REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No. 1 (2024)
http://www.veterinaria.org
Article Received :Revised: Accepted:

Effect of Implementing Nursing Care on Improve patient satisfaction in Systemic Lupus Erthematosus

Hanaa Ahmed Mohammed Sayed*[1], Howaida Abd-Elhakeem Nafady[2], Mervat Anwer AbdEL-Aziz[3], Mona Aly Mohamed[4]

[1]Nurse Specialist at Assiut University Hospital, Egypt
[2]professor of Internal Medicine & clinical Hematology, Faculty of Medicine ,Assiut University, Egypt
[3]professor of Critical care and emergency nursing department, Faculty of Nursing, Assiut University , Egypt
[4]professor of Critical care and emergency nursing department, Faculty of Nursing, Assiut University , Egypt
Corresponding Author *: alparadisee@gmail.com

Abstract

Introduction Systemic lupus erythematosus (SLE) is a multisystem disorder that can affect multiple organs; anxiety is the most psychiatric manifestation commonly seen in SLE, it impact patient satisfaction.

Aim of this study to evaluate effect nursing care on anxiety level and patients satisfaction in SLE.

Design: A quasi experimental research design study, sixteen adult patients SLE data registry. Participants were evaluated with Systemic lupus Erthromatous disease activity index (SLEDAI) , patient anxiety level using state-trait anxiety inventory, pain using numerical rating scale and Patients' Satisfaction using Likert scales.

Results majority of the studied patients were female and their mean age of 25.27±6.96years. According SLE disease activity index (SLEDAI-2000) it based on study group 5.33±2.93 and control group 7.13±3.36. According to Barthel Index Level Assessment revealed significant significantly improved functional independence in the study group. According to Mean±SD of patient anxiety using state-trait anxiety inventory questionnaire it based on study group43.63±5.31and control group47.07±4.83. The pain degree WAS IN study group 6.67±1.52 and control group7.48±1.35. Patients' Satisfaction was higher among study group.

Conclusions there was appositive significantly improvement of satisfaction and progress levels and diminishing the anxiety level and shorter hospital stays among study group than the control.

Recommendations: Routine evaluation of psychological disturbances in patients with SLE. Non-pharmacological interventions as well as specialist referral should be considered in patients with anxiety.

Keywords: anxiety, Barthel Index satisfaction, pain and systemic lupus erythematosus

Introduction

Systemic lupus erythematosus is a heterogeneous and complex autoimmune disease; it is associated with the production of autoantibodies and inflammatory damage of multiple organs. It has a wide spectrum of clinical presentation that affects all ages and ethnicities(**Tsokos, 2020**). Childbearing women most often affected by these diseases, but with different disease manifestations with variable severity **(Connelly & Morand, 2021).**

The most common manifestation of SLE is arthritis which is seen in almost half the patients with SLE, followed by malar rash (Ameer et al., 2022). SLE is a multisystem disorder that affects multiple organs and can have varying presentations such as pericarditis, central nervous system disturbances, nephropathy, retinopathy and gastrointestinal symptoms **(Schattner, 2022).**

Moreover, psychiatric manifestations including anxiety is commonly seen in SLE patients. Anxiety is reported to be two times more common in patients with SLE as compared to controls. The impact of anxiety is beyond the disease itself and is associated with higher cardiovascular events, myocardial infarction, premature mortality, and suicidal ideation, among many other conditions **(Moustafa et al., 2020).**

Mood disorders are a common comorbidity in patients with systemic lupus erythematosus (SLE), and it is estimated that40% of patients with SLE have comorbid mental health conditions **(Monahan et al., 2021).** For example, anxiety has a prevalence rate of 35%-37%among patients with SLE, which is nearly double the national prevalence estimate of 18.1% **(León-Suárez et al., 2023).**

Studies that have assessed satisfaction with routinely used standard of care have generally found a fairly high rate of patient-reported satisfaction, patient satisfaction was modest, with control patients more frequently being more dissatisfied than physicians with the degree of fatigue, pain, joint, and skin symptom control **(Feng & Gravelle, 2021).**

A **critical care nurse** plays a pivotal role in managing patients with life-threatening conditions, primarily in ICUs and emergency settings. Their responsibilities include continuous monitoring of vital signs, administering advanced therapies, and responding rapidly to emergencies to stabilize patients (Ahmed et al., 2020). They collaborate closely with the healthcare team to implement care plans while also advocating for patients' needs, especially when patients cannot speak for themselves. Critical care nurses provide emotional support to families, manage complex medical technology, and take measures to prevent complications. Additionally, they are involved in patient education and, when necessary, provide compassionate end-of-life care **(Treacy et al., 2020).**

