

**AWARENESS, KNOWLEDGE AND BELIEFS ABOUT VITILIGO AMONG FEMALE
UNIVERSITY STUDENTS IN ABHA CITY, SAUDI ARABIA**¹Areej Saeed Alshahrani and ^{2*}Razan Saeed Alamar¹Dermatology department, Armed Forces hospital, Southern Region.²Medical Intern, Aseer Central hospital, Abha, Saudi Arabia.***Correspondence for Author: Razan Saeed Alamar**

Medical Intern, Aseer Central hospital, Abha, Saudi Arabia.

Article Received on 01/11/2015

Article Revised on 23/11/2015

Article Accepted on 16/12/2015

ABSTRACT

Background: The 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. **Objectives:** To explore the awareness, attitude and misconceptions about vitiligo among female students in King Khalid University, Abha. **Subjects and methods:** A cross-sectional study was conducted among students at female colleges in Alsamer center belonging to King Khalid University in Abh. Two-stage random sampling technique was adopted. In the first stage, two colleges were randomly selected through a simple random technique (pharmacy and computer sciences). In the second stage, within each one of the selected college, the sample was equally distributed between the academic years. A simple Arabic self-administered validated questionnaire was utilized for data collection. **Results:** The study included 337 female University students out of 375 invited to participate in the study (89.9%). Their age ranged between 18 and 29 years with a mean of 21.6 years and standard deviation of 2.1 years. Majority of the students (96.1%) heard well about vitiligo. Friends was the commonest reported source of information regarding vitiligo among them (50.3%) whereas internet, TV and newspapers/magazines were reported by 40.7%, 34.3% and 25.3% of the participants, respectively. Overall knowledge about vitiligo among participants was sufficient among 41.8% of them. None of the studied socio-demographic factors was significantly associated with vitiligo knowledge among female University students although the sufficient knowledge was higher among students of pharmacy, those of higher academic levels, older, married, whose mothers were employees and their fathers were teachers. Majority of them (78%) will accept employment of a vitiligo patient and accepted being served by a vitiligo patient (75.1%) whereas a considerable percentage of the participants (40.9%) will not accept marriage from a vitiligo patient. There was a positive significant association between knowledge and attitude scores ($r=0.41$, $p=0.029$). **Conclusion:** A considerable percentage of female university students in Abha had common negative attitudes and misunderstandings about vitiligo. Therefore, educating the young females about vitiligo could lead to increased self-confidence, better social integration, and psychological well-being for vitiligo patients.

KEYWORDS: Vitiligo; Awareness; Knowledge; Attitude; Females; University students; Saudi Arabia.**INTRODUCTION**

Vitiligo is a skin depigmentation disease that results from an autoimmune process directed against the melanocytes. It is the most common depigmentary disorder of the skin and hair.^[1, 2]

The prevalence is approximately 1 percent of the population worldwide and its prevalence in Saudi Arabia is about 0.32%.^[3] It often induces severe cosmetic disfigurement in patients and may significantly affect their quality of life.^[4]

Our community is differ from western community that ours have many misconceptions about vitiligo is disease that affects patient quality of life (QoL) based on many studies published earlier in the world.^[4-6]

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. The society's response towards vitiligo is also reflected on patient's well being, quality of life, sense of stigmatization and may extend to affect treatment.^[7, 8]

Several studies showed the impact and QoL among vitiligo patient but few studies highlighted the population misconception that may affects the patient QoL. So by recognize the population misconceptions about the vitiligo, we can improve QoL of vitiligo patients. This study aimed to have an overview regarding the awareness, attitude and misconceptions about vitiligo among female students in King Khalid University, Abha.

Subjects and methods

A cross-sectional study was conducted among students at female colleges in Alsamer center belonging to King Khalid University in Abha. Abha is a city lies in Assir Province of Saudi Arabia on the slopes of the Sarawat Mountains (Al-Sarawat Mountains). Alsamer center includes 6 colleges for females (computer sciences, pharmacy, medicine, dentistry, applied medical science in Abha and nursing in Abha).

