a unilateral segment of the body, frequently following the distribution of a dermatome). When it is generalized, the affection may be acrofacial (presence of typical lesions in the distal part of the extremities and face), vulgar (acromic macules randomly distributed) and mixed (acrofacial and vulgar, segmental and acrofacial and/or vulgar) (Do Bú & Coutinho, 2019).

Although the etiology of this illness is still not a consensus in the literature, some studies correlate its origin to psychosocial factors from the life of the bearer. Stress, in this regard, has been indicated as one of the main components of these factors as it is also linked to the development of other dermatological afflictions, such as acne, psoriasis, and alopecia areata (Dias et al., 2007; Sant'Anna et al., 2003).

Furthermore, starting from the premise that the skin represents a key component of self-confidence, sexual attraction, and the sense of personal satisfaction, being extremely significant for the physical and mental well-being of an individual, it must be highlighted that the pathophysiological alterations in this organ might lead to

psychological consequences, such as, for instance, stress; which compromises, among other things, the quality of life of people who bear Vitiligo (Parsad et al., 2003). Also, Do Bú et al. (2018) point out that people with Vitiligo assimilate discriminatory and prejudiced situations lived by them (due to the affection) as stress and anxiety amplifier; which, consequently, may incite the Vitiligo progression in return.

Consonantly, research on the quality of life and psychological effects of skin diseases in patients points to damages that are linked to self-esteem, body image, and interpersonal relationships (Andrade et al., 2016; Jorge et al., 2004; Neto et al., 2015; Sant'Anna et al., 2003). Damages from self-care behaviour (getting dressed, showering and looking in the mirror) also stand out (Jorge et al., 2004).

When it comes, specifically, to studies regarding Vitiligo, reports evince that approximately 75% of the patients with the affliction possess a psychological disorder (Sarkar et al., 2018). In this regard, aspects such as the unpredictability of the course that the affection progresses, its chronicity and the lack of a uniform treatment to everyone with the disease appear as crucial variables for the low indices of quality of life, as well as to hinder the way to deal with the skin condition. Such effects are especially maximised when it comes to black people with Vitiligo and/or when the acromic patches are localized in areas of the body that are readily perceived by the social surroundings of the subject (Bonotis et al., 2016; Rodrigues et al., 2017).

Therefore, it is valid to emphasize that, beyond the psychological factors; there are also social and cultural aspects to be taken into consideration in the life experience of people with Vitiligo, such as skin colour, gender, religion and nationality (Simons et al., 2020). This is made important once research shows that such factors may aggravate the psychological impacts of the disease, and, consequently, compromise even further the quality of life of the person who bears it (Bonotis et al., 2016; Parsad et al., 2003; Sangma et al., 2015).

Based on what was shown; it becomes evident the potential Vitiligo has to negatively impact the quality of life of its carriers. Given that quality of life is understood as the perception of insertion of a being in its cultural ambience and in the system of values in which they live, its compromise is regarded as worrisome. This is true due to the fact that the former is fundamental to all spheres of life, be it physical, psychological, and social, as well as to personal beliefs and level of independence a person has (Fleck, 2000; The WHOQOL Group, 1995).

Even though the pathophysiology of Vitiligo is widely investigated, studies on psychological effects on the afflicted people are still incipient in the international scope and, especially, in the Brazilian scope (Parsad et al., 2003; Sarkar et al., 2018). Consequently, there is a lack of studies on the incidence and the degree quality of life is compromised to the people with Vitiligo in Brazil, prompting an urgent and further development of new studies. Such studies may, besides guiding the practices

for professionals who deal with patients who bear this skin condition, stimulate the development of health public policies, aiming, among other things, to promote quality of life for this population. On the same topic, considering the aforementioned impacts of the affection, the importance of sociocultural factors to understand the daily experiences of people with Vitiligo, as well as the lack of studies that focus on this; the aim of this study is to verify the relation between socio-demographic variables of people with Vitiligo, their perceptions on social discrimination and the severity of the affliction on their respective qualities of life.

Method

Type of study and participants

This is a quantitative study, with a descriptive and exploratory type; which had a convenience and non-probabilistic sample of 200 Brazilians with Vitiligo. The majority of them were female (73%), white (50.5%), aged between 18 and 28 years (36.5%), had a monthly income from 1 to 2 minimum wages (33.5%), and were residing in the Southeast of Brazil (31.02%). It must be highlighted that the inclusion criteria for the present sample were the following: being over the age of 18; possessing the diagnosis for Vitiligo issued by a dermatologist; and showing availability to participate in the research voluntarily.

Instruments for data collection

For data collection, initially, with the aid of the *Google Forms* tool, an online form was created with the following instruments (1) *Vitiligo-specific health-related quality of life instrument* (VitiQoL); (2) socio-demographic questionnaire.

Later, the link to the form was made available in groups that deal with the theme of Vitiligo on a social network (Facebook), over a period of approximately 30 days, in the year of 2018. Attention must be drawn to the fact that these groups are closed to participants who have Vitiligo and that the participation of the researchers was made possible with the authorization of the moderators, but only after the clarification that the aim was to administrate a questionnaire to this specific public.

