Knowledge and Attitude of General Public towards Vitiligo: A Cross-Sectional Survey in Kashmir

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Abstract

Vitiligo, a chronic skin condition characterized by depigmented patches, has profound psychological and social implications for those affected. This cross-sectional survey aims to assess the knowledge and attitudes of the general public towards vitiligo in the Kashmir region. Despite its relatively high prevalence, misconceptions and stigma surrounding the disease persist, impacting the quality of life of individuals with vitiligo.

The study employed a structured questionnaire, administered to a representative sample of the population in Kashmir. The questionnaire included sections on demographic information, knowledge about vitiligo, sources of information, and attitudes towards individuals with the condition. Data were analyzed using descriptive statistics and inferential analysis to identify significant correlations between demographic factors and levels of knowledge and attitude.

Results indicated a moderate level of awareness about vitiligo among the general public. While most respondents recognized vitiligo as a non-contagious condition, a significant portion still held misconceptions, such as attributing it to supernatural causes or poor hygiene. Sources of information predominantly included television, internet, and word-of-mouth, with healthcare professionals playing a lesser role in public education. Attitudes towards individuals with vitiligo varied, with a notable proportion of respondents expressing sympathy and support. However, instances of social avoidance and discrimination were also reported, highlighting the need for improved public education and awareness campaigns. The findings suggest that enhancing the role of healthcare professionals in disseminating accurate information and addressing cultural beliefs could mitigate stigma and improve social acceptance.

In conclusion, while there is a reasonable level of awareness about vitiligo in Kashmir, persistent misconceptions and negative attitudes underline the necessity for targeted educational interventions. By fostering a more informed and empathetic public, these initiatives could significantly enhance the quality of life for individuals living with vitiligo in the region.

Keywords: Anxiety • Depression • Vitiligo patients • Contagious • Sociodemographic • Community workshops

Introduction

Vitiligo is a long-lasting autoimmune disease that affects the skin. It can result in areas of the skin losing their natural colour, leaving them depigmented while the rest of the skin appears normal. This condition can affect people of all genders and ages. Historically, diseases that visibly impact the skin are associated with social stigma, and vitiligo is no exception. Research has shown that individuals with vitiligo often experience a significant decrease in their quality of life [1]. In one study conducted at a medical school in Saudi Arabia, vitiligo patients reported a severe decline in their quality of life. Another study even suggested that the impact on their quality of life could be comparable to that experienced by cancer patients. Anxiety and depression are common among vitiligo patients, leading to a further decline in their quality of life [2,3]. A study conducted in Iran found that 72% of vitiligo patients experienced depression, with most cases being mild to moderate. Anxiety was also prevalent, affecting nearly 40% of patients [4]. A meta-analysis of 15 studies involving 1176 vitiligo patients indicated that approximately 36% experienced general anxiety [5,6].

Public perception and attitudes toward vitiligo are crucial factors affecting the psychological well-being of patients [7]. A study in Germany found that 90% of vitiligo patients were questioned or approached about their condition, with 24% facing hurtful comments. Many patients reported engaging in avoidance behaviours or trying to conceal their white patches. Even among school-age children in Saudi Arabia, misconceptions about vitiligo were prevalent. These misconceptions included beliefs that vitiligo was related to diet, calcium deficiency, iron deficiency, infectious diseases, chickenpox, precancerous conditions, and incurability [8]. While some studies in Saudi Arabia showed sufficient knowledge about vitiligo, others found low awareness levels. Common misconceptions identified in previous studies included the mistaken belief that vitiligo is contagious or caused by an infection. Some individuals even associated vitiligo with witchcraft and evil spirits [9]. Studies also revealed that individuals with better knowledge of vitiligo tended to have more positive attitudes toward those affected by the condition [10].

Since there is a need for studies addressing the knowledge and attitudes of Kashmiris towards vitiligo, our study aims to be the first to investigate these aspects. This research is significant because it can help identify and address misconceptions and negative attitudes, ultimately improving the quality of life for vitiligo patients in Kashmir valley.

