



## **Prevalent Beliefs and Attitude toward Vitiligo among Public in Al Baha Province, Southern Saudi Arabia**

**Hasan S. AL-Ghamdi<sup>1\*</sup>, Mohammed Ali M. Alzahrani<sup>2</sup>, Aziz Alsohaimi<sup>1</sup>,  
Saif Abadi Alzahrani<sup>3</sup>, Mohammed Hassan Alzahrani<sup>4</sup>,  
Osama Saeed Ali AlGhamdi<sup>5</sup> and Mohammed Abdullah M. AlGhamdi<sup>5</sup>**

<sup>1</sup>Internal Medicine Department, Albaha University, Saudi Arabia.

<sup>2</sup>Saudi Board of Emergency Medicine, Riyadh, Saudi Arabia.

<sup>3</sup>Saudi Board of Preventive Medicine, Jeddah, Saudi Arabia.

<sup>4</sup>Saudi Board of Family Medicine, Albaha, Saudi Arabia.

<sup>5</sup>Medical Interns, Albaha University, Saudi Arabia.

### **Authors' contributions**

*This work was carried out in collaboration among all authors. Authors HSAG and MAMA designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AA and SAA managed the analyses of the study. Authors MHA, OSAA and MAMA managed the literature searches. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Introduction:** Vitiligo is an apparent skin condition that has a psychological impact on the affected individuals and their families. Its prevalence is estimated to be about (0.5-2%) globally. Misunderstandings, and negative attitudes toward vitiligo patients are the most important factors affecting the quality of life of vitiligo patients.

**Objective:** The objective of this study was to identify the common misconceptions and attitudes about the nature, causes and prognosis of vitiligo in Al-Baha region, Saudi Arabia.

**Methods:** A cross sectional study collected data from the general population in the public malls in Al-Baha region, Saudi Arabia. We used a questionnaire which was developed by the authors, the questionnaire included questions regarding vitiligo cause, nature, prognosis and the attitude toward vitiligo.

\*Corresponding author: E-mail: Dr.hasan33@hotmail.com;

**Results:** A total of (453) responses were analysed, of which (53%) were females, and (90.9%) were Saudis. The participants' ages ranged from (16 -64) with a mean of (28.3). The majority of our sample had a high level of education; university (65.1%), High school (26%) and less than high school (6%). Our population believed that gecko and its saliva were the commonest cause (38.1%). Most of the respondents (44.4%) thought that the condition is exaggerated by stress and anxiety. Regarding attitude; (31.5%) are unwilling to marry a vitiligo patient.

**Conclusion:** The results of the present study show that the misconceptions and attitudes toward vitiligo are prevalent. Health awareness campaigns should be implanted to educate the people and improve the quality of life of the affected individuals.

*Keywords: Al-Baha; attitude; misconception; Saudi Arabia; vitiligo.*

## 1. INTRODUCTION

Vitiligo is an apparent skin condition that has a huge psychological impact on the affected individuals and their families. [1,2] The worldwide prevalence of the diseases is estimated to be about 0.5 to 2% of the general population [3-5].

Vitiligo tends to be more common among females, and the most affected age group is 18 - 30 years' old. [4] Another study has suggested that the age of 17.4 is the mean age of onset [5].

Vitiligo is clinically characterized by the milky white depigmented macules and patches that can present at any site of the body including mucus membrane and genital areas. The impact on quality of life was found to be worse in those with genital lesions [6].

The exact etiology of vitiligo is still unknown, although, it is thought that the lesions are a result of multiple factors, including; genetic factors, metabolic alterations, oxidative stress, exogenous stimuli, and autoimmunity [7-11].

There are many misunderstandings and misconceptions regarding vitiligo, they are observed in the general population and among the affected individuals as well, with some evidence suggesting that vitiligo patients are more educated about their condition [12-13]. Although that some studies have found that a large percentage of vitiligo patients are still not well educated about the nature of the disease, but generally, they are more considered to be more educated than non-affected individuals [14-15].

The common misconceptions regarding the cause are as follow; infections, inheritance, exposure to chemicals, nutrients deficiency and consumption of the milk. Other myths include

that the disease is untreatable, precancerous, or exaggerated by the sun [13,16-17].