Significance of this study

Systemic Lupus Erythematosus (SLE) is a complex heterogeneous autoimmune disease that manifests a wide range of organ involvement, Women of childbearing age are affected about nine times more often than men. While the most common symptoms of the disease begin between the ages of 15 and 45, therefore, a wide range of ages can be affected. People of African, Caribbean and Chinese descent are at greater risk than whites. Disease rates in the developing world are unclear **.(Gordon C *et al,2017*)**

According to the Lupus Foundation of America estimates that 1.5 million Americans, and at least five million people worldwide, have a form of lupus. Lupus strikes mostly women of childbearing age. However, men, children, and teenagers develop lupus **(Lupus Awareness Survey for the Lupus Foundation of America, 2019).**

While The overall estimated prevalence of adult SLE in Egypt was 6.1/100,000 population (1.2/100,000 males and 11.3/100,000 females).

The overall estimated prevalence of adult SLE in Egypt was 6.1/100,000 population,May 2021. Estimated prevalence at Egypt, Assiut by (Goma et at)., who found that SLE represents 14.3% (182 out of 939) patients among Rheumatic patients at Assiut Hospital.(**Goma et al., 2016). (Egyptian College of Rheumatology (ECR)-study group).**

In Assiut Universty Hospital ,The incidence of systemic lupus erythematosus. Patients, Statistics report of 60 cases in1-sep-2021 to 1-sep-2022 (H**ospital record at Main Assiut university Hospital) .**

Aim of the study:

This study aimed to evaluate effect nursing care on anxiety level and patients satisfaction in SLE.

Hypothesis:

***Hypothesis** (1) There was a statistical Significant improvement in patients outcomes who receiving nursing care protocol compared with control group.

***Hypothesis (2)** There was a statistical Significant reduction in the occurrence of complications among patient who receiving nursing care protocol than that control group.

***Hypothesis (3)** There was a statistical Significant Length of ICU stay among patient who receiving nursing care protocol was be less than that control group.

Patients and Methods

Research Design:

A quasi experimental research design was utilized to fulfill the aim of this study.

Setting:

The study was carried out at Assiut University , Egypt ,in the Medical Emergency department & Intensive Care Unit at Main Assiut University Hospital.

Study* Subjects*:

Sixteen adult patients with emergency systemic lupus erthromatous.

***Inclusion criteria*:** The study included patients had the following criteria:-

Readmission of systemic lupus erthromatous in ICU.-

- Recent admission to medical intensive care unit.

Age20to 60 years-

Exclusion criteria :   The study included patients had the following criteria:-

-direct exposure to sun light.

-chronic disease patient.(diabetes, Hypertension and not related Systemic Lupus Erthromatous)

Sample: Purposive Sample of (60) adult patients was included in the study including both sex, their aged ranged from (20-60 years old) admitted to the previously mentioned settings. They was selected by to two equal groups control and study group (30 in each) **Control group** who received routine hospital   care and **study group** who received nursing care protocol was be applied for them.

variables:

-Independent variable is nursing care protocol for patient with systemic lupus Erthromatous.

- Dependent variable is the occurrence of   early detection of SLE complication ,length of hospital and mortality rate.

Tools:-

Three tools used by the researcher in this study after reviewing of the related literatures **(Gladman et al., 2002, Hseuh et al., 2002, Boonstra et al., 2016)**

Tool (1): - Patient assessment sheet:

- This tool was developed by the researcher after reviewing of literatures**,** used to assess patient condition, and divided into **seven parts**:

Part I - Demographic and clinical data, as patient's code, age, sex, , diagnosis, past history of diseases,length of stay in ICU.

Part II: Systemic Lupus Erthromatous disease activity index (SLEDAI) assessments sheet:-

This part was used to assess the SLE disease activity index (SLEDAI-2000) **score criteria** it consist of :- mild activity (SLEDAI-2000 ≤6), moderate activity (SLEDAI-2000 7–12), and severe activity (SLEDAI-2000 >12)

For patients with active SLE, we recommend to assess the disease activity at least every month, and every 3–6 months for patients with stable disease. If relapse occurs, patients should be treated as active disease adopted from (**Gladman et al., 2002).**

Part(III):- Pain assessment sheet:-

numerical pain rating scale (0-10) to assess of pain **score criteria** it consist of :- mild (1-3), moderate (4-6), and severe (7-10) adopted from(**Boonstra et al., 2016).**

Part (IV):- The Barthel index assessment sheet:- is a 10-item instrument measuring functional independence in personal activities of daily living (ADL) as Feeding, Bathing, Grooming, Dressing, Bowels, Bladder, Toilet Use, Transfers, Mobility ,Stairs.

