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KNOWLEDGE AND ATTITUDE REGARDING SYSTEMIC LUPUS ERYTHEMATOSUS AMONG THE POPULATION IN KINGDOM OF SAUDI ARABIA

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Abstract

Background: Systemic lupus erythematous is an autoimmune disease. It is characterized by systematic chronic inflammation, which sometimes can lead to multi-organ damage. The disease can occur in often unexpected flares, with uncertain low and high disease activity. It can affect the joints, skin, brain, lungs, kidneys, and blood vessels.

Objective: This study aims to estimate the knowledge and attitude regarding systemic lupus erythematosus among the population in Kingdom of Saudi Arabia.

Methodology: This study was conducted through using a descriptive (cross- sectional survey) among the Saudi population, both male and female population aged 15 to 45 was convenient sample chosen as study participants. The duration of our investigation is from 1st of November 2022 to the 1st of July 2024. Using the Raosoft calculator, A minimum sample size of 384 is expected, by using a 95% confidence level and 5% margin of error. The Statistical Package of Social ScienceSoftware was used for statistical analysis (SPSS) Program for data analysis.

Results: The study included 498 participants, 81.9% of them were females and 18.1% were males. 40.4% aged 20- 30 years old. 2% of participants have been diagnosed with SLE while 30% know someone who is diagnosed with SLE. 9.8% of participants have good knowledge score, 52.8% have moderate knowledge, and 37.3% have poor knowledge. 49.2% of participants have positive attitude towards SLE while 50.8% have negative attitude. As for knowledge, 96.6% reported that SLE patients should follow up with the attending physician and adhere to the plan. 28.5% know symptoms associated with lupus erythematosus. As for symptoms, 34.7% reported joint pain, 25.9% reported itching, and 10.2% reported hematuria. 50.4% reported that SLE has some complications. 13.1% reported that SLE affect the fertility of men and women. 29.7% think that SLE can cause fetal deformities or recurrent miscarriages for the affected mother. 90% reported that it is important to spread knowledge about SLE.

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34.1% reported that SLE is preventable. 51.2% reported that SLE is curable.

Conclusion: In conclusion, the participants exhibited poor knowledge and attitude towards SLE in Saudi Arabia. Knowledge was only significantly associated with gender while attitude was associated with age and educational level.

Keywords: Systemic lupus erythematous, attitude, knowledge.

Introduction

Systemic Lupus Erythematous (SLE or Lupus) is a complicated rheumatological disease with distinctive clinical manifestations [1]. SLE requires an interplay of genetic predisposition, environmental factors, immunological and hormonal precipitants to be recognized clinically [2]. It is identified by a wide spectrum of clinical manifestations and associated with autoantibodies that cause multi-organ damage [3]. SLE has for a long time been seen as a rare disease yet latest examinations have questioned this principle [4]. Although reports on SLE occurrence are conflicting, the generally speaking overall pattern is expanding concerning both pervasiveness and frequency. A right around 3-overlay expansionin new cases that accounted for during the earlier many years (50's-90's) [5].

However, a cording to ethnicity various examinations report an expanded recurrence of SLE in non-white individuals 5 to 9 crease expanded frequency comparing with 2 to 3 overlay expanded predominance in whites. Also, in specific nationalities like African-Caribbean and South/East Asians [6]. Additionally, Systematic lupus Erythematosus tends to start later in 5th to 7th decade of a man's life than in 3rd to 7th decade of women's life. Fortunately, childhood lupus refers only 10-20% of all cases [7]. Moreover, according to the gender, in all ages and ethnic groups, women are more likely to be affected than men. Women of childbearing age are most vulnerable with a 9 to 1 female to male ratio [8]. Studies have been published on public knowledge of Systemic Lupus Erythematosus in Al-Dammam city in Saudi Arabia. Study reported that the findings indicated a low level of knowledge and some misunderstandings about SLE 54 % don't know anything about SLE the majority of responders were unclear about the disease's consequences and course of therapy. According to 32% of respondents thought thatfemales more common to have SLE [9]. In 2018, a research has been conducted on knowledge of Systemic Lupus Erythematosus among students in King Faisal University and the result has shown that according to the study 60.9% of people are never heard of SLE. The majority of respondents lacked clarity in their understanding of disease diagnosis, treatment, and consequences 55.9% of respondents said that men were more likely than women to have SLE. The prevalence of this disease was said to be higher in women [10].

