

## Prevalence of Vitiligo and Identification of Risk Factors in Young Patients

Dr. Ola Raheem Abbas<sup>1</sup>, Dr. Suha Dhumad Al-Maliki<sup>2</sup>, Dr. Heyam Abdulla Hussain Al-Obaidi<sup>3</sup>, and Dr. Ali Qais Abdulkafi<sup>4</sup>

<sup>1</sup>M.B.Ch.B., F.I.C.M.S. \ (Dermatology and Venereology), Ministry of Higher Education and Scientific Research, Jabir Ibn Hayyan University for Medical and Pharmaceutical Sciences, Faculty of Medicine, Al-Najaf, Iraq.

<sup>2</sup>M.B.Ch.B., F.I.B.M.S. \ (Dermatology and Venereology), Iraqi Ministry of Health, Basrah Health Directorate, Basrah Teaching Hospital, Basrah, Iraq.

<sup>3</sup>M.B.Ch.B., F.A.B.M.S. \ (Dermatology and Venereology), F.J.M.C. \ (Dermatology and Venereology), Iraqi Ministry of Health, Kirkuk Health Department, Kirkuk Teaching Hospital, Kirkuk, Iraq.

<sup>4</sup>M.B.Ch.B., D.C.H. \ (Pediatrics), Iraqi Ministry of Health, Kirkuk Health Department, Kirkuk Teaching Hospital, Kirkuk, Iraq.

**Abstract:** Background: Vitiligo is a skin pigmentation disorder characterized by areas of depigmentation so that patients have white spots on the skin. Objective: This study was enrolled clinical outcomes related to vitiligo and determine primary risk factors affected young patients. Patients and methods: 90 patients with vitiligo were recruited, and their clinical data were collected in dermatology outpatient clinics in different hospitals in Iraq during the study period, which ranged from February 8, 2022, to November 26, 2023. Furthermore, we evaluated the prevalence of skin diseases on patient quality of life using the Dermatology Life Quality Index (DLQI) scale and assessed indicators of depression through the Beck scale. Results: We enrolled clinical outcomes of vitiligo, which include young patients with ages (11 - 14) years included 36 cases, overweight included 27 cases, and obesity with 18 cases; the rate of patients who have comorbidities were 80%, which contains thyroid disorders was 40%, rheumatoid arthritis was 30%, systemic lupus erythematosus was 20%, inflammatory bowel disease was 60%, anxiety was 70%, depression was 40%, family history was 54.44%, duration of disease (years) which < 3 was 59 cases, while  $\geq 3$  was 31 cases, affected body parts included head and face had 58.89%, hands, and feet had 51.11%, and generalized had 55.56%, depigmented areas classified into mild with 18, moderate with 27 cases, and severe with 45 cases, skin disorders affect a patient's Vitiligo quality of life which include .exceptionally huge effect was 31 cases, very significant effect was 26 cases. Conclusion: Vitiligo has a major physical and psychological impact on young patients, affecting both their quality of life as well as their self-esteem.

**Keywords:** Vitiligo; Young patients; Beck scale; Quality of life; and risk factors.

## INTRODUCTION

Vitiligo is a persistent skin disorder that causes loss of color into the skin, leading to white areas [Gawkroder, D. J. *et al.*, 2010]. The specific etiology of vitiligo is unidentified, even though it is thought to be an autoimmune disorder whereby the body's immune system erroneously assaults and kills melanocytes, the cells which produce color in the skin. This results in the production of white spots on the skin. [Kruger, C. *et al.*, 2012]

Vitiligo is a chronic depigmenting disease that affects the quality of life of people who suffer from it. Where the degree of involvement of this, concomitant with vitiligo, can be measured by a scale called the Dermatology Life Quality Index (DLQI), which will be explained later. [Jarallah, J. S. *et al.*, 1993]

Vitiligo can have a substantial impact on young patients' mental and emotional health since the disorder is extremely apparent, causing feelings of anxiety and poor self-esteem [Alakloby, O. M, 2005]. Young vitiligo sufferers may face taunting, bullying, as well as social isolation, that can harm their mental health. [Shelleh, H. H. *et al.*, 2004]