0 = dependent 5 = needs some help10 = independent

The total score of Barthel index was 100. In this, we considered anyone with a score <100 as having some disability. Barthel index is a very simple tool and can be easily administered by health-care professional adopted from. **(Hseuh et al., 2002**)

Tool(2): divided into two parts:-

Part I :-Patients outcomes assessment sheet.

This tool was developed by the researcher based on extensive review of related literatures to assess the development of SLE complications to identify the impact of nursing care protocol.

It included hospital stays is 1-3,3-5and more than 5 days, and progress level is good or poor.

Tool **(3)** divided into two parts:-

Part I:- Assessment of patient anxiety using state-trait anxiety inventory sheet.(STAI)

The State-Trait Anxiety Inventory is one of the first tests to assess both state and trait anxiety separately. Each type of anxiety has its own scale of 20 different questions that are scored. Scores range from 20 to 80, with higher scores correlating with greater anxiety. The creators of this test separated the different anxieties so both scales would be reliable. This means the S-anxiety scale would only measure S-anxiety and the T-anxiety scale would only measure T-anxiety, the ultimate goal in creating this test. They found they could not achieve this if the questions were the same to examine both types of anxiety. Each scale asks twenty questions each and are rated on a 4-point scale. Low scores indicate a mild form of anxiety and high scores indicate a severe form of anxiety. Both scales have anxiety absent and anxiety present questions. Anxiety absent questions represent the absence of anxiety in a statement like, “I feel secure.” Anxiety present questions represent the presence of anxiety in a statement like “I feel worried.” More examples from the STAI on anxiety absent and present questions are listed below. Each measure has a different rating scale. The 4-point scale for S-anxiety is as follows: 1.) not at all, 2.) somewhat, 3.) moderately so, 4.) very much so. The 4-point scale for T-anxiety is as follows: 1.) almost never, 2.) sometimes, 3.) often, 4.) almost always (**Spielberger et al., 1994).**

Part II:- Patients' Satisfaction Scale about Caring Process sheet.

Likert scales are most useful when you are measuring **unobservable individual characteristics**, or characteristics that have no concrete, objective measurement. These can be elements like attitudes, feelings, or opinions that cause variations in behavior. A dichotomous question gives you very limited information a Likert scale question instead: “How satisfied are you with the shoes you purchased?” 1 – Very dissatisfied, 2 – Dissatisfied, 3 – Unsure, 4 – Satisfied, 5 – Very satisfied **(Heiberger, 1988)**

Methods

The study was conducted on three phases (preparing phase, implementation phase and evaluation phase).

1-Preparatory phase

-Permission to conduct the study was obtained from the responsible authorities of all the selected ICU after explanation of the aim of the study.

- Development of the tools after reviewing the related literature was done.

-Content validity: The developed tools (I, and III) was tested for content validity by a jury of (3) specialists in the field of critical care nursing and Hematology& Rheumatology from Assiut University, and necessary modifications were done. .

They assessed the clarity, feasibility, applicability, and the content validity of the tools and all the necessary modifications were done.
- The **Reliability** was done on the tools of SLE. by Cronbach`s Alpha ranging from 0.80 to 1.00 to assess the consistency and stability of the tools.
- Informed consent was obtained from each patient or from the responsible person for the unconscious patients.

Pilot study:
-Pilot study was conducted on 10% (6) patients who met the predetermined selection criteria to test the applicability of the tools. Appropriate study modifications was done prior to data collection for the actual study. A pilot study was be carried out for testing data collection test the clarity ,applicability, feasibility and consistency of the tool to detect any ambiguity in the study tools. The pilot study has also served to estimate the time required to fill the form. It was included in the main sample.

Data collection:-
- Data were collected in eight months approximately.
- The data were collected from the first day of admission after stabilization of the patient's condition and for seven consequent days, every day and every shift then the data were recorded in the developed tools.
-The researcher assigned study sample (60 patients) to two equal groups (Control and study group).
- For the control group: The researcher assessed patients who were receiving the routine hospital care.
- For study group: The researcher assessed patients then applying nursing care protocol.

Ethical consideration
1. Research proposal will be approved from Ethical Committee in the Faculty of Nursing .
2. There is no risk for study subject during application of the research.
3. The study will follow common ethical principles in clinical research .
4. Written consent will be obtained from patient’s or guidance that are willing to participate in the study ،after explaining the nature and purpose the study.
5. Confidentiality and anonymity will be assured.
6. Study subject have the right to refuse to participate and or withdraw from the study without any time.
7. Study subject privacy will be considered during collection of data.