VitiQoL, originally developed by Lilly et al. (2013), was adapted and validated to Brazil by Boza et al. (2015). This instrument possesses 15 items that aim to apprehend 3 factors that connect to the quality of life of the person with Vitiligo, i.e.: *Limited Social Participation* – LSP (which refers to the participation limitations of the subject in activities of their social environment, for instance, their daily activities); *Stigma* – STI (which corresponds to the stigma lived by the person in their social environment, for

instance, the shame); and, finally, *Behaviour* – BEH (which is linked to the caretaking attitudes the subject has towards its Vitiligo patches, for instance, solar protection of the achromias); answered on a scale that varies from 0 (nothing) to 6 (all the time). It must be highlighted that the internal consistency for each of the scale factors in this current study was .71 (LSP); .78 (STI); .73 (BEHA). It is also imperative to mention that, aside from the items that compose the aforementioned factors, there was, at the end of the questionnaire, a question that inquired the participant over their own perception on the severity of the affection on a scale from 0 (nothing) to 6 (all the time).

Regarding the socio-demographic questionnaire, it had the aim to characterize the sample, to do so; it utilized questions to access age, sex, income, education, time since Vitiligo diagnosis, and exposure area of the affection. In order to complement the comprehension of the discriminatory processes that relate to Vitiligo, the following question was added to the end of the socio-demographic questionnaire: *how much have you felt discriminated for possessing Vitiligo?* The answer scale of this item varied from 0 (nothing) to 6 (profusely).

Procedure for data analysis

To process the collected data, descriptive analyses were done (average and standard deviation), percentages and confidence interval were set to 95% to characterize the sample. Moreover, inferential statistics were carried out, such as the analysis of variance (ANOVA), analysis of covariance (ANCOVA), and linear correlations (Pearson and Spearman coefficients). All these analyses were carried out using the *Statistical Package for Social Science for Windows* – IBM SPSS (version 26) software.

Ethical aspects

The procedures for data collection followed all ethical recommendations laid down for research with human beings (number of the ruling: 2.190.296), in accordance with Resolution n. 510/2016 of the National Council of Brazilian Health (Ministério da Saúde [MS], 2016), in such a way that the participants were informed about the aim of the study and that the participation was voluntary, also that they could give up at any time in case they manifested any discomfort to answer the instruments. When this was done, it was requested that the participants sign the *Termo de Consentimento Livre e Esclarecido* (Free and Clarified Consent Term) (TCLE), and a copy was sent to their respective emails.

Results

Descriptive analyses

Initially, descriptive analyses will be presented generated from the socio-demographic questionnaire that was administered, in order to get to know the profile of the participants, in accordance with the frequency shown in Table 1. In general terms, the investigated sample was majorly composed of women with white skin (53.4%), with income up to 1 minimum wage (31.5%), time with Vitiligo up to 10 years (42.6%), and type of exposition considered readily perceivable in a social ambience (55.6%).

Table 1. Sociodemographic characteristics of participants with Vitiligo (N=200).

	Variable	Female (%)	Male (%)
Skin colour	White	53.4	42.6
	Black	11.0	11.1
	Brown	32.9	42.6
	Indigenous	2.7	3.7
Income	Until 1 wage	31.5	22.6
	From 1 to 2 wages	27.8	35.6
	From 2 to 3 wages	20.4	20.5
	Higher than 3 wages	20.4	21.2
Time with Vitiligo	Until 10 years	42.6	47.9
	From 11 to 20 years	33.3	21.9
	From 21 to 30 years	13.0	17.1
	Higher than 30 years	11.1	13.0
Exposure area	Easy perception to the social environment	55.6	43.8
	Imperceptible to the social environment	11.1	10.3
	Both perception areas (easy and unnoticeable to the social environment)	33.3	45.9

Note: % = Percentage.

When it comes to the male sex, it is verified a higher percentage of white-skin (42.6%) and brown-skin (42.6%) males, with income ranging from 1 to 2 minimum wages (35.6%), prevalent time with Vitiligo up to 10 years (47.9%), as well as exposition area of the whitened macules readily perceivable in a social ambience (45.9%). Moving onto the descriptive statistics of each one of the items of VitiQoL, displayed in Table 2, it was obtained, respectively, higher averages regarding Vitiligo progression (item 15, $M=4.93$; $SD=1.99$), discomfort (item 1, $M=4.65$; $SD=1.93$), frustration (item 2, $M=4.59$; $SD=2.04$), and shame (item 7, $M=4.19$; $SD=2.27$) for having the illness. All these elements displayed an average above 4.00.

Table 2. Descriptive Statistics for VitiQoL Items (n = 200).