Very limited research exists on awareness and knowledge of systemic lupus erythematosus (SLE) among the population in the Kingdom of Saudi Arabia (KSA). Thus, the aim of this study is to estimate the range of knowledge and attitude levels about systemic lupus erythematosus (SLE) in the population of theKingdom of Saudi Arabia (KSA)

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Objective:

This study aims to assess the range of knowledge and attitude levels of systemiclupus erythematosus among the population in KSA.

Materials and Methods:

Study design:
This is a cross sectional a descriptive study. The study was conducted in the Kingdom of Saudi Arabia during the period from 1st of November 2022 to the 1st of July 2024, and assess the attitudeand knowledge level of SLE among the Saudi population.

Inclusion and Exclusion criteria:
Participants selection was be based on following inclusion criteria: The age of participants from 15 to 45, both males and females are included in thestudy from Saudi Arabia population and have to be agree to participate.

Sample size:
The sample size was calculated by the Raosoft calculator. The population of KSAas latest report in 2022 was 34110821 people. The minimum sample size expectedto be is 384 by using a 95% confidence level and 5% margin of error.

Method for data collection and instrument (Data collectionTechnique and tools):

An electric based, m odified, self-contained questionnaire composed of two parts.The first part contains demographic information, such as age, gender and residency. The second part gathered data on the participant's knowledge and attitude regarding Systemic Lupus Erythematosus.

Scoring system:
In our study, the knowledge was assessed using 11 questions, and six questionsfor attitude. A score of one was given for each correctly answered question in the knowledge part, while a score of zero was given for wrong or uncertain responses. A total score is determined for each question that was answered. Theknowledge scores range from 1 to 11. A knowledge score of >9 was rated as excellent, one between 6 and 9 as good, and one below 6 as poor. Prior to logistic regression analysis, excellent and good levels are reclassified as "sufficient knowledge" (scores 6 and above), and those with a low level of knowledge (scores 6 and below) are categorized as "insufficient knowledge." Regarding attitude score; Attitude score of 4 was rated as positive while below 4 was considered negative attitude.

Analyzes and entry method:
Data was entered on the computer utilizing the Windows version of the "Microsoft Office Excel Software" software (2017). Data will subsequently be imported to SPSS version 20's statistical package for social science software (IBMSPSS Statistics for Windows, version 20. 0. Armonk, NY: IBM Corp).

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The mean, median, and standard deviation of quantitative values was determined. However, qualitative data was displayed through the use of frequencies andpercentages. The p-value was 0.05 or less in order to evaluate statistical significance.

Results:

The study included 498 participants, 81.9% of them were females and 18.1% were males. 40.4% aged 20- 30 years old while 22.3% aged 41- 50 years old. 97% were Saudi. 82.3% live in the western region in the kingdom. 52.6% were university educated while 28.3% had post-graduate education. 50% were single and 46.2% were married. 31.5% study or work in health sector as in table (1).

Table (1): Sociodemographic characteristics of participants (n=498)

Parameter		**No.**	**%**
Gender	Male	90	18.1
	Female	408	81.9
Age	less than 20	73	14.7
	20 - 30	201	40.4
	31 - 40	65	13.1
	41 - 50	111	22.3
	51 - 60	48	9.6
Nationality	Saudi	483	97.0
	Non-Saudi	15	3.0
Region	Southern area	18	3.6
	The northern area	19	3.8
	Eastern Province	31	6.2
	Western Region	410	82.3
	Central Region	20	4.0
Education level	Primary stage	3	.6
	Intermediate stage	4	.8
	High school	88	17.7
	University stage	262	52.6
	Post-graduate	141	28.3
Social status	Single	249	50.0

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	Married	230	46.2
	Divorced	11	2.2
	Widowed	8	1.6
Study or work in health sector	Yes	157	31.5
	No	341	68.5

As illustrated in figure (1), 2% of participants have been diagnosed with SLE while 30% know someone who is diagnosed with SLE as in figure (2).