Field work:
- Data was collected by the researcher during approximately eight months starting from Nov2022 to Mayo 2023 at Medical Emergency department & Intensive Care Unit.

- **Development of the nursing care protocol:**
The nursing care protocol was developed by researcher, after reviewing the relevant literature ,the following steps were adopted develop the nursing care protocol.
- Stating the nursing care protocol general and specific objectives.
- Planning the nursing care protocol: the content of the nursing care protocol was arranged into eight parts in addition to preliminary one.

The content of the nursing care protocol covered two parts related to: Knowledge about autoimmune disease and its nursing management. Performance of procedure required autoimmune disease: related emergency complication of systemic lupus Erthromatous.

It included:
- -physiology of immune system.
- -What are the parts of the immune system?
- -How does the immune system work?
- -What are the types of immunity?
- -10Warning Signs of Primary Immunodeficiency
- -Causes Immunodeficiency disorders
- -Type of autoimmune disease
- -Symptoms autoimmune disease
- -Diagnosis of autoimmune disease
- -Treatment of autoimmune disease
- -What Is Lupus
- -Symptoms of Lupus
- -Lupus Complications
- -Lupus Causes

- -Types of Lupus
- -Lupus Diagnosis
- -Lupus Treatment
- -Lupus alternative treatments
- -Lifestyle Changes
- -Living With Someone Who Has Lupus
- -Nursing management of a patient with lupus erythematous

Arranging the subgroup:
-**Control group** who received routine hospital care and study group who received nursing care protocol was be applied for them.

2- Implementing phase:-
-was conducted by the following: The researcher introduced herself for the patients, patient's family and nursing staff and explained the purpose of the study. The patients profile was collected from the patient or from nurses if the patient was comatose, and recorded in the tool one.
During this phase the researcher assess patient's profile data, part in tool one, that include Patients profile by using tool one assessment of assessments sheet of SLEDAI, pain, barthel index.
During this phase, the developed SLE nursing care protocol, was implemented for the study group which consisted of (30) patients the following steps was followed during its implementation.

Start protocol: -
The protocol was performed, every day and every shift then the data were recorded in the developed tools.
This nursing care protocol for SLE was performed by the researcher with assistance of the internship nurses that involved in the providing direct patient's care and prevent complication.
During this phase the patients received the nursing care protocol Initial approach includes; identification SLEDAI This part was used to assess the SLE disease activity index (SLEDAI-2000) score criteria it consist of :- mild activity (SLEDAI-2000 ≤6), moderate activity (SLEDAI-2000 7–12), and severe activity (SLEDAI-2000 >12) , and clinical activists SLE manifestations and numerical pain rating scale assessment sheet:- (0-10) to assess of pain score criteria.
The Barthel index assessment sheet:- for measuring functional independence in personal activities of daily living (ADL).
Identification of protocol **purpose and target audience :**As reflection of the multidisciplinary nature of the complication SLE preventive measures aimed at both medical and nursing staff. The aim was to standardize the (team) approach and keep the high risk patient for SLE centered to be responsible for protocol implementation.

3-. Evaluation phase
-The evaluation was carried out immediately after the application of the Nursing Care Protocol using the tools in order to test the Impact of the Implementing Nursing Care Protocol for Assess on Emergency in Systemic Lupus Erthromatous on Patients Outcomes using the previously mentioned tools for both study and control groups.

Limitation of study
- Dropout of some patients from the study group because death and not complete the duration of gather the data.

Statistical analysis
- The data entry and data analysis were done using (SPSSver.19)
- Descriptive statistics (number, percentage, mean and standard deviation) were done.
- Chi-square test were done to determine significance qualitative variable.
- Independent samples t-test ware done to compare quantitative variable between tow group.
- Pearson correlation between quantitative variable.
- P-value considered statistically significant when P<0.05.

Results

Table(1):- Distribution of Socio-demographic data related to group(G1 n=30, G2 n=30) n=60)

	Study(G1)		Control**(G2)**		**X2**	**P. value**
	No	%	No	%		
Age group						
Less than 30 years	12	40.0	10	33.3	2.46	0.292
From 30-40 years	14	46.7	11	36.7		
More than 40 years	4	13.3	9	30.0		
Mean±SD(range)	31.07±7.94(18-45)		34.77±11.61(18-60)		T=1.49	1.141