Items	<i>M</i>	<i>SD</i>	CI (95%)	
1. Inconvenience	4.65	1.93	4.36	4.92
2. Frustration	4.59	2.04	4.29	4.87
3. Affective Difficulty	2.60	2.55	2.24	2.95
4. Daily Activities	2.17	2.27	1.89	2.51
5. Concern with the thoughts of others	3.68	2.45	3.35	4.02
6. Fear of criticism	3.67	2.43	3.34	4.01
7. Shame	4.19	2.27	3.89	4.50
8. How to dress	2.74	2.60	2.41	3.12
9. Social and leisure activities	2.84	2.43	2.53	3.20
10. Physical well-being	2.91	2.37	2.59	3.25
11. General physical health	2.31	2.24	2.02	2.63
12. Cares with the appearance	2.77	2.53	2.42	3.15
13. Sun protection	3.93	2.31	3.60	4.24
14. New friends	1.56	2.18	1.26	1.86
15. Disease progression	4.93	1.99	4.65	5.22

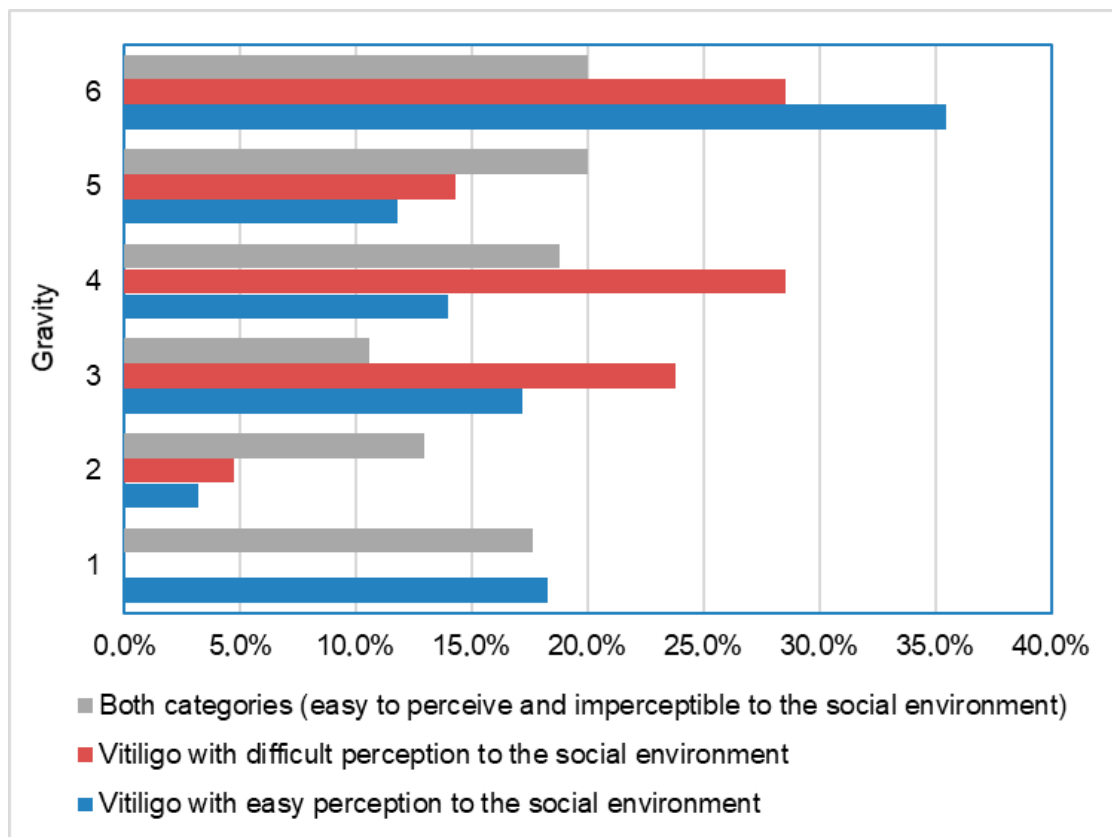
Note: Scores between 0 and 6; *M* - average; *SD* - Standard Deviation; CI (95%) - 95% Confidence Interval.

Association among categorical variables (nominal)

Aiming to verify if there was any association among the categorical socio-demographic variables of the current study, Pearson's chi-squared tests were carried out. Among the expected correlations from the pertinent literature, it could be observed that the exposition area of Vitiligo and the perception of severity to having the affection were associated [$X^2(10) = 19.98; p = .02$]. Thus, it was observed that among people who possess Vitiligo that is exposed, the majority (35.5%) pointed to the highest severity degree (6), whereas, in relation to the people that possess both types of exposition (readily spotted and imperceptible in a social ambience), the majority (40%) indicated severity levels of 5 and 6.

This all reveals that if the participant has exposed patches or from both categories (readily spotted and imperceptible in a social ambience), they have a superior perception of the severity of having Vitiligo. It is worth mentioning that there was no significant p-value for the following associations: exposition area of Vitiligo and participants' sex; sex and severity perception of the affliction; as well as exposition area of Vitiligo and time having the affection.

Figure 1. Association between the Vitiligo exposure and the perception of gravity for having the disorder.



Analysis of Variance and Analysis of Covariance

Aiming to compare the averages for quality of life from VitiQoL in accordance with the socio-demographic variables from the participants of the current study, the analysis of variance (ANOVA) and analyses of covariance (ANCOVA) were carried out. These results may be visualized in Table 3.