Need: As per the review literature, over the past decade, there has been a noticeable scarcity of research on vitiligo, particularly in the Kashmir Valley. This research gap has resulted in a lack of awareness and understanding about vitiligo among the local population, leading to challenges such as stigmatization and heightened stress for individuals affected by the condition. The primary objective of this study is to assess the knowledge people in Kashmir Valley have about vitiligo and their attitudes toward it. Beyond simply collecting data, the ultimate aim is to bring about positive change. We intend to formulate specific action plans and disseminate information effectively to improve vitiligo awareness in the region. By achieving this, we aspire to create a more compassionate and inclusive society for individuals with vitiligo. Furthermore, this project has the potential to provide valuable insights for healthcare professionals and policymakers, enabling them to make informed decisions and implement strategies that better support people with vitiligo in Kashmir.

Materials and Methods

Study design: Our cross-sectional study involved 386 participants from the Kashmiri population who completed a self-administered online questionnaire from April-July 2023. The questionnaire used in this study was adapted from a survey conducted by [2,11]. Permission was obtained to use the questionnaire, and slight modifications were made to align it with our research context. Questionnaire comprised four sections:

Sociodemographic characteristics: The first section gathered information on participants' gender, age, residence, marital status, education, and occupation.

Previous exposure to vitiligo: The second section assessed participants' exposure to vitiligo through four questions, covering awareness of vitiligo, source of information, age onset, and susceptible people to vitiligo.

Knowledge of vitiligo: The third section included 14 questions to evaluate participants' knowledge of the disease. Responses were categorized as "Yes, (1)" and "No (0)." These questions covered various aspects of the disease, including its nature (contagiousness, heredity, autoimmune nature, hygiene, systemic involvement, food-related triggers, lethality, and associations with psychological distress, magic, or witchery).

Attitudes toward vitiligo: The fourth section assessed participants' attitudes toward vitiligo using eight statements to gauge their agreement. Response options were "Yes" (1) and "No" (0). These statements addressed attitudes like sharing food, forming friendships, handshakes, hiring decisions, and intimate relationships.

To better understand the participants' knowledge about vitiligo, this was categorized into three knowledge groups: Poor knowledge (0–3 points), average knowledge (4–6 points), and good knowledge (7–9 points). Similarly, attitudes were classified into positive (5-6), neutral (3-4) and negative (0-2) categories.

The minimum required sample size was 147 (134+10% NRR), calculated by using the 'sample size determination in health studies' software of the World Health Organization, at a prevalence of 9%, confidence level of 95%, design effect of 1.5 and bound on the error of 5%, The prevalence of vitiligo in India has been invariably reported between 0.25% and 4% of dermatology outpatients across studies from India and up to 8.8% in Gujarat and Rajasthan [12]. Data was collected anonymously on various social media platforms, including Facebook, WhatsApp, and Instagram. Participants were ensured privacy throughout the process, and consent was obtained from all participants before they proceeded with the questionnaire by clicking "Start the questionnaire."

Data analysis

The data was imported into the Epi Data® software version 3.1 and analysed employing SPSS® version 26. Frequency distributions and percentages depict categorical variables, while measures of central tendency and dispersion for continuous variables. To examine associations between variables, we conducted independent T-tests and chi-square tests. A statistically significant result was a p-value equal to or less than 0.05.

Results

Description of demographic and previous exposure profile

This section describes the demographic characteristics of the sample under study. The data obtained describes the characteristics including; gender, age, residence, marital status, education, occupation (Table 1).

Table 1. Demographic profile of the subjects.

Variables	Opts	Percentage (%)	Frequency (f)
Gender	Male	39.90%	154
	Female	60.10%	232
Age	15-24 years	46.40%	179
	25-34 Years	30.30%	117
	35-44 Years	13.00%	50
	45 Years and above	10.40%	40
Residence	Urban	29.00%	112
	Rural	71.00%	274
Marital status	Married	32.40%	125
	Unmarried	67.60%	261
Education	Primary	9.60%	37
	Secondary	15.00%	58
	UG	47.20%	182
	PG	28.20%	109
Occupation	Student	63.00%	243
	Home maker	10.60%	41
	Other	19.20%	74
	Unemployed	7.30%	28

Gender: 154 participants (39.9%), Female: 232 participants (60.1%). In this study, a slightly higher percentage of female participants (60.1%) were surveyed compared to males (39.9%).