Gender						
Male	4	13.3	5	16.7	0.13	0.718
Female	26	86.7	25	83.3		
F-history						
No	29	96.7	30	100.0	1.02	0.313
Yes	1	3.3	0	0.0		
Disease duration						
Less than one year	14	46.7	7	23.3	4.41	0.110
From 1-5 year	12	40.0	14	46.7		
More than 5 year	4	13.3	9	30.0		
past history of diseases						
No	27	90.0	22	73.3	2.78	0.181
Yes	3	10.0	8	26.7		

Chi square test for qualitative data between the two groups ,Independent T-test quantitative data between the two groups
*Significant level at P value < 0.05, **Significant level at P value < 0.01

Table (1): Illustrates Characteristics of the both groups (G1, G2) there was no statistically significant difference between both groups before application of the Nursing Care Protocol. Regarding the patients' age, the main age groups were aged 30-40 years (46.7% were in G1 versus 36.7% in G2,) with mean age for G1 was 31.07±7.94 years, and for G2 it was 34.77±11.61 years. Most participants were female (86.7% in G1, 83.3% in G2), and nearly all had no family history of disease (96.7% in G1, 100% in G2). Disease duration was similar, with 46.7% of G1 and 23.3% of G2 having the disease for less than one year, and 40.0% of G1 and 46.7% of G2 between 1-5 years. Most of the studied patients had no past history of diseases (90. And 73.3%) respectively.

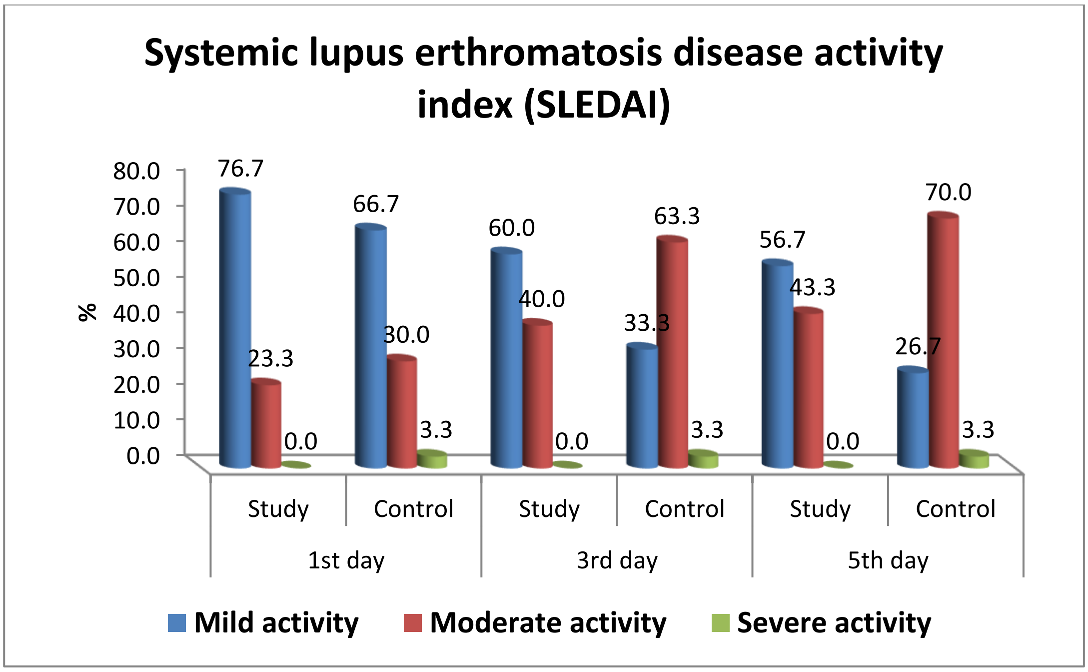

Fig (1):- Distribution of Systemic lupus erthromatosis disease activity index (SLEDAI) assessments sheet related to group(G1 n=30, G2 n=30)n=60)

Fig (1): The distribution of Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) assessments across both groups (G1 and G2) reveals important insights into disease activity levels over the first five days of observation. On the 1st day, a majority of participants in both groups exhibited mild activity, with 76.7% in G1 compared to 66.7% in G2, although the difference was not statistically significant (p = 0.482). By the 3rd day, mild activity decreased to 60.0% in G1 while moderate activity increased to 40.0%, in contrast to G2, where only 33.3% showed mild activity and 63.3% had moderate activity, approaching significance (p = 0.088). However, it was on the 5th day that a statistically significant difference emerged, with 56.7% of G1 participants demonstrating mild activity compared to 26.7% in G2 (p = 0.047). Furthermore, moderate activity was more prevalent in G2 (70.0%) compared to G1 (43.3%), and this was also statistically significant (p = 0.031). The mean SLEDAI scores reflected these findings, showing G1 participants with lower mean scores on both the 5th day (5.33 ± 2.93) compared to G2 (7.13 ± 3.36), highlighting a significant reduction in disease activity in the study group.