From ANCOVA, the factors for quality of life that relate to the socio-demographic variables were compared, keeping the effect of the other related variables under control. As a result, it was verified the statistically meaningful difference in the LSP factor when it comes to the income of the participants [$F(3.195) = 2.67; p = .048$]; when the effect of education level was controlled. Tukey's post hoc test evinced that people who have a lower income feel more socially limited when compared to people with a greater one, i.e., between 3 and 4 minimum wages ($p = .03$) and above 4 salaries ($p = .012$).

Table 3. Descriptive statistics of quality of life according to sociodemographic variables.

Variables	Limited Social Participation		Stigma		Behaviour	
	M	SD	M	SD	M	SD
Sex						
Male	2.52	1.83	4.18	2.00	3.36	1.72
Female	2.60	1.88	4.49	1.63	3.06	1.99
Age						
18-28 years	2.69	1.83	4.46	1.63	3.15	1.97
29-39 years	2.59	1.77	4.43	1.73	2.85	1.95
40-50 years	2.45	1.88	4.41	1.83	3.28	1.88
Higher than 50 years	2.49	2.45	3.97	2.02	3.75	1.63
Skin colour						
White	2.50	1.79	4.44	1.69	3.23	1.72
Black	2.79	1.84	4.75	1.31	2.50	2.37
Brown	2.59	1.94	4.34	1.79	3.19	2.02
Indigenous	2.93	2.58	3.30	2.93	3.44	2.04
Education level						
Elementary	2.70	2.09	3.96	2.23	3.40	1.84
Higher education	2.59	1.78	4.44	1.69	2.95	2.10
Postgraduate	2.51	1.88	4.56	1.53	3.25	1.73
Income						
Until 1 wage	3.15	1.92	4.72	1.83	3.65	1.91
From 1 to 2 wages	2.58	1.85	4.29	1.80	2.91	1.87
From 2 to 3 wages	2.30	1.68	4.44	1.61	3.22	1.98
Higher than 3 wages	2.17	1.89	4.18	1.64	2.84	1.87
Patches exposure						
Exposed Vitiligo	2.62	1.91	4.39	1.81	3.12	1.87
Imperceptible Vitiligo	2.62	1.86	4.40	1.45	3.46	1.93
Both	2.52	1.83	4.43	1.73	3.09	1.98
Time with Vitiligo						
Until 10 years	2.51	1.86	4.46	1.62	2.90	1.89
From 11 to 20 years	2.59	1.72	4.48	1.69	3.30	1.66
From 21 to 30 years	2.30	1.89	4.27	1.83	3.06	2.10
Higher than 30 years	3.14	2.09	4.23	2.14	3.87	2.16

Note: M – Mean; SD - Standard Deviation.

Moving onto the matter where the participant was questioned on their perception in face of the severity of possessing Vitiligo (*Please, assess how serious, in accordance with your conceptions, is the fact that you possess Vitiligo?*), the statistically meaningful difference in relation to income stands out [$F(1,195) = 3.03; p = .030$], when the effect of patch exposure was controlled [$F(3,194) = 3.30; p = .021$]. Tukey's post hoc test indicated differences between lower and higher income; which implies that the

participants of this study who have an income between 1 and 2 minimum wages presented a greater perspective of the gravity of possessing Vitiligo when compared to those who earned salaries above 4 minimum wages ($M = 4.36$; $SD = 1.78$).

Bivariate Correlations

The relation between the following study variables was also sought after: factors for quality of life, socio-demographic characteristics, and perceptions on discrimination and severity of possessing Vitiligo. The factors for quality of life were correlated to the socio-demographic variables, through Spearman's R coefficient (r_s).

Results of this analysis evinced, through partial correlation, a negative linearity in the relations between income and LSP ($r_s = -.19$; $p = .007$), and income and STI ($r_s = -.15$; $p = .03$), both done controlling the effect of education level. In this sense, a direction of the correlation was observed; which indicates that the lower the income is, the higher the limitation of social participation of people with Vitiligo is, as well as the stigma suffered by them.

Moreover, the perception of discrimination that was sustained, was positively and moderately correlated to the LSP ($r = .43$; $p < .001$) and to the STI ($r = .33$; $p < .001$), as well as in a positively and low manner to the BEH ($r = .20$; $p = .003$). This correlation brought along an indication that the more profusely discrimination is perceived by the participants of this current study, the higher the limitation in social interactions is presented, as well as the stigma sustained and the self-care behaviours in regards of the sun and to conceal the white patches.

When separately evaluated by skin colour, the correlation was greater for black participants to the LSP ($r = .56$; $p = .007$) and STI ($r = .52$; $p = .012$) factors. Such result signals to the fact that the subjects who have black skin colour feel even more restricted when developing social interactions, not only that, but they sustain more the stigma when compared to people who have other skin tones. Moreover, there was also a search to identify the correlations between the factors for quality of life, evinced by VitiQoL and the sex of the participants of this study. Table 4 presents such correlations in detail.

Table 4. Correlations according to participants' gender of participants.