Age: 15-24 years: 179 participants (46.4%), 25-34 years: 117 participants (30.3%), 35-44 years: 50 participants (13.0%), 45 years and above: 40 participants (10.4%). The age distribution of the participants revealed that the majority (46.4%) fell within the 15-24 years' age group, indicating a predominantly young population.

Residence: Urban: 112 participants (29.0%), rural: 274 participants (71.0%). The study's urban-rural divide indicated that 71.0% of the participants resided in rural areas, while 29.0% lived in urban areas.

Marital status: Married: 125 participants (32.4%), unmarried: 261 participants (67.6%). The distribution of marital status showed that most of the respondents were unmarried (67.6%).

Education: Primary: 37 participants (9.6%), secondary: 58 participants (15.0%), Undergraduate (UG): 182 participants (47.2%), Postgraduate (PG): 109 participants (28.2%). The educational background of the participants indicated a wide range of educational attainment, with the majority (47.2%) having Undergraduate (UG) qualifications.

Occupation: Student: 243 participants (63.0%), homemaker: 41 participants (10.6%), Other: 74 participants (19.2%), unemployed: 28 participants (7.3%). The occupational distribution revealed that a substantial majority of the participants (63.0%) were students.

Previous exposure to vitiligo of the subjects

Majority of the respondents 373 (96.6%) had heard about vitiligo, indicating a relatively high level of awareness in the community. Regarding the source of information, friends and family played a significant role, with 51.0% of respondents reporting them as their primary source of knowledge about vitiligo, followed by medical sources (19.2%), social media (17.4%), and the internet (12.4%) (Table 2).

Table 2. Previous exposure to vitiligo of the subjects.

Variables	Opts	Percentage (%)	Frequency (f)
Have you heard about vitiligo	No	3.40%	13
	Yes	96.60%	373
Source of information	Friends and family	51.00%	197
	Medical	19.20%	74
	Social media	17.40%	67
	Internet	12.40%	48
Age of onset of vitiligo	Childhood	19.70%	76
	Adulthood	7.00%	27
	Anytime	73.30%	283
Who is susceptible to develop vitiligo?	Anyone	82.40%	318
	Family member of patient	12.20%	47
	Person with blood impurity	5.40%	21

Knowledge levels: When evaluating the level of knowledge based on a scoring system, it was found that the majority of respondents 245 (63.5%) fell into the "Poor" category, with knowledge scores ranging from 0 to 3 out of a maximum of 9. The mean knowledge score was 3.08, indicating a relatively low level of knowledge among the surveyed population (Table 3).

Table 3. Knowledge assessment.

Criteria measure of knowledge score		
Level of scores N=386	**Percentage**	**Frequency**
Good (7-9)	5.70%	22
Average (4-6)	30.80%	119
Poor (0-3)	63.50%	245
Maximum=9 Minimum=0		

The attitude assessment data provides insights into the attitudes of sample group consisting of 386 individuals. Attitudes are categorized into three levels: Positive attitude, neutral attitude, and negative attitude. Here is a detailed description of the assessment results: In this sample, 27 individuals (7.0% of the total) showed positive attitude. They have scored favourably on the attitude assessment, indicating a positive disposition towards vitiligo. The majority of the sample, comprising 183 individuals (47.4% of the total), falls into the Neutral Attitude category. They neither exhibit strong positive nor negative attitudes. A total of 176 individuals (45.6% of the total) showed negative attitude. These individuals have displayed a negative attitude in their responses (Table 4).

Table 4. Attitude assessment.

