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Original article

Acknowledging popular misconceptions about vitiligo in western Saudi Arabia

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Abstract

Background: Vitiligo is the most common depigmentary disorder of the skin and hair. Our aim is to evaluate knowledge, attitudes, and misconceptions about vitiligo among adults attending shopping centres. **Methods:** A cross-sectional study design was implemented. It included a representative sample of adults in Jeddah and Makkah who presented in shopping centres every weekend during March, 2014. **Results:** The study included 423 subjects aged between 18 and 65 years with a mean of 29.9 ± 9.7 years. Females represent 70% of them. Only 6.9% of the participants heard well about vitiligo, with social media (32.2%) the most commonly reported source of information. Overall, vitiligo knowledge was sufficient in 41.8% of the participants. Females had a significantly higher knowledge score compared with males, and older subjects (31–50 and >50 years) had a higher knowledge score compared with younger subjects (18–30 years), which proved statistically significant. Attitudes towards vitiligo were positive in 57.4% of participants. **Conclusion:** Knowledge of vitiligo in adults is suboptimal, yet attitude towards the disease is generally acceptable. Educating the public about vitiligo could lead to increased self-confidence, better social integration, and psychological well-being for vitiligo patients.

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Keywords: Vitiligo; Makkah; Jeddah; Shopping centre; Misconceptions; Saudi Arabia

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1. Introduction

Vitiligo is the most common skin and hair depigmentation disease, resulting from an autoimmune process directed against the melanocytes ([van den Wijngaard et al., 2000](#); [Jimbow, 1998](#); [Zhang et al., 2005](#)). The prevalence is approximately 1% of the global population, but its prevalence in western Saudi Arabia is about 3.12% ([Raddadi et al., 1999](#)). It often causes severe cosmetic disfigurement in patients and may significantly affect their quality of life (QOL) ([Chren et al., 2001](#)). Our sample community differs from western communities in that the former

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possesses many misconceptions about vitiligo that affect patient QOL based on existing multinational studies (Ahmad et al., 2008; AIGhamdi, 2010).

Social acceptance of people with vitiligo is largely dependent on perceptions of this disease in a given population and often represents a considerable problem for patients and their families. Society's response towards vitiligo also affects a patient's well being, QOL, sense of stigmatization, and possibly even treatment outcome (Kent, 1996; Porter et al., 1987).

Several studies show the impact and QOL among vitiligo patients but few have addressed the effect public misconceptions can have on patient QOL. So by recognizing popular misconceptions of vitiligo, we can improve the QOL of vitiligo patients and their families. To the best of our knowledge, this is the first study to address this topic in the Makkah region of Saudi Arabia. Research was conducted in both Makkah and Jeddah in March 2014.

2. Material and methods

A cross-sectional survey was carried out using a self-reported questionnaire distributed to adults attended Jeddah and Makkah shopping centres. Participants were recruited every weekend throughout March 2014. The selection criteria included being 18 years old or over, not suffering from vitiligo, and without an immediate relative with vitiligo.

A simple Arabic self-administered questionnaire was created by the researcher and validated by two dermatologists and one epidemiologist. The survey had three main categories and a total of 17 questions, in addition to a list of possible responses. The respondents were asked to choose the most appropriate response to each question.

The questions included demographic characteristics of the participants and were designed to elicit knowledge and factors associated with vitiligo knowledge, awareness, and attitude towards vitiligo patients.

Participants were asked to fill in the questionnaires in less than 5 min and return them to the researcher immediately. Four trained assistants helped collect data.

Correctly, answered questions that elicited knowledge were given a score of 1 whereas incorrect or unanswered responses were given a score of 0. Total scores were computed using the summation of individual scores, and therefore ranged between 0 and 8. The percentage of total knowledge score was computed for each participant and utilized for statistical comparisons. Those who scored at or above the median value were considered as having "sufficient knowledge" whereas those who scored below the median level were considered as having "insufficient knowledge."

Questions that explored attitudes towards vitiligo patients were given a score of 2 if positive, 0 if negative, and 1 if the respondent was unsure. The total score was computed using the summation of individual scores, and therefore ranged between 0 and 20. The percentage of total

attitude score was computed for each participant and utilized for statistical comparisons. Those who scored at or above the median value were considered as having a "positive attitude" whereas those who scored below the median level were considered as having a "negative attitude."