The sampling frame was prepared for female students of Alsamer center, King Khalid University, Abha (6 colleges). It included 3521 students.

Using the Roasoft online sample size calculator, the sample size was calculated on assumption that the total population of female secondary school students is 3521, the lowest prevalence of none-prescribed medication use among university students as cited from literature is approximately 43%,⁽⁹²⁴⁾ 95% confidence interval and 5% acceptable errors, the sample was 341, this sample was increased to 375 to compensated for non-response.

Two-stage random sampling technique was adopted. In the first stage, two colleges were randomly selected through a simple random technique (they were colleges of pharmacy and computer sciences). The sample was distributed between the two colleges proportional to the total number of students.

In the second stage, within each one of the selected college, the sample was equally distributed between the academic years. Through a simple random technique, students were selected from a list obtained from the administration of the each college.

A simple Arabic self-administered questionnaire created by the researcher and validated by two dermatological and one epidemiology consultants was utilized for data collection. It includes demographic characteristics of the participants (age, college, academic level, marital status, parental education and job), inquiring about hearing well of vitiligo, source of information, knowledge questions (8 questions) and attitude statements (10 Statements). Participants were asked to fill in the questionnaire in less than 5 minutes and returned them back to the researcher immediately.

Right answers were given a score of "1" whereas wrong answers and don't know answers will be given a score of "0". Total score was computed by summation of individual scores. Thus a total score ranged between 0 and 8 was obtained. Those scored at or above the median

value were considered as having "sufficient knowledge" whereas those scored below the median level (5) were considered as having "insufficient knowledge".

Positive attitude answers were given a score of "2" whereas negative attitude answers were given a score of "0" and don't know were given a score of "1". Total score was computed by summation of individual scores. Thus a total score ranged between 0 and 20 was obtained. The percentage of total attitude score was computed for each participant and utilized for statistical comparisons. Those scored at or above the median value were considered as having "positive attitude" whereas those scored below the median level were considered as having "negative attitude".

A pilot study was done on 20 volunteers from one of the colleges to help in adaptation and modification of the study tool.

Approved by the Local Regional Research and Ethics committee in Abha city was obtained. Permissions from the deans of the involved colleges were obtained. Participation in the study by filling in the study questionnaire was considered consent.

Data entry and statistical analysis were done using SPSS software, version 20. Frequency and percentage were utilized to describe categorical variables whereas mean and standard deviation were used to describe continuous variables. Chi-square test was applied to test for the association between compared variables. A p value at or less than 0.05 was considered statistically significant.

RESULTS

The study included 337 female University students out of 375 invited to participate in the study (89.9%). Table 1 summarizes the demographic characteristics of the respondents. Their age ranged between 18 and 29 years with a mean of 21.6 years and standard deviation of 2.1 years. More than half of them (58.2%) were recruited from college of computer sciences.

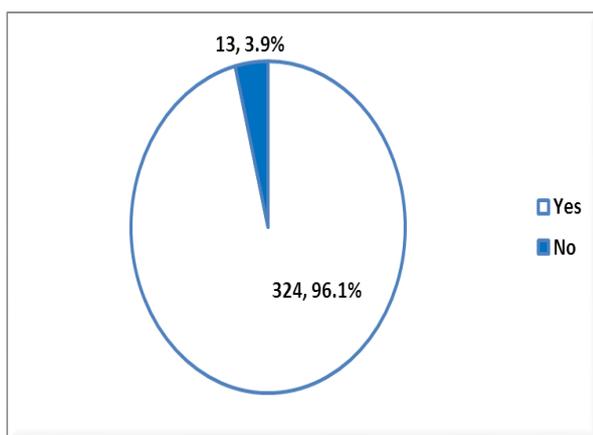
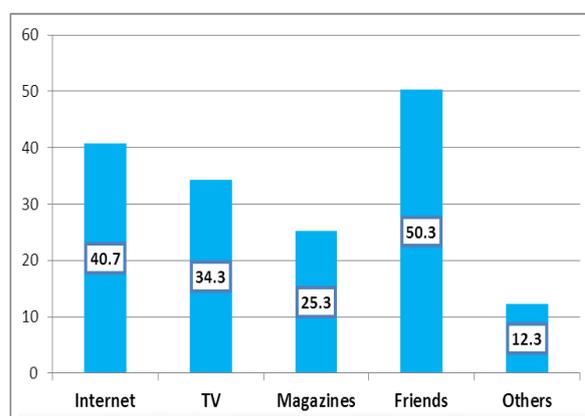
They almost equally distributed between the academic years. Majority of them (81.3%) were singles. Almost half of their mothers (49%) were secondary school or less graduated whereas more than half of their fathers (56.4%) were at least university graduated. Mos of their mothers (70.6%) were house wives whereas 3% were working in medical field. Almost one-third of their fathers (30.6%) were retired whereas 20.2% were militaries.