Figure (1): Prevalence of SLE among study participants (n= 498)

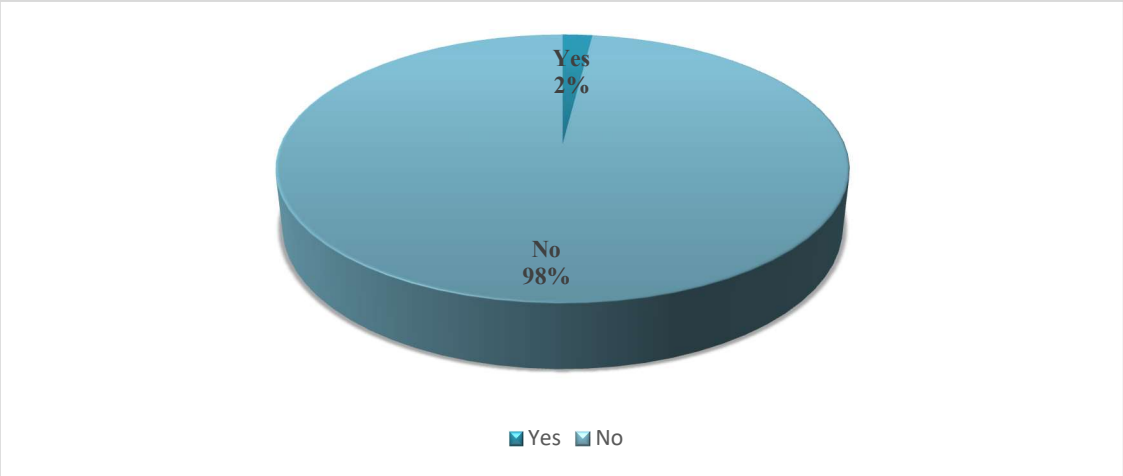
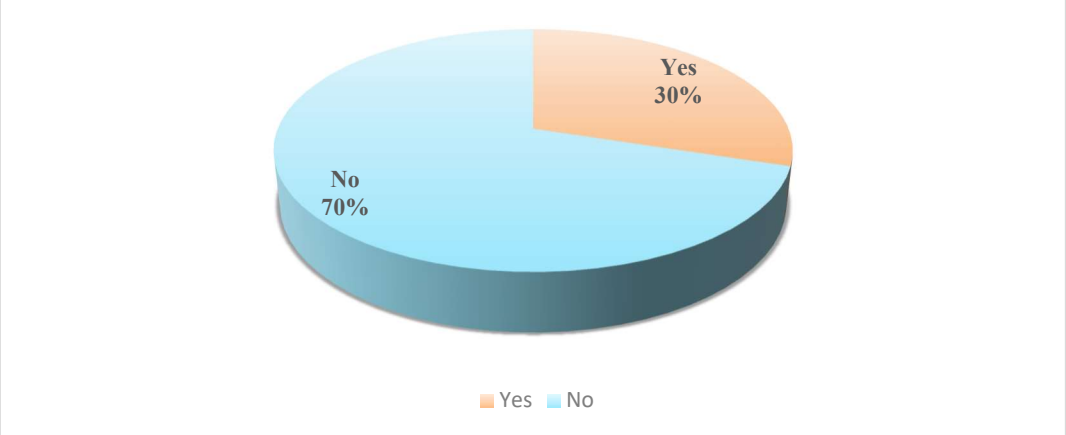


Figure (2): Participants who know someone been diagnosed with SLE (n= 498).



Regarding attitude in table (2), 93.6% reported that they would tell their wife/husband that have SLE

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while 74.3% are likely to tell their friends that they have SLE. 25.5% reported that SLE is fatal. 20.7% reported that SLE is not treatable. 43.2% reported that SLE is a genetic disease that can affect the offspring.