An online sample size calculator was used to assume the number of adults (>18 years) visiting shopping centres in Jeddah and Makkah at the weekend, which usually does not exceed 20,000 people. At 95% confidence interval and 5% margin of error, the calculated sample size was 384. This sample was increased by 10% in order to compensate for drop-out. Thus, 423 adults were invited to participate in the study.

Prior to commencing research, the study was approved by the Research and Ethics Committee of Hera General Hospital, Makkah. Participation in the study by filling in the questionnaire was considered consent. Confidentiality was ascertained and data will not be used for any purpose other than the research.

3. Results

3.1. Demographic characteristics

The study included 423 subjects, and Table 1 summarizes their demographic characteristics. Their age ranged between 18 and 65 years with a mean of 29.9 years and standard deviation of 9.7 years. Females represented 70% of the sample. More than half (54.4%) were employees whereas 23.4% and 8.3% were professional workers and students, respectively.

3.2. Knowledge about vitiligo

Only 6.9% of the participants had sound knowledge about vitiligo, with social media the most common reported source of information (32.2%). This was followed by TV (20.8%), newspapers/magazines (15.7%), and other sources (31.3%).

As illustrated in Table 2, most of the participants (78.5%) recognized that vitiligo affects the social status of the patients and 70.7% of them were aware that it is not

Table 1
Demographic characteristics of the participants ($n = 423$).

	Categories	Frequency	Percentage
Gender	Male	127	30.0
	Female	296	70.0
Age (years)	18–30	263	62.2
	31–50	137	32.4
	>50	23	5.4
Range		18–65	
Mean \pm SD		29.9 \pm 9.7	
Occupation	Student	35	8.3
	Professional	99	23.4
	Employee	230	54.4
	Other (manual/retired)	59	13.9

Table 2
Response of the participants to knowledge questions about vitiligo.

Questions	Correct answers	
	No.	%
Vitiligo is an infectious disease “NO”	299	70.7
Vitiligo is associated with the habitual intake of certain foods (i.e., fish or milk) “NO”	222	52.5
Vitiligo is a disease of the immune system “YES”	209	49.4
Vitiligo is a hereditary disease “NO”	154	36.4
Vitiligo is more prevalent and exaggerated with exposure to psychological stress “YES”	223	52.7
Vitiligo affects the social status of the patients “YES”	332	78.5
Vitiligo is a dangerous disease “NO”	266	62.9
There is a treatment for vitiligo “YES”	245	57.9

an infectious disease. Almost two-thirds of them (62.9%) recognized that vitiligo is not a dangerous disease and almost half of them recognized other important features of the disease, including that it is treatable (57.9%), it is more prevalent and exaggerated with exposure to psychological stress (52.7%), it is not associated with the habitual intake of certain foods (52.5%), and it is a disease of the immune system (49.4%). Only about one-third of them (36.4%) knew correctly that vitiligo is not a hereditary disease. As such, overall knowledge about vitiligo was sufficient among 41.8% of the participants.

3.3. Factors associated with knowledge about vitiligo

As shown in Table 3, females had a higher significant knowledge score compared with males (59.9 ± 21.1 versus 52.4 ± 24.9 , $p = 0.002$). Older subjects (31–50 and >50 years) had a higher knowledge score compared with younger subjects (18–30 years), (61.7 ± 22.4 and 61.4 ± 20.3 versus 55.2 ± 22.5 , respectively), and the difference

Table 3
Factors associated with knowledge about vitiligo.

	Vitiligo knowledge score percentage		p-Value
	Mean	SD	
Gender			
Males ($n = 127$)	52.4	24.9	0.002
Females ($n = 296$)	59.9	21.1	
Age (years)			
18–30 ($n = 263$)	55.2	22.5	0.016
31–50 ($n = 263$)	61.7	22.4	
>50 ($n = 23$)	61.4	20.3	
Occupation			
Student ($n = 35$)	44.6	24.5	<0.001
Professional ($n = 99$)	55.1	21.8	
Employee ($n = 230$)	61.1	21.5	
Other (manual/retired) ($n = 59$)	55.9	23.5	
Heard about vitiligo			
Yes ($n = 394$)	59.9	20.6	<0.001
No ($n = 29$)	27.2	25.7	
Source of information			
Social media ($n = 127$)	57.4	21.1	0.427
TV ($n = 82$)	60.7	21.5	
Newspapers/magazines ($n = 62$)	60.9	22.3	
Other ($n = 123$)	61.4	18.5	

was statistically significant, $p = 0.016$. Regarding occupation, employees reported the highest knowledge score (61.1 ± 21.5) while the lowest score was reported among students (44.6 ± 24.5); again, the difference was statistically significant, $p < 0.001$. Those who reported to have heard about vitiligo had a higher significant knowledge score compared with those who had not heard a lot about vitiligo (59.9 ± 20.6 versus 27.2 ± 25.7 , $p < 0.001$). The source of information was not significantly associated with the score of vitiligo knowledge.