The autoimmune origin of vitiligo is its association with other autoimmune diseases, which is one of the objectives of this work. Vitiligo is a component of SPAS (autoimmune polyglandular syndromes), and numerous studies have shown a specific association of vitiligo with thyroid pathology, pernicious anemia, Addison's disease, etc. [Lotti, T. *et al.*, 2014 – Amer, A. A. *et al.*, 2016]

The quality of life in people with vitiligo can be negatively modified because it generates a psychosocial impact in different ways, causing the feeling of discrimination or the fear of offensive comments regarding the physical, which can lead to a personality alteration or low self-esteem. [Morrison, B. *et al.*, 2017; Osinubi, O. *et al.*, 2018]

Approximately 50% of people with vitiligo develop it before the age of 20 and it has been shown that the disfiguring condition that this generates from childhood and adolescence is negatively associated with the quality of life in young adults. [Wang, G. *et al.*, 2018 – Grimes, P. E. *et al.*, 2018]

It affects around 1% of the global population, independent of skin color or ethnic origin. The lesions form in either adolescence or childhood, peaking among the ages of ten and thirty, but may develop at any age [Papadopoulos, L. et al., 1999]. All ethnicities are afflicted, with similar incidence in both sexes, albeit women visit the doctor more frequently in large part due to the cosmetic consequences that arise. Twenty percent of vitiligo sufferers had a first-degree relative who has the illness. Furthermore, relatives of these individuals that have not developed vitiligo-like lesions are 7 to 10 times more likely to appear with them than the general population. [Renzi, C. et al., 2002 - Al-Harbi, M, 2013]

A lower educational level has been reported to be associated with a greater impact on quality of life, it also found a relationship of quality of life with respect to the affected body surface area. With regard to VitiQoL, it was found that patients with genital involvement had a higher percentage than those without such involvement. [Mattoo, S. et al., 2002]

A French study mentioned above conducted an investigation of the DLQI involvement according to the affected area (face, neck, head, hand, trunk, genitals, and legs), which showed that vitiligo in the head, face, and neck (exposed areas) substantially affects the quality of life [Chan, M. F. et al., 2012]. Also, in a study conducted in the United Kingdom, 58% of people stated that injuries to the genitals (non-exposed area) generate affectation. [Kota, R. S. et al., 2019]

## PATIENTS AND METHODS

### Setting

We conducted a cross-sectional study of 90 patients with vitiligo, where all clinical and demographic data related to the patients were collected from dermatology outpatient clinics in different hospitals in Iraq for a period that lasted from February 8, 2022, to November 26, 2023.

### Design and Population

We recorded the clinical and diagnostic data of patients suffering from vitiligo of both sexes who were included in this study during the period 2022–2023. This study excluded patients over the

age of 15, as well as those with serious health problems and patients with a previous history of psychiatric illness before the diagnosis of vitiligo was made.

### Data collection and recruitment

A questionnaire was created in which assessments were collected to examine the rate of depression using the Beck Depression Inventory (BDI), which serves as a tool to examine the rate of depression associated with young patients after diagnosis; the questionnaire included 13 factors that included sadness, pessimism, feelings of failure, dissatisfaction, guilt, self-hatred, self-harm, and social withdrawal. Hesitation, changing self-image, difficulty working, fatigue, and loss of appetite, range in rate from (0–39), which is classified into (0–4) normal, (5–7) mild, (8–15) moderate, and (16 or more) severe. We also administered a Dermatology Life Quality of Life Instrumentation (DLQI) questionnaire to determine the impact of skin disorders on the patient's quality of life. It consists of ten items that address topics including symptoms and feelings, daily activities, leisure, work and school, interpersonal relationships, and treatment. The DLQI scale ranges from 0 to 30, with higher scores indicating that skin conditions have a greater impact on quality of life. A score of 0-1 shows no effect; 2-5 indicates little effect; 6-10 indicates a significant effect; 11-20 indicates a very large effect; 21-30 indicates tremendous influence.