Table (2): Participants attitude towards SLE (n=498).

Parameter	Yes	No
If you have SLE, are you likely to tell your wife/husband that you have SLE?	466 93.6%	32 6.4%
If you have SLE, are you likely to tell your friends that you have SLE?	370 74.3%	128 25.7%
Systemic lupus fatal	127 25.5%	371 74.5%
SLE is not treatable	103 20.7%	395 79.3%
SLE is a genetic disease that can affect the offspring	215 43.2%	283 56.8%

As for knowledge, 96.6% reported that SLE patients should follow up with the attending physician and adhere to the plan. 28.5% know symptoms associated with lupus erythematosus. As for symptoms, 34.7% reported joint pain, 25.9% reported itching, and 10.2% reported hematuria. 50.4% reported that SLE has some complications. 13.1% reported that SLE affect the fertility of men and women. 29.7% think that SLE can cause fetal deformities or recurrent miscarriages for the affected mother. 90% reported that it is important to spread knowledge about SLE. 34.1% reported that SLE is preventable. 51.2% reported that SLE is curable table 3.

Table (3): Knowledge of participants of SLE (n=498).

Parameter		**No.**	**%**
What SLE patient should do	To follow up with the attending physician and adhere to the plan	481	96.6
	Ask the pharmacist about the correct treatment	4	.8
	To ask other patients about treatment	2	.4
	To use painkillers without a prescription	5	1.0
	other	6	1.2

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Know symptoms associated with lupus erythematosus	Yes	142	28.5
	no	356	71.5
The organs that are affected in the event of infection with lupus	kidneys	146	29.3
	Skin	192	38.6
	the eyes	66	13.3
	the heart	75	15.1
	lung	72	14.5
	liver	70	14.1
	joints	161	32.3
	the blood	137	27.5
	I don't know	219	44.0
Symptoms of lupus erythematosus	Hematuria	51	10.2
	Joint pain	173	34.7
	Alopecia areata	74	14.9
	itching	129	25.9
	light sensitivity	69	13.9
	I don't know	260	52.2
SLE has some complications	Yes	251	50.4
	no	9	1.8
	I don't know	238	47.8
SLE affect the fertility of men and women	Yes	65	13.1
	no	55	11.0
	I don't know	378	75.9
Think that SLE can cause fetal deformities or recurrent miscarriages for the affected mother	Yes	148	29.7
	no	36	7.2
	I don't know	314	63.1
It is important to spread knowledge about SLE	Yes	448	90.0
	no	50	10.0
SLE is preventable	Yes	170	34.1
	no	328	65.9
SLE is curable	Yes	255	51.2

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	no	243	48.8
SLE treatment is	Chemotherapy	58	11.6
	Steroids	23	4.6
	Malaria medicines	38	7.6
	sum of the above	61	12.2
	I don't know	365	73.3

Figure (3) shows that 9.8% of participants have good knowledge score, 52.8% have moderate knowledge, and 37.3% have poor knowledge.