3.4. Attitude towards vitiligo

Table 4 shows that most participants agreed that there is a lack of public awareness regarding vitiligo and its treatment (86.5%). The study also revealed that work owners were largely willing to employ a vitiligo patient (76.1%), and participants in general were willing to be served by a vitiligo employee (74.2%). Slightly more than half of them (56.5%) would accept food prepared by a vitiligo patient, yet almost one-quarter (24.1%) would avoid shaking hands with a vitiligo patient due to fear of infection and around the same amount (24.8%) would not share food with a vitiligo patient. A considerable percentage of the participants (42.8%) would not marry a vitiligo patient.

Overall, approximately 57.4% of the participants displayed positive attitudes towards vitiligo sufferers.

3.5. Factors associated with attitude towards vitiligo

As shown in Table 5, participants in the 31–50 years age group had the highest attitude score towards vitiligo (70.0 ± 19.5) whereas those aged over 50 years had the lowest score (58.0 ± 22.3). The difference was statistically significant. Those who reported hearing about vitiligo had a higher significant attitude score compared with those who had not heard a lot about vitiligo (69.1 ± 19.8 versus 55.7 ± 20.8 , $p = 0.001$). Gender, occupation, and source of information were not significantly associated with attitude towards vitiligo.

As Table 6 reveals, those with sufficient knowledge about vitiligo tended to have more positive attitudes towards the disease. This association was statistically significant, $p < 0.001$.

Table 4
Response of the participants to attitude questions about vitiligo.

	Participant's response		
	Yes N (%)	No N (%)	Don't know N (%)
Vitiligo is a prevalent disease	170 (40.2)	198 (46.8)	55 (13.0)
I would avoid shaking hands with a vitiligo patient to prevent infection	102 (24.1)	294 (69.5)	27 (6.4)
I would eat food prepared by a vitiligo patient	239 (56.5)	133 (31.4)	51 (12.1)
I would share food with a vitiligo patient	279 (65.2)	105 (24.8)	42 (9.9)
I would accept being served by a vitiligo patient	314 (74.2)	77 (18.2)	32 (7.6)
As an employer, I would hire a vitiligo patient	322 (76.1)	47 (11.1)	54 (12.8)
I would marry a vitiligo patient	128 (30.3)	181 (42.8)	114 (27.0)
Partner is a vitiligo patient*	5 (2.4)	202 (97.6)	
Vitiligo partner affects marital life*	24 (11.6)	106 (51.2)	77 (37.2)
There is a lack of public awareness regarding vitiligo and its treatment	366 (86.5)	16 (3.8)	41 (9.7)

* For married only ($n = 207$).

Table 5
Factors associated with attitude towards vitiligo.

	Vitiligo attitude score percentage		<i>p</i> -Value
	Mean	SD	
Gender			
Males ($n = 127$)	66.4	20.8	0.212
Females ($n = 296$)	69.0	19.9	
Age (years)			
18–30 ($n = 263$)	68.2	20.1	0.029
31–50 ($n = 137$)	70.0	19.5	
>50 ($n = 23$)	58.0	22.3	
Occupation			
Student ($n = 35$)	67.0	19.8	0.655
Professional ($n = 99$)	67.7	18.4	
Employee ($n = 230$)	69.3	20.3	
Other (manual/retired) ($n = 59$)	65.8	22.8	
Heard about vitiligo			
Yes ($n = 394$)	69.1	19.8	0.001
No ($n = 29$)	55.7	20.8	
Source of information			
Social media ($n = 127$)	68.8	19.7	0.521
TV ($n = 82$)	68.5	19.4	
Newspapers/magazines ($n = 62$)	66.8	19.9	
Other ($n = 123$)	71.1	20.3	

Table 6
Association between attitude and knowledge regarding vitiligo among participants.