Level of scores N=386	Percentage	Frequency
Positive attitude.(5-6)	7.00%	27
Neutral attitude (3-4)	47.40%	183
Negative attitude (0-2)	45.60%	176
Maximum=6 Minimum=0		

Descriptive statistics of knowledge revealed that out of 386 respondents the mean knowledge score for entire population was 3.08, with median score of 3, SD of 1.80, maximum knowledge score of 9, minimum knowledge score of 0, giving range of 9, and mean percentage of 34.25% (Table 5).

Table 5. Descriptive statistics of knowledge.

N=386							
Descriptive statistics	**Mean**	**Median**	**S.D.**	**Maximum**	**Minimum**	**Range**	**Mean %**
Knowledge score	3.08	3	1.8	9	0	9	34.25
Maximum=9 Minimum=0							

Descriptive statistics of attitude revealed that out of 386 respondents the mean attitude score for entire population was 2.75, with median score of 3, SD of 1.24, maximum attitude score of 6, minimum attitude score of 0, giving range of 6, and mean percentage of 45.85%.

Table 6: Descriptive statistics of attitude.

N=386							
Descriptive statistics	**Mean**	**Median**	**S.D.**	**Maximum**	**Minimum**	**Range**	**Mean %**
Attitude score	2.75	3	1.24	6	0	6	45.85
Maximum=6 Minimum=0							

Association with demographic variables with knowledge score

Gender: The analysis found no significant difference in knowledge scores between male and female respondents, suggesting that gender did not play a substantial role in influencing knowledge levels about vitiligo. This indicates that both genders had similar levels of knowledge about the condition.

Age: Similarly, age did not show a significant association with knowledge scores. Respondents across different age groups exhibited similar levels of knowledge, suggesting that age-related factors did not significantly influence knowledge levels.

Residence: The study did not find a significant difference in knowledge scores between urban and rural respondents. Both urban and rural participants displayed comparable levels of knowledge about vitiligo. This implies that knowledge about vitiligo was relatively consistent across different residential backgrounds in the surveyed region.

Marital status: Marital status also did not significantly impact knowledge scores. Both married and unmarried respondents exhibited similar levels of knowledge, suggesting that knowledge about vitiligo was not significantly influenced by marital status.

Education: Education level emerged as a significant factor influencing knowledge scores. Respondents with primary education demonstrated the highest knowledge scores, followed by those with secondary education, Undergraduate (UG), and Postgraduate (PG) qualifications. This indicates that a higher level of education was associated with lower knowledge scores about vitiligo. The inverse relationship between education and knowledge levels suggests that individuals with higher education may have had access to more complex information about the condition but may not necessarily possess accurate knowledge.

Occupation: Occupation did not significantly affect knowledge scores. Students, homemakers, those with other occupations, and the unemployed displayed similar levels of knowledge about vitiligo. This suggests that occupation-related factors did not play a significant role in influencing knowledge levels (Table 7).

Table 7. Table showing association of knowledge scores and demographic variables.

Variables	Opts	Mean	SD	N	DF	F Test	P Value	Result
Gender	Male	3.16	1.9	154	384	0.707	0.48	Not significant
	Female	3.03	1.73	232				

Age	15-24 years	3.07	1.75	179	3/382	0.432	0.73	Not significant
	25-34 years	2.97	1.72	117				
	35-44 years	3.18	2.23	50				
	45 years and above	3.33	1.7	40				
Residence	Urban	2.88	1.76	112	384	1.453	0.147	Not significant
	Rural	3.17	1.81	274				
Marital status	Married	3.24	1.92	125	384	1.189	0.235	Not significant
	Unmarried	3.01	1.74	261				
Education	Primary	4.32	2.04	37	3/382	10.629	0	Significant
	Secondary	3.66	1.72	58				
	UG	2.93	1.59	182				
	PG	2.61	1.84	109				
Occupation	Student	2.95	1.79	243	3/382	1.877	0.133	Not significant
	Home maker	3.61	1.46	41				
	Other	3.26	1.98	74				
	Unemployed	3	1.7	28				

Association with demographic variables with attitude score

The analysis found no significant association was found between demographic variables, like gender, age, residence, marital status, education and occupation with attitude of general public (Table 8).