From a Chinese perspective, the management involves topical corticosteroids and vitamin D analogs, beside phototherapy including PUVA and NBUBV [7]. While in Saudi Arabia, the common methods are topical steroids and NBUBV. [18] in both countries, the underutilization of surgical options and systemic treatment is noted. Misconceptions continue to be present even at the treatment perspective [19].

The knowledge about vitiligo was found to be inefficient in the Kingdom of Saudi Arabia, although, there are no previous studies that have investigated the knowledge and attitude regarding vitiligo in Al-Baha region. Therefore, this study was meant to measure the common misconceptions regarding vitiligo in Al-Baha region.

## 2. METHODOLOGY

### 2.1 Design

A cross sectional study targeting the general population in Al-Baha region. The data collection took place in the largest malls in the region.

### 2.2 Sample

All the attendants were invited, eligible and welcome to participate in the study. The diseased patients were included as well.

Exclusion criteria included children below 16 years, questionnaires with more than 4 unanswered questions, forms filled improperly, and forms with missed personal information like age and gender.

In case of illiterate participants, the investigators were nearby to read the questionnaire and fill out the form.

The sample size was calculated using a website (Raosoft), with a confidence level of (95%), margin of error (5%) and an estimated population visiting the malls during the week of (10,000). The required sample size was found to be (357), the authors have agreed to increase the required sample size by (20%) to overcome the missed or falsely answered questionnaires.

### 2.3 Tools and Data Collection

The present study has used a questionnaire that was written by the authors in Arabic language. The data collection took place from 26<sup>th</sup> of April until 15<sup>th</sup> of May 2018, in all days of the week and not specifically workdays or weekends.

Investigators were able to collect a total of (480) responses. Of which, only (453) responses were entered and analysed, data lacking important personal information such as gender, age, and educational level were excluded along with falsely filled questionnaires.

The questionnaire included questions regarding sociodemographic characteristics in addition to populations' thoughts about vitiligo cause, nature, prognosis and their attitude.

### 2.4 Data Analysis

A computer program (SPSS, version 21.0) was used to analyze the collected forms. Frequency tables were used to demonstrate the sociodemographic distribution and responses to basic questions regarding knowledge and attitude. Pearson Chi-Square test was used to determine the significant associations between variables.

## 3. RESULTS

### 3.1 Sociodemographic Data

A total of (453) responses was analysed. Of which (53%) were females, and (90.9%) were Saudis. The participants' ages ranged from (16-64) with a mean of (28.3). The majority had indicated a high level of education; university (65.1%), High school (26%) and less than high school (6%). Of all our samples (15.2%) have indicated high income, while the majority (72.2%) has indicated moderate income.

### 3.2 Beliefs about the Cause of Vitiligo

The causes that were suggested by the authors in the questionnaire were as follows; Infection, food (such as milk and dairy products), gecko and its saliva, chemical exposure, and low hygiene. The reason why authors have chosen those factors in specific is due to cultural beliefs which were supported by the literature. The rates of beliefs regarding vitiligo causes are shown in (Table 2).

### 3.3 Beliefs about the Nature of the Disease

Participants were asked to answer about what they think about the origin of vitiligo, is it an autoimmune disease or an inherited disease. While the majority were not sure if it is an autoimmune disease, the responses were varied regarding the inheritance. Most of the respondents thought that the disease is exaggerated by stress and anxiety, especially those who have a positive family history, but are not affected (P-value=0.045). Results about the nature of the disease are shown in (Table 1).

### 3.4 Beliefs Regarding the Effect of Vitiligo and Its Prognosis

The existence of a cure, the likelihood of causing cancer, and being a killer disease were the questions related to vitiligo effect and prognosis. Those who have indicated university as an educational level did not think that vitiligo is a killer disease (P-value=0.001). However, the results reported by our sample about vitiligo effect and prognosis are shown in (Table 3).

### 3.5 Attitudes toward Vitiligo

Regarding attitude towards vitiligo patients, those who have a family member affected by vitiligo had a less negative attitude toward the disease; eating food prepared by a vitiligo patient (P-value=0.038), avoid hand shaking (P-value=0.479), hiring a vitiligo patient as a manager (P-value=0.055), marrying an affected person (P-value=0.095), and staring at a vitiligo patient (P-value=0.352). Those who believed that gecko and its saliva are causing the disease tend to have more negative attitudes towards vitiligo, where they have stated that they would avoid hand shaking with vitiligo patients (P-value=0.003), would not eat food prepared by

them (P-value=0.001), would not hire a vitiligo patient (P-value=0.010), and would not marry an affected individual (P-value=0.006). The frequency of negative attitude is shown in (Table 4).