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

	Categories	Frequency	Percentage
College	Pharmacy	141	41.8
	Computer science	196	58.2
Academic year	First	64	19.0
	Second	73	21.7
	Third	75	22.3
	Fourth	67	19.9
	Fifth	58	17.2
Age (Years)	<24	289	85.8
	≥24	48	14.2
Range		18-29	
Mean±SD		21.6±2.1	
Marital status	Single	274	81.3
	Married	53	15.7
	Divorced	10	3.0
Mother`s education	Illiterate	44	13.0
	≤secondary	165	49.0
Father`s education	University/+	128	38.0
	Illiterate	5	1.5
Mother`s job	≤secondary	142	42.1
	University/+	190	56.4
	House wife	238	70.6
Father`s job	Teacher	57	16.9
	Employee	32	9.5
	Medical field	10	3.0
	Teacher	51	15.0
	Employee	62	18.4
	Military	68	20.2
	Retired	103	30.6
	Trading	37	11.0
	Others	11	3.3
	Not working	5	1.5

Knowledge about vitiligo.

From figure 1, it is obvious that majority of the students (96.1%) heard well about vitiligo. Friends was the commonest reported source of information regarding vitiligo among them (50.3%) whereas internet, TV and newspapers/magazines were reported by 40.7%, 34.3% and 25.3% of the participants, respectively as sources of vitiligo information. Figure 2.

**Figure 1: Hearing well about vitiligo among participants.****Figure 2: Source of information regarding vitiligo among participants.**

As illustrated from table 2, most of the participants (78%) recognized that vitiligo affects the social status of the patients and 67.7% of them knew correctly that vitiligo is not an infectious disease. Almost two-thirds of them (64.7%) recognized that vitiligo is not a dangerous disease and more than half of them recognized that there is a treatment for vitiligo (56.7%), vitiligo is not

associated with the habit of intake of certain food (54.3%) and it is more prevail and exaggerated with exposure to psychological stress (52.2%). Approaching half of them (49.4%) recognized that vitiligo is an

immune disease (49.4%). Only about one-third of them (31.5%) knew correctly that vitiligo is not a hereditary disease.

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

Questions	Right answers	
	No.	%
Vitiligo is an infectious disease "NO"	228	67.7
Vitiligo is associated with the habit of intake of certain food (Fisk and milk) "NO"	183	54.3
Vitiligo is an immune disease "YES"	168	49.4
Vitiligo is a hereditary disease "NO"	106	31.5
Vitiligo is more prevail and exaggerated with exposure to psychological stress "YES"	176	52.2
Vitiligo affects the social status of the patients "YES"	263	78.0
Vitiligo is a dangerous disease "NO"	218	64.7
There is a treatment for vitiligo "YES"	191	56.7

Overall knowledge about vitiligo among participants was sufficient among 41.8% of them as displayed in figure 3.