Figure (3): Knowledge score of participants of SLE

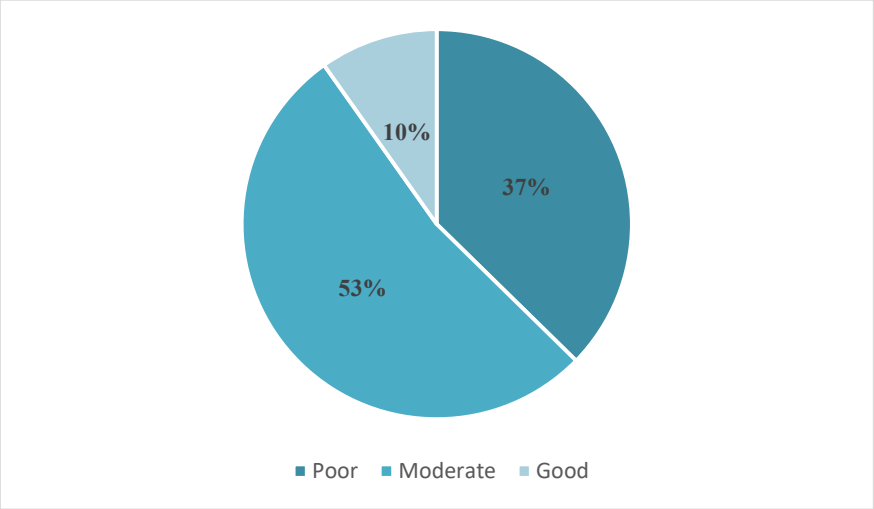

Figure (4) illustrated that 49.2% of participants have positive attitude towards SLE while 50.8% have negative attitude.

Figure (4): Attitude score of participants towards SLE.

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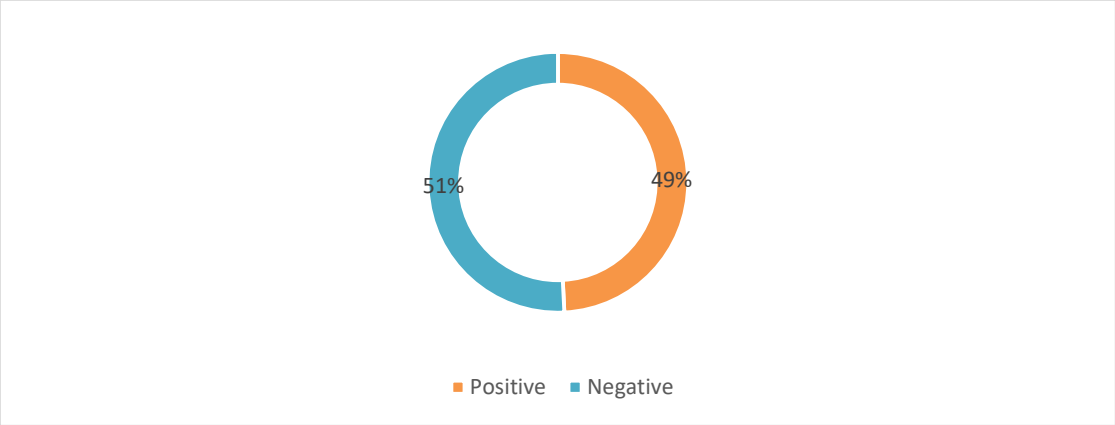

Table (4) shows that participants; knowledge score was significantly associated with their gender. Participants attitude scores was significantly associated with their age, educational level, and marital status (P< 0.05) as in table (5).

Table (4): Knowledge of participants of SLE in association with their sociodemographic characters (n=498).

		Knowledge score			Total	P value
		Poor	Moderate	Good	(N=498)	
Gender	Male	39	37	14	90	0.023
		7.8%	7.4%	2.8%	18.1%	
	Female	147	226	35	408	
		29.5%	45.4%	7.0%	81.9%	
Age	less than 20	29	37	7	73	0.986
		5.8%	7.4%	1.4%	14.7%	
	20 - 30	73	106	22	201	
		14.7%	21.3%	4.4%	40.4%	
	31- 40	24	34	7	65	
		4.8%	6.8%	1.4%	13.1%	
	41 - 50	44	59	8	111	
		8.8%	11.8%	1.6%	22.3%	
	51 - 60	16	27	5	48	
		3.2%	5.4%	1.0%	9.6%	
Region	Southern area	10	7	1	18	0.092
		2.0%	1.4%	0.2%	3.6%	
	Eastern Province	11	15	5	31	
		2.2%	3.0%	1.0%	6.2%	