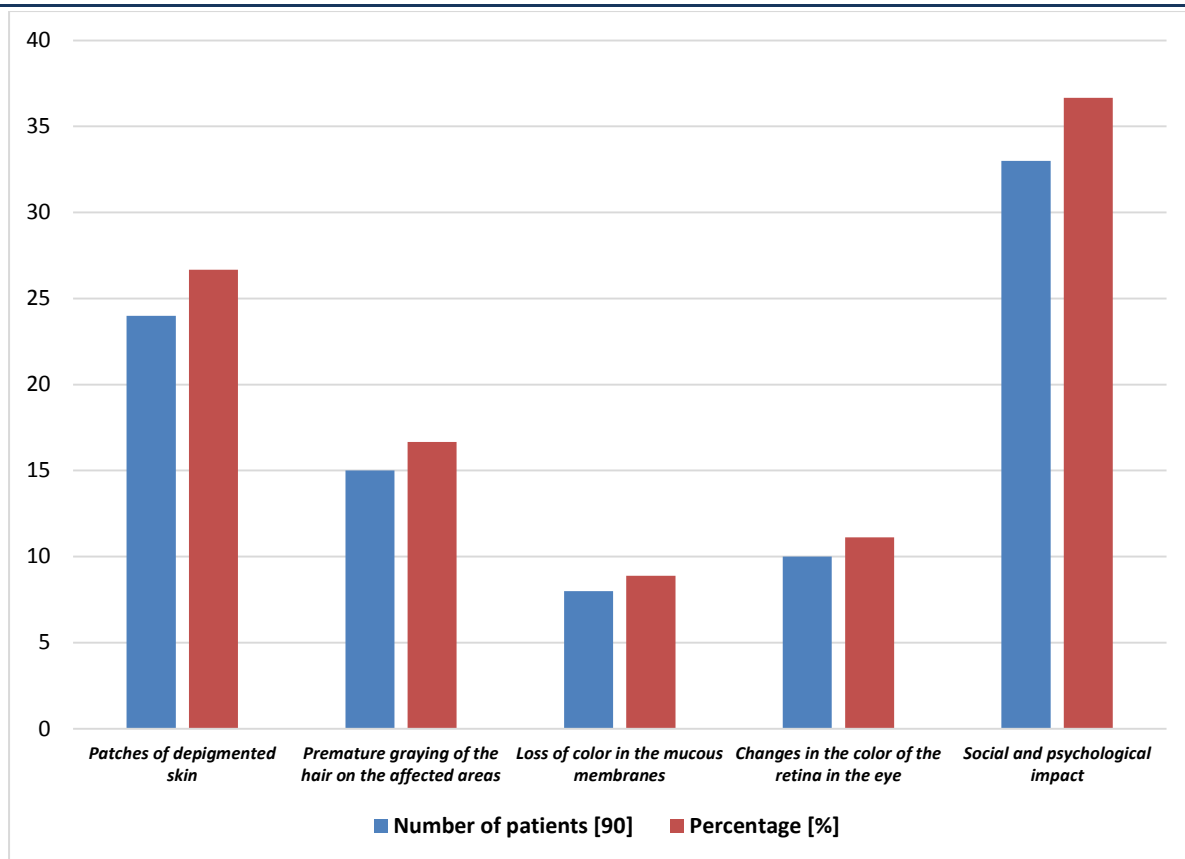
### Statistical Analysis

Categorical variables were represented as frequencies and percentages. Continuous variables were shown in averages as well as standard deviations (SD). The presence and severity of depression were compared using the Chi-squared test or Fisher's exact test, as applicable, based on demographic and clinical data. All p-values are considered two-tailed. A p-value < 0.05 was considered statistically significant. All statistical analyses were performed using the SPSS program, Version 25.0.

## RESULTS

**Table 1:** Demographic and demographic characteristics

Characteristics	Number of patients [90]	Percentage [%]
<b>Age</b>		
2 – 6	23	25.56%
7 – 10	31	34.44%
11 – 14	36	40.0%
<b>Sex</b>		
Male	27	30.0%
Female	63	70.0%
<b>BMI, Kg/m2</b>		
Underweight	9	10%
Normal weight	36	40%
Overweight	27	30%
Obesity	18	20%
<b>Comorbidities</b>		
Yes	72	80%
No	18	20%
Thyroid disorders	36	40%
Rheumatoid arthritis	27	30%
Systemic lupus erythematosus	18	20%
Inflammatory bowel disease	54	60%
Anxiety	63	70%
Depression	36	40%
<b>Family history</b>		
Yes	49	54.44%
No	41	45.56%
<b>Type of treatment</b>		
None	36	40.0%
Local	30	33.33%
Additional phototherapy	24	26.67%
<b>Duration of disease (years)</b>		
< 3	59	65.56%
≥ 3	31	34.44%
<b>ASA, %</b>		
I	13	14.44%
II	25	27.78%
III	34	37.78%
IV	18	20.0%
<b>Parents factors</b>		
<b>Smoking status</b>		
Yes	28	31.11%
No	62	68.89%
<b>Education status</b>		
Not in the school	18	20.0%
Primary	17	18.89%
Secondary	22	24.44%
University/college	33	36.67%
<b>Economic status, \$</b>		
< 600	24	26.67%
600 – 800	34	37.78%
> 800	32	35.56%