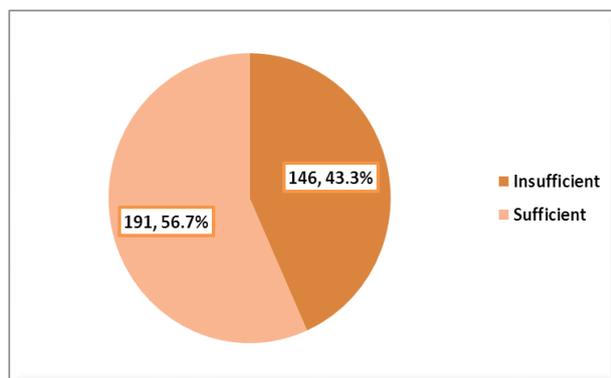


Figure 3: Overall knowledge level of the participants regarding vitiligo.

Factors associated with knowledge about vitiligo

As shown in table 3, none of the studied factors was significantly associated with vitiligo knowledge among female University students although the sufficient knowledge was higher among students of pharmacy, those of higher academic levels, older, married, whose mothers were employees and their fathers were teachers.

Table 3: Factors associated with knowledge about vitiligo.

	Vitiligo knowledge		p-value
	Insufficient N=146 N (%)	Sufficient N=191 N (%)	
College			0.642
Pharmacy (n=141)	59 (41.8)	82 (58.2)	
Computer science (n=196)	87 (44.4)	109 (55.6)	
Academic year			0.847
First (n=64)	30 (46.9)	34 (53.1)	
Second (n=73)	32 (43.8)	41 (56.2)	
Third (n=75)	31 (41.3)	44 (58.7)	
Fourth (n=67)	31 (46.3)	36 (53.7)	
Fifth (n=58)	22 (37.9)	36 (62.1)	
Age (Years)			0.131
<24 (n=289)	130 (45.0)	159 (55.0)	
≥24 (n=48)	16 (33.3)	32 (66.7)	

Marital status			
Single (n=274)	122 (44.5)	152 (55.5)	
Married (n=53)	19 (35.8)	34 (64.2)	0.461
Divorced (n=10)	5 (50.0)	5 (50.0)	
Mother`s education			
Illiterate (n=44)	20 (45.5)	24 (54.5)	
≤secondary (n=165)	70 (42.4)	95 (57.6)	0.930
University/+ (n=128)	56 (43.8)	72 (56.3)	
Father`s education			
Illiterate (n=5)	3 (60.0)	2 (40.0)	
≤secondary (n=142)	55 (38.7)	87 (61.3)	0.290
University/+ (n=190)	88 (46.3)	102 (53.7)	
Mother`s job			
House wife (n=238)	102 (42.9)	136 (57.1)	
Teacher (n=57)	27 (47.4)	30 (52.6)	
Employee (n=32)	11 (34.4)	21 (65.6)	0.462
Medical field (n=10)	6 (60.0)	4 (40.0)	
Father`s job			
Teacher (n=51)	19 (37.3)	32 (62.7)	
Employee (n=62)	30 (48.4)	32 (51.6)	
Military (n=68)	31 (45.6)	37 (54.4)	
Retired (n=103)	43 (41.7)	60 (58.3)	
Trading (n=37)	15 (40.5)	22 (59.5)	
Others (n=11)	5 (45.5)	6 (54.5)	
Not working (n=5)	3 (60.0)	2 (40.0)	0.884

Attitude towards vitiligo

From table 4, as a work owner, majority of them (78%) will accept employment of a vitiligo patient and accepted being served by a vitiligo patient (75.1%). More than half of the participants (59.9%) did not know if there is lack of public awareness regarding vitiligo and its treatment and 59.6% will accept eating food prepared by

vitiligo patients. Almost one-quarter of them (24.3%) will escape from shaking hands with vitiligo patients to avoid getting infected by the disease and will escape sharing food with vitiligo patient (23.6%). A considerable percentage of the participants (40.9%) will not accept marriage from a vitiligo patient.