Table 8. Table showing association of scores and demographic variables.

Variables	Opts	Mean	SD	N	DF	F Test	P Value	Result
Gender	Male	2.68	1.18	154	384	0.896	0.371	Not significant
	Female	2.8	1.28	232				
Age	15-24 years	2.77	1.25	179	3/382	0.794	0.498	Not significant
	25-34 years	2.7	1.33	117				
	35-44 years	2.62	1.12	50				
	45 years and above	3	1.06	40				
Residence	Urban	2.62	1.22	112	384	1.372	0.171	Not significant
	Rural	2.81	1.25	274				
Marital status	Married	2.82	1.19	125	384	0.709	0.479	Not significant
	Unmarried	2.72	1.26	261				
Education	Primary	2.73	1.02	37	3/382	2.223	0.085	Not significant
	Secondary	2.38	0.88	58				
	UG	2.86	1.31	182				
	PG	2.78	1.33	109				

Occupation	Student	2.69	1.31	243	3/382	0.957	0.413	Not significant
	Home maker	3	1.12	41				
	Other	2.85	1.08	74				
	Unemployed	2.68	1.22	28				

Pearson's correlation analysis was conducted to explore the relationship between knowledge scores and attitude scores among the surveyed individuals regarding vitiligo. The correlation coefficient between knowledge scores and attitude scores was found to be -0.078. This negative correlation suggests that there is a weak inverse relationship between knowledge about vitiligo and attitudes towards the condition among the surveyed population. The p-value associated with the correlation coefficient was calculated to be 0.126. Since this p-value is greater than the conventional significance level of 0.05, the correlation is considered "not significant " (Table 9).

Table 9. Correlation between knowledge and attitude scores.

Pearson's correlation	**Correlation**	
	Knowledge	**Attitude**
Mean	3.082902	2.751295
SD	1.799	1.24
N	386	
Correlation	-0.078	
Table Value	0.1	
P Value	0.126	
Result	Not significant	

Discussion

The present research aimed to examine the knowledge and attitudes of the Kashmiri people about vitiligo. The results of this study have significant implications for public health initiatives and emphasise the need for heightened awareness and education on vitiligo within this specific geographical area. One significant finding of this research was the participants' significant degree of knowledge of vitiligo. Approximately 97% of the participants said they knew about the disease above. The observed degree of knowledge indicates a favourable trend, suggesting that vitiligo is not wholly unfamiliar throughout the Kashmiri community. Establishing this foundation is crucial for successfully implementing any public health initiative targeting the problem at hand. However, even with this heightened level of awareness, there was a noticeable deficiency in the depth of understanding of vitiligo. Most participants were classified as having "Poor" knowledge, as shown by a mean knowledge score of 3.08 out of a maximum score of 9. This implies that while vitiligo is a well-known illness, people often have a limited understanding of its factual details. The need to implement more extensive educational programmes to enhance comprehension is apparent. This research examined the impact of several demographic variables on individuals' knowledge and attitudes concerning vitiligo. The variables examined in this study were gender, age, place of residence, marital status, level of education, and employment. The influence of gender on knowledge levels and attitudes was statistically insignificant.

Both male and female participants showed comparable levels of knowledge and attitudes concerning vitiligo, suggesting that gender did not substantially influence the formation of views or understanding of the disease. There was no significant association found between age and knowledge or attitudes. This finding implies that age-related variables had little impact on the level of knowledge or attitudes concerning vitiligo. It is essential to highlight that vitiligo has the potential to impact people across all age ranges. This research demonstrates a notable degree of stability in knowledge and attitudes about vitiligo, regardless of age group. No significant variations were seen in knowledge or attitudes based on the kind of residence, whether urban or rural. This finding indicates consistent knowledge and attitudes about vitiligo across all residential backgrounds in the region of Kashmir. Ensuring consistency is crucial when developing targeted treatments to reach all community segments. The influence of marital status on knowledge or attitudes was not statistically significant. This finding suggests that the individuals' marital status had no substantial impact on their knowledge or attitudes toward vitiligo. The influence of education on knowledge scores was shown to be considerable. Individuals with a primary education level exhibited the most significant levels of knowledge scores, followed by those with secondary education, undergraduate degrees, and postgraduate qualifications. This implies that persons who have attained higher levels of education may have more exposure to intricate information about vitiligo, although it does not guarantee proper knowledge. Further inquiry is required to explore the intricate correlation between education and degrees of knowledge. The results indicate no significant impact of occupation on knowledge scores or attitudes. Those from various backgrounds, including students, homemakers, those with different vocations, and the jobless, had comparable knowledge and attitudes concerning vitiligo.