**Figure 1:** Identifying symptoms related to vitiligo in young patients.

**Table 2:** Distribution of affected body parts and depigmented areas by Vitiligo Area Scoring Index (VASI) on young patients with vitiligo

Affected body parts		
Parameters	Number of patients [90]	Percentage [%]
Head and face	53	58.89%
Hands and feet	46	51.11%
Generalized	50	55.56%
Depigmented areas		
Parameters	Number of patients [90]	Percentage [%]
Mild, (0 – 25)	18	20%
Moderate, (25 – 50)	27	30%
Severe, (Above 50)	45	50%

**Table 3:** Complications associated with Vitiligo in young patients

Complications	Number of patients [90]	Percentage [%]
Psychological distress	8	8.89%
Social stigma	9	10.0%
Sunburn and skin cancer risk	11	12.22%
Ocular complications	10	11.11%
Autoimmune disorders	16	17.78%
Total	54	60%

**Table 4:** Assessment of skin disorders affect a patient's Vitiligo quality of life by Dermatology Quality of Life Index (DLQI)

Items	Number of patients [90]	Percentage [%]
No impact (0 - 1)	3	3.33%
Little effect (2 - 5)	10	11.11%
Considerable effect (6 - 10)	20	22.22%
Very significant effect (11 - 20)	26	28.89%
Exceptionally huge effect (21 - 30)	31	34.44%

**Table 5:** Identification of risk factors affected on young patients with Vitiligo

Risk factors	OR	CI 95%
Sex [female]	4.35	0.5 – 7.6
Family history	2.8	0.8 – 3.7
Autoimmune disorders	1.1	0.6 – 1.8
Patches of depigmented skin	2.3	1.4 – 2.9
Response to previous treatments	3.6	2.7 – 8.6
Sunburn and skin cancer risk	6.5	3.2 – 12.9
Psychological distress	5.5	3.7 – 7.9
Head and face	4.2	2.6 – 6.5
Premature graying of the hair on the affected areas	7.7	2.8 – 14.3
Anxiety	1.9	0.8 – 2.6
Depression	0.8	0.3 – 1.7

**DISCUSSION**

Clinical outcomes were found that young patients with ages (11 - 14) years included 36 cases, followed by patients with ages (7-10) years were 31 cases; females were the greatest rate which included 63 cases to compare with males included 27 cases; BMI indicators were classified into underweight which got 9 cases, normal weight included 36 cases, overweight included 27 cases, and obesity with 18 cases, rate of patients who have comorbidities were 80%, which contains thyroid disorders was 40%, rheumatoid arthritis was 30%, systemic lupus erythematosus was 20%, inflammatory bowel disease was 60%, anxiety was 70%, depression was 40%, family history was 54.44%, duration of disease (years) which < 3 was 59 cases, while ≥ 3 was 31 cases,

In addition, the most common symptoms were patches of depigmented skin had 24 cases, social and psychological impact had 33 cases, premature graying of the hair on the affected areas had 15 cases, affected body parts included head and face had 58.89%, hands, and feet had 51.11%, and generalized had 55.56%, depigmented areas classified into mild with 18, moderate with 27 cases, and severe with 45 cases.

Also, we identified the main complications, which include autoimmune disorders, which included 16 cases; ocular complications had 10 cases; sunburn and skin cancer risk with 11 cases; psychological distress with 8 cases; and social stigma with 9

cases as well. As we found, young patients have an exceptionally huge effect was 31 cases and a very significant effect was 26 cases. Furthermore, we enrolled risk factors, which most prevalence and effect associated with vitiligo contained family history, Sex [female], autoimmune disorders, anxiety, depression, psychological distress, head and face, and patches of depigmented skin.