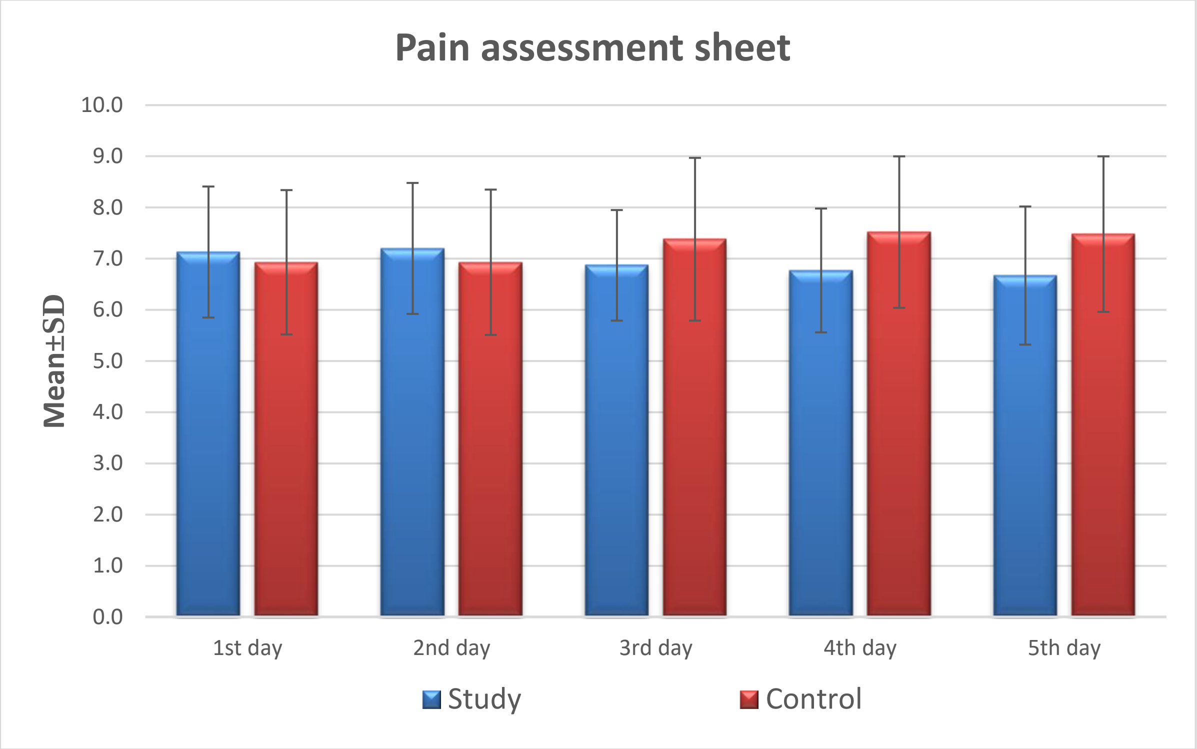

Fig (2):Distribution Between Tow group related to Pain degree assessment sheet (G1 n=30, G2 n=30)n=60)

Fig (2) shows that there was statistical significant difference between the both groups (0.033).regarding the mean and standard deviation of the Pain degree, while the mean was found to be [6.67±1.52, 7.48±1.35] in G1 and G2 respectively.