Variables	Male (N = 54)			Female (N = 145)		
	PSL	EST	COMP	PSL	EST	COMP
Education level	.04	.10	.06	-.06	-.04	.00
Income	-.18	-.07	.04	-.20*	-.18*	-.17*
Time with Vitiligo	-.11	-.17	-.06	.10	.07	.20*
Discrimination	.40*	.28*	-.19	.43*	.41*	.19*
Gravity	.58*	.57*	.57*	.53*	.56*	.41*

Note. LSP (Limited Social Participation); STI (Stigma); BEH (Behaviour).

According to Table 4, to men, meaningful correlations were observed for the perception of discrimination and the LSP ($r = .40$; $p = .002$) and the STI ($r = .28$; $p = .030$); which signals the higher the perception of discrimination is, the higher the limitation to social participation and the stigma sustained are. In a similar way, their perception in relation to the gravity of Vitiligo was positively correlated to all VitiQoL factors: LSP ($r = .58$; $p < .001$), STI ($r = .57$; $p < .001$) and BEH ($r = .57$; $p < .001$). Thus, it seems that the more discriminated they are, the higher their perception of the gravity of possessing Vitiligo is; which interferes not only with established social relationships, but also with stigma, and their behaviour in face of the affection.

Discrimination perceived by the women also presented positive correlation with all factors for quality of life: LSP ($r = .43$; $p < .001$), STI ($r = .41$; $p < .001$) and BEH ($r = .19$; $p < .001$). This indicates the higher their perception of discrimination is, the higher the scores of limitations of social participation, perceived stigma, and behaviour developed to face the disease are.

Feminine perception of gravity also correlates to LSP ($r = .53$; $p < .001$), STI ($r = .53$; $p < .001$) and BEH ($r = .41$; $p < .001$). Therefore, this analysis suggests that the lower the income of these women is, the higher the impact in social interactions and stigma experienced for having Vitiligo is.

Still, in regards to the feminine sample, it was also observed a low and significant correlation between time since diagnosis and the BEH ($r = .20$; $p = .01$) factor. Thus, the shorter the time since diagnosis, the greater the care the women give to the white Vitiligo patches due to the sun, as well as the use of camouflage.

Finally, there was a search to verify the correlation between time since diagnosis and discrimination of the participants. In accordance, it was identified a positive correlation between time since diagnosis and discrimination ($r_s = .18$; $p < .05$); which indicates that the longer the time with Vitiligo, the more the participants of this study consider having experienced discrimination.

In general terms, the descriptive analyses, of variance and covariance, as well as the correlation tests allow the enlargement of the comprehension of what the socio-demographic variables, the perception of discrimination, and the quality of life of people with Vitiligo implicate. Specifically, the descriptive analyses revealed the socio-demographic profile of the public in focus, as well as the type of patch exposition of Vitiligo and the time since they have been acquired; not only that, but such analyses evince the items that are most valued from VitiQoL in regards of the quality of life of people with Vitiligo. Concerning the correlation tests, they substantiate the comprehension of the direction of the associations among variables, including, from the control of the effect of one over the others. In accordance with this, it was compiled a set of possible explanations to these associations, and it was found, for some cases, as it will be discussed next, support from the pertinent literature. For that matter, for a clear exposition of such findings, a discussion will follow in accordance with the order that the results were presents in this study.

Discussion

The descriptive statistics of the items of the VitiQoL scale pointed to higher averages for the items Vitiligo progression, discomfort, frustration, and shame for having the skin disease. In this case, factors like the chronicity of the disease, its unpredictable course and the lack of a uniform treatment may be connected to the higher averages for the items Vitiligo progression and frustration.

Still, regarding the elements of the VitiQoL scale that stand out, there is discomfort as the one with one of the highest scores. This item's highlight is justifiable when the skin is considered a sensorial organ that responds to emotional stimuli, and its appearance has a major influence in the body's self-image and the self-esteem (Gupta & Voorhees, 1990); also, this same item appears as one of the highest scores in a study developed by Morales-Sánchez et al. (2017). Furthermore, there was an expectation for the item shame to have one of the highest scores as well, as many factors may contribute to the people bearing the affliction to feel embarrassed, for instance, the lack of information of the general public on the aetiology of the disease. Concerning this, many people believe it is an infectious disease (e.g. leprosy) and that it is caused by the lack of hygiene (AlGhamdi et al., 2012).

The chi-square tests among the categorical (nominal) variables indicate that if the participant possesses exposed patches and/or from both categories (readily perceived and imperceptible in a social ambience), there is a higher perception of the severity of having Vitiligo. On that matter, international literature has shown that the quality of life of Vitiligo bearers is significantly affected by the extension of the disease on the body surface (Shah & Coates, 2006; Wong & Baba, 2012). Researchers have shown that patients presented worse quality-of-life scores in the Dermatology Life Quality Index (DLQI) when they possessed acromic patches in exposed areas of their body (Wong & Baba, 2012). In this regard, the impact the exposition area of the affection has in the quality of life of the bearers may justify the reason why they consider that the more perceptible the patches are, the more severe having the disease is.