Last studies were shown Vitiligo is a skin condition characterized by the loss of skin pigment, resulting in white patches on the skin. It can affect people of all ages, including young patients. The prevalence of vitiligo in young patients is estimated to be around 1-2% worldwide. [Beck, A. T. et al., 1972; Al-Qadhi, W. et al., 2014]

The effects of vitiligo on young patients can be both physical and psychological. Physically, vitiligo does not cause any direct harm to the body, but it can be cosmetically distressing for some individuals, where the white patches can be particularly noticeable in young patients, as they may be self-conscious about their appearance. [Alibrahim, O. A. et al., 2010]

Some studies indicated vitiligo can have a significant impact on young patients, leading to feelings of low self-esteem, anxiety, and depression, where young patients may experience social stigma and discrimination due to their condition, which can affect their overall quality of

life. [Al Rashed, A. S. et al., 2019; Kostopoulou, P. et al., 2009]

Furthermore, A French study was found Vitiligo can have a negative psychological influence on young patients, causing poor self-esteem, anxiety, and sadness. Young patients may face social stigma and prejudice as a result of their disease, decreasing their overall quality of life. [Ahmed, A. et al., 2018]

## CONCLUSION

Our current study indicates that vitiligo has a significant negative impact on young patients in terms of physical, psychological, and emotional aspects. Furthermore, this study found that genetic predisposition, autoimmune factors, environmental triggers, and depression represent the most serious factors that impair the long-term quality of life in young patients.

## REFERENCES

- Gawkrodger, D. J., Ormerod, A. D., Shaw, L., Mauri-Sole, I., Whitton, M. E., Watts, M. J., Anstey, A. V., Ingham, J. & Young, K. "Vitiligo: concise evidence-based guidelines on diagnosis and management." *Postgrad Med J*, 86.1018 (2010): 466–471.
- Kruger, C. & Schallreuter, K. U. "A review of the worldwide prevalence of vitiligo in children/adolescents and adults." *Int J Dermatol*, 51.10 (2012): 1206–1212.
- Jarallah, J. S., Al-Sheikh, O. A., El-Shabrawy, M. & Al-Wakeel, M. A. "Vitiligo: Epidemiology and clinical pattern at King Khalid University Hospital." *Ann Saudi Med*, 13.4 (1993): 332–334.
- Alakloby, O. M. "Pattern of skin diseases in Eastern Saudi Arabia." *Saudi Med J*, 26.10 (2005): 1607–1610.
- Shelleh, H. H. & Al-Hatiti, H. S. "Pattern of skin diseases in a hospital in southwestern Saudi Arabia." *Saudi Med J*, 25.4 (2004): 507–510.
- Lotti, T., Zanardelli, M. & D'Erme, A. M. "Vitiligo: what's new in the psycho-neuro-endocrine-immune connection and related treatments." *Wien Med Wochenschr*, 164.13-14 (2014): 278–285.
- Silverberg, J. I. & Silverberg, N. B. "Vitiligo disease triggers psychological stressors preceding the onset of the disease." *Cutis*, 95.5 (2015): 255–262.
- Nguyen, C. M., Beroukhim, K., Danesh, M. J., Babikian, A., Koo, J. & Leon, A. "The psychosocial impact of acne, vitiligo, and psoriasis: a review." *Clin Cosmet Investig Dermatol*, 9 (2016): 383–392.
- Amer, A. A. & Gao, X. H. "Quality of life in patients with vitiligo: an analysis of the dermatology life quality index outcome over the past two decades." *Int J Dermatol*, 55.6 (2016): 608–614.
- Morrison, B., Burden-Teh, E., Batchelor, J. M., Mead, E., Grindlay, D. & Ratib, S. "Quality of life in people with vitiligo: a systematic review and meta-analysis." *Br J Dermatol*, 177.6 (2017): e338–e339.
- Osinubi, O., Grainge, M. J., Hong, L., Ahmed, A., Batchelor, J. M., Grindlay, D., Thompson, A. R. & Ratib, S. "The prevalence of psychological comorbidity in people with vitiligo: a systematic review and meta-analysis." *Br J Dermatol*, 178.4 (2018): 863–878.
- Wang, G., Qiu, D., Yang, H. & Liu, W. "The prevalence and odds of depression in patients with vitiligo: a meta-analysis." *J Eur Acad Dermatol Venereol*, 32.8 (2018): 1343–1351.
- Lai, Y. C., Yew, Y. W., Kennedy, C. & Schwartz, R. A. "Vitiligo and depression: a systematic review and meta-analysis of observational studies." *Br J Dermatol*, 177.3 (2017): 708–718.
- Grimes, P. E. & Miller, M. M. "Vitiligo: Patient stories, self-esteem, and the psychological burden of disease." *Int J Womens Dermatol*, 4.1 (2018): 32–37.
- Papadopoulos, L., Bor, R. & Legg, C. "Coping with the disfiguring effects of vitiligo: a preliminary investigation into the effects of cognitive-behavioral therapy." *British Journal of Medical Psychology*, 72.3 (1999): 385–396.
- Renzi, C., Picardi, A., Abeni, D., Agostini, E., Baliva, G., Pasquini, P., Puddu, P. & Braga, M. "Association of dissatisfaction with care and psychiatric morbidity with poor treatment compliance." *Arch Dermatol*, 138.3 (2002): 337–342.
- AlGhamdi, K. M. "Beliefs and perceptions of Arab vitiligo patients regarding their condition." *Int J Dermatol*, 49.10 (2010): 1141–1145.
- Al-Harbi, M. "Prevalence of depression in vitiligo patients." *Skinmed*, 11.6 (2013): 327–330.
- Mattoo, S., Handa, S., Kaur, I., Gupta, N. & Malhotra, R. "Psychiatric morbidity in vitiligo: prevalence and correlates in India." *Journal of the European Academy of Dermatology and Venereology*, 16.6 (2002): 573–578.