#### 4. DISCUSSION

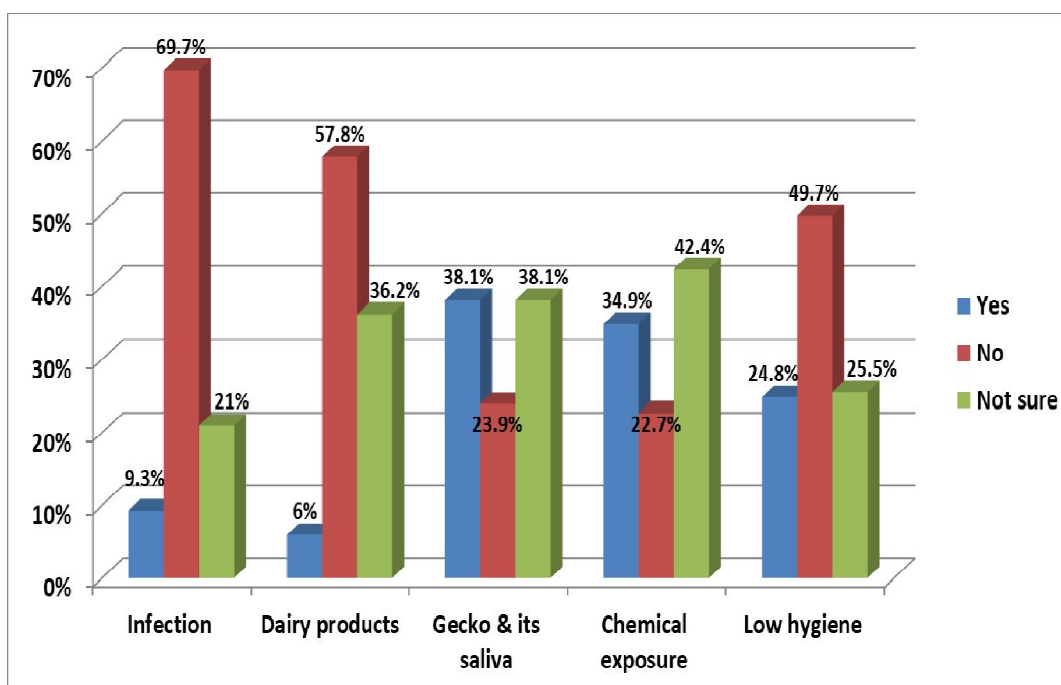
Many studies have shown that there is a difference between perception of vitiligo among the general population and those who are diseased, and many have emphasized that affected individuals have higher levels of

knowledge, from which the doctors were the source of information. [12,15,16].

In Alreshidi [20] study; concerning vitiligo misconceptions in northern Saudi Arabia, more than two thirds recognized the disease, and (59%) believed that the disease is inherited. Regarding attitude in the same study, a large percentage have stated that they would prevent marriage from an affected individual (73.8%). While in our study; (38.7%) believed that the disease is inherited and only (31.5%) would not marry a vitiligo patient.

**Table 1. Percentages of beliefs regarding the nature of the disease**

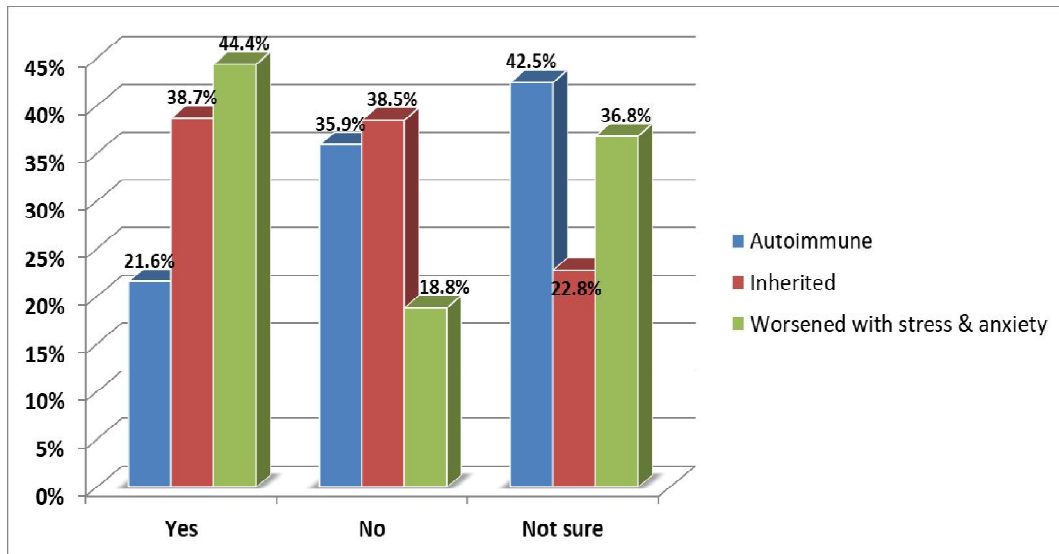
	Yes	No	Not sure
Autoimmune	21.6%	35.9%	42.5%
Inherited	38.7%	38.5%	22.8%
Worsened with stress & anxiety	44.4%	18.8%	36.8%