When it comes to the analyses of variance and covariance, they revealed an association between people who have lower income and the Limited Social Participation (LSP), and between people who have a lower income and a higher perception of the severity about having Vitiligo. Albeit the literature has not presented results that correlate income specifically with the aforementioned factors, some studies point out that the socioeconomic status is one of the elements responsible for hampering the adaptations of Vitiligo bearers, as well as their social interactions, also being linked to a higher perception of discrimination (Porter & Beuf, 1998). Moreover, the possible lack of resources for specific treatments or alternative therapies is a possible hypothesis that explains the fact participants who have lower income have a worsened perception of the severity of having Vitiligo.

The bivariate correlations also indicated that lower incomes may relate to a greater limitation of social participation for people with Vitiligo and also to the stigma (STI) sustained by them. The correlation between lower income and STI may be consonant to explanations connected to the LSP factor. It is still valid to draw attention to the relations between lower income and the LSP and STI factors as they may also be linked to other typical impossibilities that refer to the economical matter and not necessarily to the fact of possessing Vitiligo.

Regarding the other results that refer to bivariate correlations, it is noticeable that, in the same vein as the data that was previously discussed, the more discrimination there is, the greater the limitation to interact between pairs, the stigma perceived, and the behaviours to camouflage the patches of the participants of the current study are. Upon the separation of the participants in groups regarding skin colour, the correlation was higher in the black participants for the LSP and STI factors. This result is in accordance with other studies that demonstrate higher scores for the DLQI; which indicates that lower quality of life is associated with darker skin, as there is a more distinct contrast with the white patches, thus drawing more social attention; which, by the way, unfolds into more disturbing and stressing situations (Porter & Beuf, 1998; Karelson et al., 2013).

Upon the analysis of the results focusing on sex of the participants of this study, it was verified that the correlation between perception of severity and the factors of the VitiQoL was similar for both men and women. However, the correlation between discrimination and the factors of VitiQoL was stronger to women, having a substantial difference when it came to the factor Behaviour (BEH). To the women, income was also a significant element that correlates to every aspect of VitiQoL. Moreover, the women also presented a correlation between time since diagnosis with the BEH factor; which indicates that the shorter the time since diagnosis, the greater the care and the use of camouflage on the white patches.

This discrepancy between sexes can be explained by the more pronounced social pressure on women when it comes to the use of cosmetics, appearance, and beauty (Do Bú et al., 2018). As Vitiligo causes visible lesions on the skin, it is understandable that women, who are more socially coerced to improve their appearance (Simons et al., 2020), sustain more pressure in the aspects of the behaviour factor and seek, for instance, to camouflage their patches with cosmetics and/or clothes.

Another aspect to be highlighted, still regarding the use of camouflage and the care for the skin that these women take, refers to the fact that the patches provoked by Vitiligo do not contain melanocytes (the cells responsible for the production of melanin), hence, in a more recurring manner these areas are more prone to skin cancer. Moreover, it is noteworthy that, culturally, women demonstrate more behaviours to prevent diseases and for health promotion, in comparison to men (Ministério da Saúde [MS], 2017).

Final Considerations

The set of analyses in this study enabled the knowledge on relations among the variables that were studied by providing a wide panorama; which can subsidize both the development of complementary researches, as well as the targeting of healthcare and protective actions concerning people with Vitiligo. Generally speaking, this study revealed that the perception of the quality of life of the participants varied according to their socio-demographic characteristics, as well as their perceptions of the severity and discrimination for having Vitiligo.

This study also seems to make a relevant social accusation, as the participants that demonstrated the worst indices for quality of life were the ones that historically fit as social minorities (low income, black skin, and female sex). These are worrisome data, as the presence of Vitiligo, associated with these socio-demographic characteristics, may end up being an aggravator to social discrimination towards one part of the population. It is also highlighted that the discriminatory processes that involve people with Vitiligo have already been observed due to historical factors, as it is associated in the social imaginary with leprosy.

Based on the exposed, we hope that the current study contributes to the development of public policies that consider the aforementioned aspects. It is advisable, for instance, that such policies foment strategic actions focused on informing the population about Vitiligo, effecting the deconstruction of prejudice and, consequently, the reduction of social discrimination towards this population. Due to the ascertainment that the perceptions of severity and discrimination, due to the fact that they have Vitiligo, negatively affect the quality of life, it is deemed necessary that these policies develop an agenda geared towards the improvement of the well-being and the quality of life of these people.

Therefore, this research sets a milestone in the Brazilian context, as it is a pioneer when it investigates the relationship between these sets of variables and when, above all, points to the urgency of a systematized and specific approach towards people with Vitiligo. Thus, the time is anticipated when the individual with Vitiligo is recognized by not only their skin condition but as someone involved in a social plot that determines the quality of life of their condition of being in the world.

Finally, aiming to broaden the spectrum of comprehension of the data that were discussed; it is suggested that future researches seek to widen, equalize and homogenize the samples of the participants, be it regarding sex (as the current study dealt majorly with women, and, thus, it was impractical to do better comparisons between men and women), be it regarding the region of the country (as the participants here were mainly from the south-eastern region).

Besides these matters of methodological organization, new studies can search: to investigate matters linked to the stigma and discrimination from people without

Vitiligo towards people with Vitiligo; to verify aspects connected to self-esteem, self-concept and the quality of life of people with Vitiligo; to explore a possible relation between the variables of being the carrier of Vitiligo and stress; to identify if there are variations in the perception of discrimination of people with Vitiligo according to the type of social environment; as well as to know confrontational strategies utilized by people with Vitiligo against the perceived discrimination.