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	The northern area	3	11	5	19	
		0.6%	2.2%	1.0%	3.8%	
	Western Region	152	221	37	410	
		30.5%	44.4%	7.4%	82.3%	
	Central Region	10	9	1	20	
		2.0%	1.8%	0.2%	4.0%	
Education level	Primary stage	2	1	0	3	0.685
		0.4%	0.2%	0.0%	0.6%	
	Intermediate stage	3	1	0	4	
		0.6%	0.2%	0.0%	0.8%	
	High school	35	44	9	88	
		7.0%	8.8%	1.8%	17.7%	
	University stage	91	142	29	262	
		18.3%	28.5%	5.8%	52.6%	
	ateded	55	75	11	141	
		11.0%	15.1%	2.2%	28.3%	
Nationality	Saudi	181	255	47	483	0.878
		36.3%	51.2%	9.4%	97.0%	
	Non-Saudi	5	8	2	15	
		1.0%	1.6%	0.4%	3.0%	
Social status	Single	95	126	28	249	0.348
		19.1%	25.3%	5.6%	50.0%	
	Married	84	129	17	230	
		16.9%	25.9%	3.4%	46.2%	
	Divorced	4	4	3	11	
		0.8%	0.8%	0.6%	2.2%	
	Widowed	3	4	1	8	
		0.6%	0.8%	0.2%	1.6%	

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		Attitude score		Total	P value
		Positive	Negative	(N=498)	
Gender	Male	45	45	90	0.866
		9.0%	9.0%	18.1%	
	Female	200	208	408	
		40.2%	41.8%	81.9%	
Age	less than 20	49	24	73	0.001
		9.8%	4.8%	14.7%	
	20 - 30	125	76	201	
		25.1%	15.3%	40.4%	
	31- 40	21	44	65	
		4.2%	8.8%	13.1%	
	41 - 50	36	75	111	
		7.2%	15.1%	22.3%	
	51 - 60	14	34	48	
		2.8%	6.8%	9.6%	
Region	Southern area	11	7	18	0.095
		2.2%	1.4%	3.6%	
	Eastern Province	20	11	31	
		4.0%	2.2%	6.2%	
	The northern area	6	13	19	
		1.2%	2.6%	3.8%	
	Western Region	201	209	410	
		40.4%	42.0%	82.3%	
	Central Region	7	13	20	
		1.4%	2.6%	4.0%	
Education level	Primary stage	1	2	3	0.001
		0.2%	0.4%	0.6%	
	Intermediate stage	2	2	4	
		0.4%	0.4%	0.8%	
	High school	50	38	88	
		10.0%	7.6%	17.7%	
	University stage	149	113	262	
		29.9%	22.7%	52.6%	
	ateded	43	98	141	
		8.6%	19.7%	28.3%	

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Nationality	Saudi	239	244	483	0.469
		48.0%	49.0%	97.0%	
	Non-Saudi	6	9	15	
		1.2%	1.8%	3.0%	
Social status	Single	157	92	249	0.001
		31.5%	18.5%	50.0%	
	Married	78	152	230	
		15.7%	30.5%	46.2%	
	Divorced	6	5	11	
		1.2%	1.0%	2.2%	
	Widowed	4	4	8	
		0.8%	0.8%	1.6%	

Table (5): Association between attitude scores of participants towards SLE with their sociodemographic characters (n=498).

Discussion:

Lupus is a persistent inflammatory condition for which there is no treatment. It can negatively affect many organs and lead to a poor quality of life if it is not managed properly [11]. Despite advancements in medication options and a better understanding of the disease process, people with SLE have a high mortality rate and substantial morbidity. 85 to 90% of people survive the first ten years of their lives [12, 13]. The three leading causes of death are cardiovascular disease, infections, and kidney disease. Early diagnosis, treatment of infections and cardiovascular conditions, as well as patient monitoring and organ damage screening, may all help to improve these outcomes [14]. This study aims to assess the range of knowledge and attitude levels of systemic lupus erythematosus among the population in KSA.

According to this study results, 9.8% of participants have good knowledge score, 52.8% have moderate knowledge, and 37.3% have poor knowledge. According to a prior Saudi survey of primary healthcare providers, participants had varying levels of understanding on systemic lupus erythematosus, including excellent knowledge (>75%), fair knowledge (60-75%), and poor knowledge (60% or lower) [15]. 56.8% of individuals in another survey were said to have heard of SLE [16]. 40% of people have heard about SLE before, as revealed by a related survey [17]. 55.9% of people have heard the phrase "SLE" before, according to the second local study [18].