This finding indicates that characteristics connected to the profession did not significantly influence knowledge levels or attitudes. The results of the correlation analysis indicated a modest negative association between knowledge levels and attitudes towards vitiligo. This implies that persons with a greater understanding of vitiligo have more favourable views towards the illness. However, the association between these variables needed to exhibit more strength to reach a level of statistical significance.

Conclusion

The study's findings indicate a relatively high level of awareness of vitiligo among the general public in Kashmir. However, there exists a notable gap in knowledge, with the majority of respondents demonstrating poor knowledge about the condition. Additionally, a significant proportion of individuals displayed a negative attitude towards vitiligo. Gender, age, residence, and marital status did not significantly influence knowledge levels or attitudes, while education level emerged as a significant predictor of knowledge. Also, by the findings of non-significant negative correlation scores it is suggested that on average, individuals with higher knowledge scores do not necessarily exhibit more positive attitudes towards vitiligo. These findings underscore the importance of tailored educational initiatives to improve knowledge and reduce stigma related to vitiligo, with a particular focus on individuals with higher educational qualifications.

Recommendations

The findings of this study provide valuable insights into the knowledge and attitudes of the Kashmiri population towards vitiligo. These recommendations are aimed at improving awareness, knowledge, and attitudes regarding vitiligo in the region:

Comprehensive educational campaigns: Launching comprehensive educational campaigns about vitiligo is essential. These campaigns should target all population segments, irrespective of age, gender, education, or residence. They should focus on providing accurate information about the causes, symptoms, and treatment options for vitiligo, dispelling common myths and misconceptions.

School-based programs: Collaborate with educational institutions to include vitiligo awareness programs in school curricula. This can help reach children and adolescents with limited exposure to such information.

Healthcare provider training: Train healthcare providers, including dermatologists, nurses, and general practitioners, to effectively communicate with patients about vitiligo. They should be equipped to address patient concerns and provide accurate information during clinical visits.

Community workshops: Organize community workshops and seminars to raise awareness about vitiligo. Invite dermatologists, patient advocates, and individuals with vitiligo to share their experiences and insights. These events can foster empathy and understanding within the community.

Media and social media engagement: Utilize various media platforms, including television, radio, and social media, to disseminate information about vitiligo. Engage influencers and celebrities to help destigmatize the condition and promote positive attitudes.

Support groups: Establish vitiligo support groups where individuals with vitiligo and their families can share their experiences and provide emotional support. These groups can serve as safe spaces for open discussions and the exchange of information.

Mental health support: Recognize the emotional toll that vitiligo can take on individuals. Provide access to mental health resources and counselling for those affected, as anxiety and depression are common among vitiligo patients.

Policy advocacy: Advocate for policies that protect individuals with vitiligo from discrimination in various spheres, including employment and education.

Limitations

Firstly, using closed-ended questions in the survey constrained participants' responses, possibly limiting the depth and nuance of the data collected. Additionally, the online survey method we employed could have introduced sampling bias. This bias may have excluded individuals who are less technologically proficient or need internet access, potentially affecting the representativeness of our study population. Furthermore, our research focused on self-reported attitudes and did not delve into participants' actual behaviours, primarily due to methodological constraints. For future researchers, we recommend conducting studies with more diverse and representative samples to enhance the generalizability of findings. Additionally, we should explore participants' behaviours more objectively, potentially overcoming the methodological challenges we encountered in our study.

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