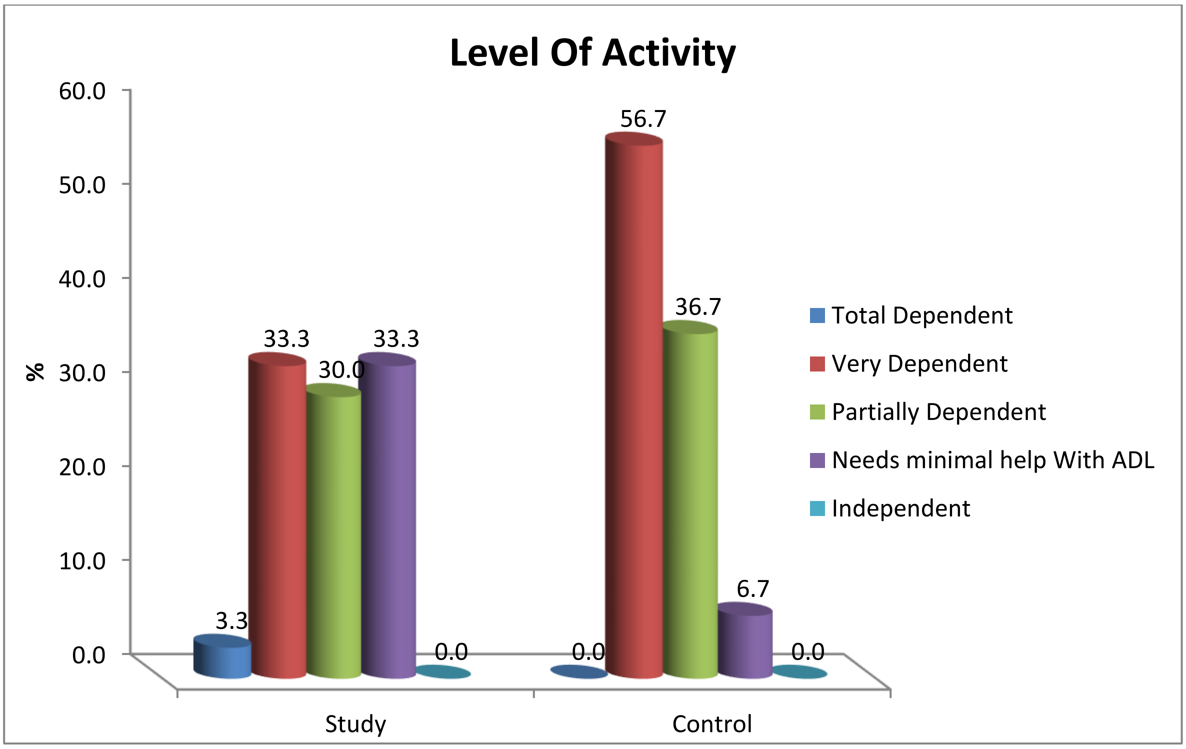

Fig (3): Distribution Of The Barthel index Level assessment sheet related to group(G1 n=30, G2 n=30)n=60)

Fig (3): Illustrates the Barthel Index Level Assessment revealed significant differences between the study group (G1) and the control group (G2), with G1 showing a higher percentage of individuals requiring minimal assistance with activities of daily living (ADL) (33.3% vs. 6.7%, **X^2 = 8.34, p = 0.039**) and a significantly better mean score (48.16±16.42 for G1 vs. 38.00±11.12 for G2, **T = 2.80, p = 0.007**), indicating improved functional independence in the study group.

Table(2):-Distribution Of Patients' Satisfaction Level related to group(G1 n=30, G2 n=30)n=60)

	Study(G1)		Control(G2)		X2/T	P.value
	No	%	No	%		
Patient Satisfaction						
Unsatisfied	2	6.7	9	30.0	5.45	0.020**
Satisfied	28	93.3	21	70.0		
Mean±SD(range)	55.77±8.18(39-71)		47.30±10.14(24-62)		3.56	0.001**

Chi square test for qualitative data between the two groups
Independent T-test quantitative data between the two groups-
****Significant level at P value < 0.05, **Significant level at P value < 0.01***

Table (3) showed that there was highly statistical significant difference between the both groups after application of the nursing protocol regarding the patients satisfaction (0.001).

Table(3):-Distribution Of Patients outcomes assessment sheet related to group(G1 n=30, G2 n=30)n=60)

	Study(G1)		Control(G2)		X2	P. value
	No	%	No	%		
progress level						
Improved	27	90.0	10	33.3	20.37	<0.001**
Not improved	3	10.0	20	66.7		
hospital Stay						
From 1-3 days	0	0	4	13.3	8.86	0.012*
From 3-5 days	19	63.3	9	30		
More than 5 days	11	36.7	17	56.7		

Chi square test for qualitative data between the two groups
*Significant level at P value < 0.05, **Significant level at P value < 0.01

Table (4) Illustrates that were a high statically significance difference in Patients outcomes between the both groups study G1 and control groups G2 among progress level and hospital Stay with p-value (0.001*)(,0.012*) respectively . also the table shows a significant increase of the progress level improvement among the study group than the control one. The study group experienced shorter hospital stays, with 63.3% staying between 3-5 days compared to 30% in the control group.

Discussion:

This balance ensures that the groups are comparable at baseline, allowing the researchers to attribute any differences in outcomes after the intervention to the nursing care protocol itself rather than pre-existing differences in participant characteristics. This enhances the validity of the study's findings **(Costa et al., 2022).**

The resent study reported that the study group (G1) has a slightly higher proportion of participants aged 30-40 years compared to the control group, these differences are not statistically significant (p = 0.292). This suggests that both groups are comparable in terms of age, which is important because age can influence health outcomes and treatment responses. In this line, **Kankaya & Karadakovan, (2020)** discussed that age is a critical factor influencing treatment outcomes in patients with chronic diseases ad found that older patients tend to have poorer outcomes due to age-related physiological changes, comorbidities, and differing responses to medications. **Sumpter et al., (2022)** examined how age influences treatment responses in patients with rheumatoid arthritis, a condition similar in chronicity to systemic lupus erythematosus (SLE). The findings showed that older patients generally had a slower and less effective response to treatment.