References

- AlGhamdi, M. K., Moussa, N. A., AlKofidi, A. M., Madani, A., AlDaham, N., & AlKamel, A. A. (2012). Public Perceptions and Attitudes Toward Vitiligo. *Journal of Cutaneous Medicine and Surgery*, 16(5), 334-340. doi: <https://doi.org/10.1177/120347541201600510>
- Andrade R. R., Coelho, A.B., Pinto, J. M. D. (2016). Avaliação do paciente com vitiligo frente às representações sociais acerca da doença. *Revista UNILUS Ensino e Pesquisa - RUEP*, 13(13), 58–62. Retrieved from <http://revista.unilus.edu.br/index.php/ruep/article/view/735>
- Boniface, K., Seneschal, J., Picardo, M., & Taïeb, A. (2018). Vitiligo: Focus on Clinical Aspects, Immunopathogenesis, and Therapy. *Clinical Reviews in Allergy and Immunology*, 54(1), 52–67. doi: <https://doi.org/10.1007/s12016-017-8622-7>
- Bonotis, K., Pantelis, K., Karaoulanis, S. Katsimaglis, C., Papaliaga, M., Zafirious E., & Tsogas, P. (2016). Investigations of factors associated with health-related quality of life and psychological distress in vitiligo. *Journal der Deutschen Dermatologischen Gesellschaft*, 14(1), 45-9. doi: <https://doi.org/10.1111/ddg.12729>
- Boza, J. C., Kundu, R. V., Fabbrin, A., Horn, R., Giongo, N., & Cestari, T. F. (2015). Translation, cross-cultural adaptation and validation of the vitiligo-specific health-related quality of life instrument (VitiQoL) into Brazilian Portuguese. *Anais Brasileiros de Dermatologia*, 90(3), 358-362. doi: <https://doi.org/10.1590/abd1806-4841.20153684>
- Boza, J. C. (2016). *Qualidade de vida em pacientes adultos e pediátricos com vitiligo: estudo baseado em questionários de qualidade de vida genéricos e específicos*. Tese. Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brasil. Retrieved from <https://lume.ufrgs.br/handle/10183/143643>
- Dias, H. Z. J., Rubin, R., Dias, A. V., & Gauer, G. J. C. (2007). Relações visíveis entre pele e psiquismo: um entendimento psicanalítico. *Psicologia Clínica*, 19(2), 23-34. doi: <https://doi.org/10.1590/S0103-56652007000200002>
- Do Bú, E. A., Alexandre, M. E. S, Scardua, A., & Araújo, C. R. F. (2018). Vitiligo as a psychosocial disease: apprehensions of patients imprinted by the white. *Interface - Comunicação, Saúde, Educação*, 22(65), 481-491. doi: <https://doi.org/10.1590/1807-57622016.0925>
- Do Bú, E. A., & Coutinho, M. P. L. (2019). Representational structure of Vitiligo: non-Restrictive Skin Marks. *Trends in Psychology*, 27(3), 615-629. doi: <https://doi.org/10.9788/TP2019.3-02>
- Fleck, M. P. A. (2000). O instrumento de avaliação de qualidade de vida da Organização Mundial da Saúde (WHOQOL-100): características e perspectivas. *Ciência & Saúde Coletiva*, 5(1), 33-38. doi: <https://doi.org/10.1590/S141381232000000100004>
- Gupta, M. A., & Voorhees, J. J. (1990). Psychosomatic dermatology: is it relevant? *Arch Dermatol*, 126(1), 90-93. doi: <https://doi.org/10.1001/archderm.1990.01670250096016>