SLE has a wide range of symptoms and impacts many different systems. From a very mild infection with only mucocutaneous involvement to a catastrophic, multiorgan threatening condition, clinical features can vary widely. Every organ system may be impacted by SLE [5]. According to our results,

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2% of participants have been diagnosed with SLE. 25.5% reported that SLE is fatal. 20.7% reported that SLE is not treatable. 43.2% reported that SLE is a genetic disease that can affect the offspring. 50.4% reported that SLE has some complications. The majority, according to a prior study, had not yet received an SLE diagnosis and were unaware that the disease was not communicable and lethal [16]. But they thought that the kidney was the only organ that SLE could affect. More than 50% of participants in a previous survey felt that SLE did not present in the kidneys, despite the fact that several studies have revealed renal failure to be one of the leading causes of death in SLE patients [19].

SLE affects multiple systems and has a variety of manifestations. Clinical characteristics might range from a relatively mild illness with simply mucocutaneous involvement to a serious, multiorgan threatening illness. In SLE, every organ system may be affected [20].

In this study, 96.6% reported that SLE patients should follow up with the attending physician and adhere to the plan. In another study, participants were unaware of the potential laboratory tests for SLE diagnosis and thought that chemotherapy was the primary form of treatment. This was with regards to SLE diagnostic patterns. The mild or serious consequences of SLE were also unknown to a significant portion of the population. The presence of a variety of signs and symptoms, as well as some laboratory tests using blood and urine, and occasionally a biopsy to rule out other diseases, are all necessary for the diagnosis. It can be challenging to make a prompt diagnosis of the condition because symptoms and indicators may occasionally not be visible at any time. [16, 21].

In this study, knowledge score of participants was significantly associated with only participants' gender. This was on the line with a previous Saudi study reported that participants' age, gender, and other practice-related characteristics did not show any statistically significant differences in knowledge levels [15].

Patient education, physical and lifestyle changes, and emotional support are essential for controlling SLE. The biology of the disease, any potential organ involvement, the importance of medication, and compliance monitoring must all be well explained to SLE patients. All of the following should be encouraged: physical activity, good sleep hygiene, stress reduction techniques, and emotional support. Patients should be informed of the need of quitting smoking since smoking might exacerbate SLE symptoms. Echinacea and lucerne sprouts should be avoided, and foods high in vitamin D should be a part of the diet. Security for photos is essential. All SLE patients are urged to avoid direct sun exposure by carefully arranging their activities, dressed in light, loose-fitting, dark clothing that covers the majority of their bodies, and applying broad-spectrum (UV-A and UV-B) sunscreens with an SPF of 30 or higher [7, 11]. One of the study's limitations was the unequal gender distribution of the participants, with 81.9% of them being female.

Conclusion:

In conclusion, the participants exhibited poor knowledge and attitude towards SLE in Saudi Arabia.

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Knowledge was only significantly associated with gender while attitude was associated with age and educational level.
It may be possible to prevent organ damage through early detection and therapy whenever patients are better informed about potential organ involvement signs and symptoms. Patients must be educated on the importance of adhering to their medication regimens. It's important to alter eating habits and lifestyle, such as by giving up smoking and using sunscreen. SLE patients, who also experience higher rates of anxiety and despair, experience a tremendous deal of stress as a result of the ailment and its complications. It may be advantageous to attend support groups, behavioural therapy, or occasionally psychiatry appointments.

Acknowledgement:

We thank the participants who all contributed samples to the study.

Ethical approval

An informed consent was obtained from each participant after explaining the study in full and clarifying that participation is voluntary. Data collected were securely saved and used for research purposes only.

Funding

The study did not receive any external funding.

Conflict of interests

The authors declare that there are no conflicts of interest.

Informed consent:

Written informed consent was obtained from all individual participants included in the study.

Data and materials availability

All data associated with this study are present in the paper.

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