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	127 (37.7)	153 (45.4)	57 (16.9)
Escaping from shaking hands with vitiligo patients to avoid getting infected by the disease	82 (24.3)	232 (68.8)	23 (6.8)
Eating food prepared by vitiligo patients	201 (59.6)	99 (29.4)	37 (11.0)
Sharing food with vitiligo patient	226 (67.1)	80 (23.7)	31 (9.2)
Accept being served by a vitiligo patient	253 (75.1)	61 (18.1)	23 (6.8)
As a work owner, accept employment of a vitiligo patient	263 (78.0)	33 (9.8)	54 (12.8)
Accept marriage from a vitiligo patient	104 (30.9)	138 (40.9)	95 (28.2)
Vitiligo partner affect the marital life*	6 (9.5)	40 (63.5)	17 (27.0)

There is lack of public awareness regarding vitiligo and its treatment	100 (29.7)	35 (10.4)	202 (59.9)
--	---------------	--------------	---------------

* Ever-married only (n=63)

There was a positive significant association between knowledge and attitude scores ($r=0.41$, $p=0.029$)

DISCUSSION

Vitiligo can have devastating psychological effects on the patient due to cosmetic disfigurement and treatment difficulties.^[10] A paramount factor for treatment compliance and psychological well being of the patient is society's response in general towards victims of this disease. The perception of population towards vitiligo differs in terms of disease seriousness, infectivity, availability of treatment and duration of therapy.^[11]

The knowledge of female university students in the current study regarding the cause of vitiligo was limited. Although they were highly educated, almost half of them did not know that vitiligo is an immune disease and most of them did not know the exact causation of the disease. This lack of adequate knowledge conveyed to the community. None of the socio-demographic variables of the participants was significantly associated with their knowledge level.

In the current study, we also focused on the misconceptions and attitudes of the young educated female population regarding vitiligo. This is of great importance because the attitude of this sector is probably one of the most significant reasons for the depression, isolation, and distress experienced by vitiligo patients.

In a Saudi study conducted by AlGhamdi, et al (2012),^[12] they reported that various misconceptions and negative attitudes about vitiligo among the public are prevalent affecting the vitiligo patients' quality of life. Another recent study by Thompson and colleagues analyzed British vitiligo patients and discovered that they suffer from avoidance and concealment.^[13] This seemed to be caused by cultural values related to appearance, status, and myths linked to the cause of the condition. A similar recent study by Kent and Al'Abadie revealed that vitiligo affects lives in a variety of ways, mainly due to activities such as avoidance and negative reactions by others.^[14] Another study revealed that 33.63% of vitiligo patients in a teaching hospital in India suffered from psychiatric morbidity.^[15] Our study differs from most of the previous work by being analyzed the young female public instead of the patients attitude.

Our study revealed a wide range of common misconceptions about vitiligo. Beliefs about the cause of vitiligo were striking as almost one-third believed that it is an infectious diseases and more than 45% thought that it is associated with the habit of intake of certain food (Fisk and milk). Our study revealed that misconceptions towards vitiligo are more prevalent among younger individuals in agreement with what has been reported by AlGhamdi, et al.^[12]

The presence of vitiligo may act as a barrier for the patients mixing into the society, and may hinder their marriages. In the current study, 40.9% of the participants from female university students were absolutely unwilling to marry a vitiligo patient. This finding provides an explanation for the common difficulties that vitiligo patients, particularly single males, experience in initiating relationships.^[16-18] Moreover, almost a quarter of our participants did not accept sharing food with vitiligo patient. This particularly could explain the tendency of isolation observed among vitiligo patients.

In the Saudi population, vitiligo is considered the commonest dermatological disorders mostly affecting the quality of life of patients with this problem. Their social lives, personal relationships, sexual activities, are affected more than men, so they seek treatment earlier than men.^[19] In the current survey, most of the respondents recognized that vitiligo affects the social status of the patients. However, approaching 57% of them knew that there is an available treatment for vitiligo. Less than one-third of them accepted marriage from a vitiligo patient. Among married participants, almost two-thirds reported that vitiligo partner will not affect the marital life.

Among limitations faced in implementing this research is conducting it among only female University students which could affect the generalizability of the results.

In conclusion, a considerable percentage of female university students in Abha had common negative attitudes and misunderstandings about vitiligo. Among them was the belief that vitiligo is contagious or that it is associated with the habit of intake of certain food. Also a considerable percentage of them reported that they will not marry from a person with vitiligo person. Therefore, educating the young females about vitiligo could lead to increased self-confidence, better social integration, and psychological well-being for vitiligo patients.