- Iannella, G., Greco, A., Didona, D., Didona, B., Granata, G., Manno, A., ... & Magliulo, G. (2016). Vitiligo: Pathogenesis, clinical variants and treatment approaches. *Autoimmunity Reviews*, 15(4), 335–343. doi: <https://doi.org/10.1016/j.autrev.2015.12.006>
- Jorge, H. Z., Müller, M. C., Ferreira, V. R. T., & Cassal, C. (2004). Pacientes portadores de dermatoses: relações iniciais e auto-agressividade. *PSIC*, 5(2), 22-25. Retrieved from http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1676-73142004000200004
- Karelson, M., Silm, H., & Kingo, K. (2013). Quality of Life and Emotional State in Vitiligo in an Estonian Sample: Comparison with Psoriasis and Healthy Controls. *Acta Dermo Venereol*, 93(4), 446-450. doi: <https://doi.org/10.2340/00015555-1520>
- Lilly, E., Lu, P. D., Borovicka, J. H., Victorson, D., Kwasny, M. J., West, D. P., & Kundu, R. V. (2013). Development and validation of a vitiligo-specific quality-of-life instrument (VitiQoL). *Journal of the American Academy of Dermatology*, 69(1), e11-e18. doi: <https://doi.org/10.1016/j.jaad.2012.01.038>
- Ministério da Saúde. (Brasil). (2017). Secretaria de Vigilância em Saúde. Departamento de Vigilância de Doenças e Agravos não Transmissíveis e Promoção da Saúde. Diário Oficial da União. Brasília: MS. Retrieved from https://bvsms.saude.gov.br/bvs/publicacoes/vigitel_brasil_2017_vigilancia_fatores_riscos.pdf
- Ministério da Saúde. (Brasil). (2016). Resolução nº 510, de 7 de abril de 2016. Estabelece as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Diário Oficial da União. Brasília: MS. Retrieved from http://www.in.gov.br/materia/-/asset_publisher/Kujrw0TZC2Mb/content/id/22917581
- Morales-Sánchez, M. A., Vargas-Salinas, M., Peralta-Pedrero, M. L., Olguín-García, M. G., & Jurado-Santana, F. C. (2017). Impact of Vitiligo on Quality of Life. *Actas Dermosifiliorg*, 108(7), 637-642. doi: <https://doi.org/10.1016/j.ad.2017.03.007>
- Neto, A. T. M., Silva, V. S., Rodrigues, M. D., & Pinto, F. O. (2015). Vitiligo: O Problema Que Não Está Apenas Na Pele. *Reinpec*, 1(2), 250–288. doi: <https://doi.org/10.20951/2446-6778/v1n2a18>
- Parsad, D., Dogra, S., & Kanwar, A. J. (2003). Quality of life in patients with vitiligo. *Health and Quality of Life Outcomes*, 1(1), 58. doi: <https://doi.org/10.1186/1477-7525-1-58>
- Porter, R. J., & Beuf, A. H. (1988). Response of older people impaired appearance: the effect of age on disturbance by Vitiligo. *Journal of Aging Studies*, 2(2), 167-181. doi: [https://doi.org/10.1016/0890-4065\(88\)90031-X](https://doi.org/10.1016/0890-4065(88)90031-X)
- Rodrigues, M., Ezzedine, K., Hamzavi, I., Pandya, A. G., & Harris, J. E. (2017). New discoveries in the pathogenesis and classification of vitiligo. *Journal of the American Academy of Dermatology*, 77(1), 1–13. doi: <https://doi.org/10.1016/j.jaad.2016.10.048>
- Sangma, L. N., Nath, J., & Bhagabati, D. (2015). Quality of life and psychological morbidity in vitiligo patients: a study in a teaching hospital from North-East India. *Indian Journal of Dermatology*, 60(2), 142-6. doi: https://doi.org/10.4103/0019_5154.152508

- Sant'Anna, P. A., Giovanetti, R. M., Castanho, A. G., Bazhuni, N. F. N., & La Selva, V. A. (2003). A expressão de conflitos psíquicos em afecções dermatológicas: um estudo de caso de uma paciente com vitiligo atendida com o jogo de areia. *Psicologia: Teoria e Prática*, 5(1), 81-96. Retrieved from <http://editorarevistas.mackenzie.br/index.php/ptp/article/view/1183>
- Sarkar, S., Sarkar, T., Sarkar, A., & Das, S. (2018). Vitiligo and psychiatric morbidity: a profile from a vitiligo clinic of a rural-based tertiary care center of eastern India. *Indian Journal of Dermatology*, 63(4), 281-284. doi: https://doi.org/10.4103/ijd.IJD_142_18
- Shah, M., & Coates, M. (2006). An assessment of the quality of life in older patients with skin disease. *British Association of Dermatologists*, 154, 150-3. doi: <https://doi.org/10.1111/j.1365-2133.2005.06959.x>
- Silva, A., Castoldi, L., & Kijner, L. C. (2011). A pele expressando o afeto: Uma intervenção grupal com pacientes portadores de psicodermatoses. *Contextos Clínicos*, 4(1), 53-63. doi: <https://doi.org/10.4013/ctc.2011.41.06>
- Silverberg, N. B. (2015). The Epidemiology of Vitiligo. *Current Dermatology Reports*, 4(1), 36-43. doi: <https://doi.org/10.1007/s13671-014-0098-6>
- Simons, R. E., Zevy, L. D., & Jafferany, M. (2020). Psychodermatology of Vitiligo: Psychological impact and consequences. *Dermatologic Therapy*, 33(3). doi: <https://doi.org/10.1111/dth.13418>
- Sociedade Brasileira de Dermatologia. (2017). *Sociedade Brasileira De Dermatologia Alerta A População A Procurar Um Dermatologista Sempre Que Perceber Alguma Mancha Branca Na Pele*. Rio de Janeiro: SBD. Retrieved from <http://www.sbd.org.br/noticias/25-de-junho-dia-mundial-do-vitiligo>
- The WHOQOL Group. (1995). The World Health Organization of life assessment (WHOQOL): position paper from the World Health Organization. *Social Science and Medicine*, 41(10), 1403-1409. doi: [https://doi.org/10.1016/0277-9536\(95\)00112-K](https://doi.org/10.1016/0277-9536(95)00112-K)
- Wong, S., & Baba, R. (2012). Quality of life among Malaysian patients with vitiligo. *Journal International of Dermatology*, 51, 158-161. doi: <https://doi.org/10.1111/j.1365-4632.2011.04932.x>