Attitude towards vitiligo	Vitiligo knowledge		<i>p</i> -Value
	Insufficient N (%)	Sufficient N (%)	
Negative ($n = 180$)	96 (53.3)	84 (46.7)	<0.001
Positive ($n = 243$)	81 (33.3)	162 (66.7)	

4. Discussion

Vitiligo can have devastating psychological effects on the patient due to cosmetic disfigurement and treatment difficulties (Shaffrali and Gawkrödger, 2000). A paramount factor for treatment compliance and the psychological

well-being of the patient is society's response to them. The perception of the general population towards vitiligo differs in terms of disease seriousness, infectivity, availability of treatment, and duration of therapy (Ahmad et al., 2008).

The knowledge of participants in the current study regarding the cause of vitiligo was limited. Although most of them were students, professionals, or employees, approximately half did not know that vitiligo is an immune disease and most of them did not know the exact aetiology of the disease. This lack of adequate knowledge is conveyed to the patients and the wider community. Female, older, and working employees were more knowledgeable compared with male, younger, and student participants.

In the current study, we also focused on the misconceptions and attitudes of the general adult population regarding vitiligo. This is of great importance because the attitude of the general public is probably one of the most significant reasons for the depression, isolation, and distress experienced by vitiligo patients. A Saudi study conducted by AlGhamdi (2010) reported that various misconceptions and negative attitudes about vitiligo among the public are prevalent, affecting the vitiligo patients' QOL. Another recent study by Thompson et al. (2010) analysed British vitiligo patients and discovered that they suffer from avoidance and concealment. This seems to be caused by cultural values related to appearance, status, and misconceptions linked to the aetiology of the condition. A similar recent study by Kent and Al'Abadie (1996) revealed that vitiligo affects lives in a variety of ways, mainly due to activities such as avoidance and negative reactions by others. Another study revealed that 33.63% of vitiligo patients in a teaching hospital in India suffered from psychiatric morbidity (Mattoo et al., 2001). Our study differs from most of the previous work by analysing the attitude of the general public rather than the patients, thus revealing a wide range of common public misconceptions about vitiligo. Beliefs about the cause of vitiligo were striking as more than one quarter believed that it is contagious and about half

thought that it is associated with habitual intake of certain foods (i.e., fish or milk) (AlGhamdi, 2010).

Our study revealed that misconceptions towards vitiligo are more prevalent among younger individuals in agreement with what has been reported by AlGhamdi (2010).

The presence of vitiligo may act as a barrier, preventing patients from socializing or even assimilating into the society, and may hinder relationships such as marriage. In the current study, 42.8% of the participants from the general population were absolutely unwilling to marry a vitiligo patient. This finding provides an explanation for the common difficulties that vitiligo patients, particularly single women, experience when attempting to initiate relationships (Sampogna et al., 2008; Parsad et al., 2003; Mattoo et al., 2002).

When we focused on general attitudes towards vitiligo patients, 69.5% of the participants were unwilling to shake hands with sufferers, and almost a quarter would not share food. This could explain the isolation experienced by many vitiligo patients.

In the Saudi population, vitiligo is considered the most common dermatological disorder to affect the QOL of patients. The social lives, personal relationships, and sexual activities of female patients are affected more than those of male patients, so women generally seek treatment earlier than men (Al Robaee, 2007).

In the current survey, most of the respondents recognized that vitiligo affects the social status of the patients. However, almost 58% of them knew that there is an available treatment for vitiligo, a lower figure than that of Qassim's study (76.9%) (Ahmad et al., 2008). Less than half of our participants were willing to marry a vitiligo patient whereas in other studies this figure was as high as 82.2% (Ahmad et al., 2008). This could be explained due to the social difference between the various regions of Saudi Arabia. Among married participants, almost half reported that a vitiligo partner would not affect marital life.

The lack of public disease-related understanding and the existence of anxiety and depression require targeted psychosocial support to patients beside education of the public as this chronic skin disease prevents sufferers from living a healthy lifestyle. A better understanding of this disease by the general public would result in a better assimilation of vitiligo patients within society.

5. Conclusion

Common negative attitudes and misunderstandings about vitiligo were found in the adult population, including the belief that vitiligo was infectious or that it was associated with the habitual intake of certain foods. Educating the public about vitiligo could lead to increased self-confidence, better social integration, and psychological well-being for vitiligo patients.

Participants who were female, older, employed, or who had heard about vitiligo possessed more knowledge about

the disease, and middle-aged subjects and those who had heard about vitiligo reported more positive attitude towards patients. Attitude towards the disease was significantly associated with knowledge about it.

Conflict of interest

None.

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