REFERENCES

1. Jimbow K. Vitiligo: Therapeutic advances. *Dermatol Clin.*, 1998; 16: 399-407.
2. Zhang XJ, Chen JJ, Liu JB. The genetic concept of vitiligo. *J Dermatol Sci.*, 2005; 39: 137-46
3. Krüger C1, Schallreuter KU. A review of the worldwide prevalence of vitiligo in children/adolescents and adults. *Int J Dermatol.*, 2012 Oct; 51(10): 1206-12.
4. Chren MM, Lasek RJ, Sahay AP, Sands LP. Measurement properties of Skindex-16: a brief quality of life measurement for patients with skin disease. *J Cutan Med Surg* 2001; 5: 105-10.

5. Al-Shobaili HA. Treatment of vitiligo patients by excimer laser improves patients' quality of life. *J Cutan Med Surg.*, 2014 Oct; 18(5): 1-7.
6. Ingordo V, Cazzaniga S, Medri M, Raone B, Diguseppe MD, Musumeci ML, et al. To What Extent Is Quality of Life Impaired in Vitiligo? A Multicenter Study on Italian Patients Using the Dermatology Life Quality Index. *Dermatology.* 2014 Oct 25. [Epub ahead of print]
7. Kent G. Psychological effects of vitiligo: a critical incident analysis. *J Am Acad Dermatol.*, 1996; 35: 895-8.
8. Porter J, Beuf AH, Lerner A, Nordlund J. Response to cosmetic disfigurement: patients with vitiligo. *Cutis.*, 1987; 39: 493-4.
9. Kent G, Al'Abadie M. Psychologic effects of vitiligo: a critical incident analysis. *J Am Acad Dermatol.*, 1996; 35: 895-8
10. Shaffrali FC, Gawkrödger DJ. Management of vitiligo. *Clin Exp Dermatol.*, 2000; 25: 575-9.
11. Al Robaee AA, Al Zolibani A, Al-Shobaili H. Knowledge and attitude towards vitiligo in Qassim Locality, Saudi Arabia. *Journal of Pakistan Association of Dermatologists.*, 2008; 18: 78-83.
12. AlGhamdi KM, Moussa NA, Mandil A, AlKofidi M, Madani A, Nojoud AlDaham N, et al. Public perceptions and attitudes toward vitiligo. *Journal of Cutaneous Medicine and Surgery*, 2012; 16(5): 334–340.
13. Thompson AR, Clarke SA, Newell RJ, Gawkrödger DJ. Appearance Research Collaboration (ARC). Vitiligo linked to stigmatization in British South Asian women: a qualitative study of the experiences of living with vitiligo. *Br J Dermatol.*, 2010; 163: 481-6
14. Kent G, Al'Abadie M. Psychologic effects of vitiligo: a critical incident analysis. *J Am Acad Dermatol.*, 1996; 35: 895-8.
15. Mattoo SK, Handa S, Kaur I, Gupta N, Malhotra R. Psychiatric morbidity in vitiligo and psoriasis: a comparative study from India. *J Dermatol.*, 2001; 28: 424-32.
16. Sampogna F, Raskovic D, Guerra L, et al. Identification of categories at risk for high quality of life impairment in patients with vitiligo. *Br J Dermatol.*, 2008; 159: 351–9
17. Parsad D, Dogra S, Kanwar AJ. Quality of life in patients with vitiligo. *Health Qual Life Outcomes.*, 2003; 1: 58.
18. Mattoo SK, Handa S, Kaur I, et al. Psychiatric morbidity in vitiligo: prevalence and correlates in India. *J Eur Acad Dermatol Venereol.*, 2002; 16: 573–8
19. Al Robaee AA. Assessment of quality of life in Saudi patients with vitiligo in a medical school in Qassim province, Saudi Arabia. *Saudi Med J.*, 2007; 28: 1414-1417.