**Graph 1. Percentages of beliefs regarding vitiligo cause**

**Table 2. Percentages of beliefs regarding vitiligo cause**

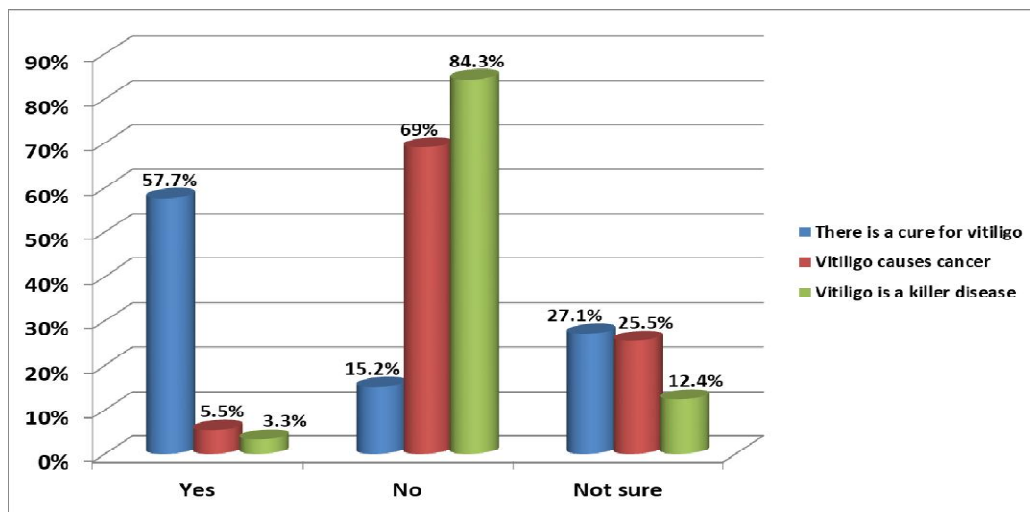
	Yes	No	Not sure
Infection	9.3%	69.7%	21.0%
Dairy products	6.0%	57.8%	36.2%
Gecko & its saliva	38.1%	23.9%	38.1%
Chemical exposure	34.9%	22.7%	42.4%
Low hygiene	24.8%	49.7%	25.5%