20. Chan, M. F., Chua, T. L., Goh, B. K., Aw, C. W., Thng, T. G. & Lee, S. M. "Investigating factors associated with depression of vitiligo patients in Singapore." *J Clin Nurs*, 21.11-12 (2012): 1614–1621.
21. Kota, R. S., Vora, R. V., Varma, J. R., Kota, S. K., Patel, T. M. & Ganjiwale, J. "Study on Assessment of Quality of Life and Depression in Patients of Vitiligo." *Indian Dermatol Online J*, 10.2 (2019): 153–157.
22. Beck, A. T. & Beck, R. W. "Screening Depressed Patients in Family Practice." *Postgraduate Medicine*, 52.6 (1972): 81–85.
23. Al-Qadhi, W., Ur Rahman, S., Ferwana, M. S. & Abdulmajeed, I. A. "Adult depression screening in Saudi primary care: prevalence, instrument, and cost." *BMC Psychiatry*, 14.1 (2014): 190.
24. Alibrahim, O. A., Al-Sadat, N. & Elawad, N. A. "Gender and risk of depression in Saudi Arabia, a systematic review and meta-analysis." *Journal of Public Health in Africa*, 1 (2010).
25. Al Rashed, A. S., Al-Naim, A. F., Almulhim, B. J., Alhaddad, M. S., Al-Thafar, A. I., Alali, M. J., Aleem, A. M., Kashif, S. & Bougmiza, I. "Prevalence and associated factors of depression among the general population in Al-Ahsa, Kingdom of Saudi Arabia: A community-based survey." *Neurology, Psychiatry and Brain Research*, 31 (2019): 32–36.
26. Kostopoulou, P., Jouary, T., Quintard, B., Ezzedine, K., Marques, S., Boutchnei, S. & Taieb, A. "Objective vs... subjective factors in the psychological impact of vitiligo: the experience from a French referral centre." *Br J Dermatol*, 161.1 (2009): 128–133.
27. Ahmed, A., Steed, L., Burden-Teh, E., Shah, R., Sanyal, S., Tour, S., Dowe, S., Whitton, M., Batchelor, J. M. & Bewley, A. P. "Identifying key components for a psychological intervention for people with vitiligo—a quantitative and qualitative study in the United Kingdom using web-based questionnaires of people with vitiligo and healthcare professionals." *J Eur Acad Dermatol Venereol*, 32.12 (2018): 2275–2283.

**Source of support:** Nil;

**Conflict of interest:** Nil.

**Cite this article as:**

Abbas, O.R., Al-Maliki, S.D., Al-Obaidi, H.A.H. and Abdulkafi, A.Q. "Prevalence of Vitiligo and Identification of Risk Factors in Young Patients." *Sarcouncil Journal of Medical Series* 2.8 (2023): pp 5-11.