Graph 2. Percentages of beliefs regarding the nature of the disease

Table 3. Percentages of beliefs regarding the effect & prognosis of the disease

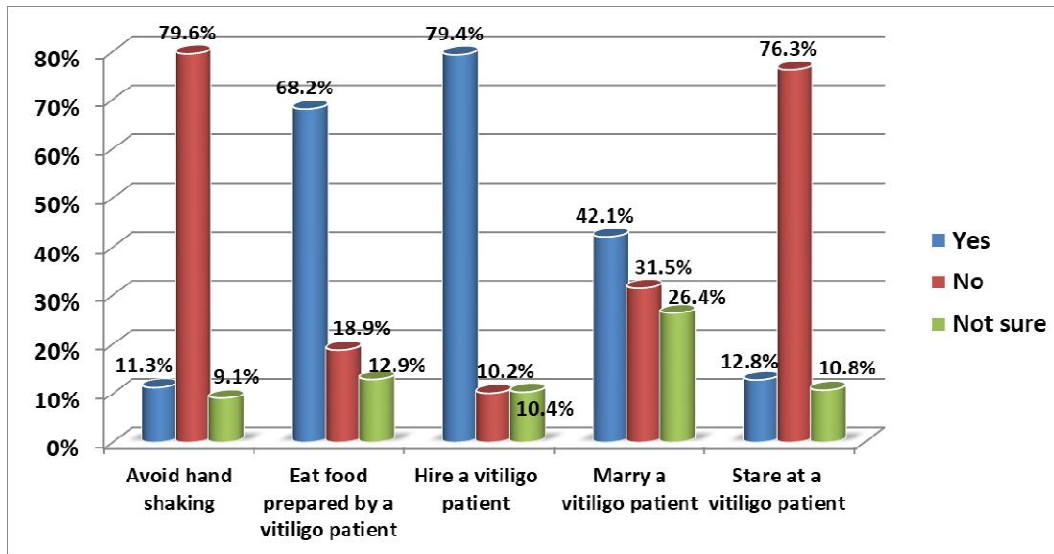
	Yes	No	Not sure
There is a cure for vitiligo	57.7%	15.2%	27.1%
Vitiligo causes cancer	5.5%	69.0%	25.5%
Vitiligo is a killer disease	3.3%	84.3%	12.4%



Graph 3. Percentages of beliefs regarding the effect & prognosis of the disease

Table 4. Percentages regarding attitudes toward vitiligo

	Yes	No	Not sure
Avoid hand shaking	11.3%	79.6%	9.1%
Eat food prepared by a vitiligo patient	68.2%	18.9%	12.9%
Hire a vitiligo patient	79.4%	10.2%	10.4%
Marry a vitiligo patient	42.1%	31.5%	26.4%
Stare at a vitiligo patient	12.8%	76.3%	10.8%



**Graph 4. Percentages regarding attitudes toward vitiligo**

Alshahrani et al [11] have investigated the awareness about vitiligo among university female students in Abha, Saudi Arabia. The results showed that (64.7%) did not think that vitiligo is a dangerous disease, (56.7%) recognized that there is a treatment for vitiligo, (54.3%) did not believe that vitiligo is associated with any type of food, (52.2%) thought that it is associated with stress, and (49.4%) stated that vitiligo is an autoimmune disease. Our results are fairly supporting Alshahrani findings, where the majority (84.3%) of our sample didn't consider vitiligo as a killer disease. In our study, of all the population (44.4%) thought that the disease is exaggerated by stress and anxiety, while only (21.6%) recognized it as an autoimmune disease. Other findings regarding the existence of a treatment and the association with a special type of food are quite similar to what is suggested by Alshahrani.

Asati et al. [17] have indicated generally poor scores for attitudes, and good scores for the knowledge. While they could not find any significant association between knowledge and attitude, in our study, negative attitudes were strongly associated with poor knowledge. The significance was highest with those who think that gecko and its saliva are causing vitiligo; avoid hand shaking (P-value=0.003), eat food prepared by a vitiligo patient (P-value=0.001), hire a diseased person (P-value=0.010), marry a vitiligo patient (P-value=0.006), and would stare at an affected individual (P-value 0.042). This finding of poor knowledge being associated with

attitude is also coherent with a previous study, where Fatani et al. [4] have indicated that people who think that vitiligo is infectious or caused by certain types of food have negative attitudes towards the disease.

In a study that was conducted in central Saudi Arabia by AlGhamdi et al. [13] to determine the public perceptions and attitudes toward vitiligo; (33.1%) believed that vitiligo is contagious or did not know, (22.5%) thought that it is due to lack of hygiene. Similarly, in our study, (30.3%) thought that it is infectious or were not sure, and (28.4%) considered low hygiene as a cause.

## 5. CONCLUSION

Misconceptions are prevalent, with gecko and its saliva as a cause being the most frequent misconception reported, as it had negatively affected the attitude towards the disease. Among attitudes, being unwell to marry a vitiligo patient comes at the top of the list with almost one third of the studied population. While wide misconceptions and negative attitudes are prevalent in southern Saudi Arabia, it is highly recommended to implicate health campaigns to increase the awareness regarding vitiligo.

## CONSENT

Also, an individual consent was obtained from all participants after explaining the nature and purpose of the study.

## ETHICAL APPROVAL

The present study is ethically approved by the ethical committee of the higher education and scientific research department in the faculty of medicine in Al-Baha University, Saudi Arabia.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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