Regarding to the present study participations gender, both groups show a similar gender distribution, with the majority being female. The lack of a significant difference in gender distribution (p = 0.718) ensures that any outcomes observed post-intervention are not likely influenced by gender-related factors. This is important because certain conditions, like systemic lupus erythematosus (SLE), can have gender-based differences in presentation and management.

This supported by, **Arora et al., (2023)** who repotted S LE is far more common in females than males, with studies showing that around 90% of SLE patients are women, particularly of childbearing age. This gender disparity is believed to be related to hormonal and genetic factors.

Also, **Aragón et al., (2020)** documented that autoimmune diseases, including SLE, disproportionately affect women. The female-to-male ratio is often reported as 9:1 for lupus. Factors such as estrogen and its interaction with the immune system are believed to contribute to this gender imbalance.

Disagreed with this, **Galoppini et al., (2023)** reported that the gender distribution of systemic lupus erythematosus (SLE) might differ in certain populations or regions, meaning that the percentages seen in this study could be affected by the demographics of the specific area or population being studied.

The present study found that there was no significant difference between the two groups in terms of family history of disease, and all of G2 reporting no family history (p = 0.313). the researcher opinion that, since family history can sometimes affect the risk of disease progression or complications, the similarity in this characteristic supports the comparability of the groups. SLE is considered to be a **polygenic disorder**, meaning it involves multiple genetic and environmental factors, and a direct family history is often absent as discussed in Katz et al., (2020)'s study.

Suárez-Avellaneda et al., (2020) highlighted the **environmental triggers** (e.g., UV exposure, infections) that play a significant role in the onset of SLE, even in individuals without a family history. Genetic predisposition is important, but many SLE cases arise without direct familial links due to these external factors.

In the other hand, **Parodis et al., (2024)** found that while SLE itself may not always run directly in families, other autoimmune diseases often cluster within families, a patient with SLE may have relatives with other autoimmune disorders, such as rheumatoid arthritis or thyroiditis, even if they don't have lupus specifically.

The present study found that a higher percentage of participants in the study group had the disease for less than one year, and the control group had a higher proportion with disease duration of more than five years, these differences were not statistically significant (p = 0.110). This suggests that disease duration is relatively balanced between the groups, which is important because the duration of disease can impact treatment outcomes and patient prognosis.

This supported by **Rua-Figueroa et al., (2022)** who reported that the **patients with prior illnesses** or chronic conditions are at greater risk of developing more severe manifestations of lupus, such as kidney involvement (lupus nephritis), cardiovascular events, and higher overall morbidity.

However, **Fanouriakis et al., (2021)** suggested that individuals with comorbid conditions may respond less effectively to treatments due to the compounded effects of multiple illnesses, particularly in autoimmune diseases like SLE. For example, patients with hypertension or diabetes may experience less favorable responses to standard lupus therapies.

In relation to the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) assessments, the current study revealed a statistically significant difference between the two groups following the fifth day of the nursing protocol intervention. The results indicated that both groups exhibited primarily mild activity on the first day; however, by the fifth day, G1 showed a lower mean SLEDAI score and a greater proportion of participants with mild activity compared to G2. In contrast, G2 experienced an increase in moderate activity on the fifth day. The researcher over view that the overall, these results emphasize the potential benefits of targeted nursing interventions in improving patient outcomes for those with systemic lupus erythematosus.

In this line, **Eudy et al., (2022)** reported that randomized controlled trial demonstrated that educational programs combined with nursing support significantly improved disease activity scores in SLE patients, with notable reductions in SLEDAI scores over time, particularly after the intervention period.

This match with **Nelson et al., (2023)** who explored various integrative nursing approaches, including education, counseling, and lifestyle modifications. It reported a significant reduction in SLEDAI scores among participants who engaged in these interventions, emphasizing the effectiveness of comprehensive nursing care.

In the other hand, **Canal-Pérez et al., (2024)** found that while nursing interventions improved patient education and adherence to treatment, there was no significant reduction in SLEDAI scores over time. The authors concluded that other factors, such as medication adherence and comorbidities, had a more substantial influence on disease activity than nursing interventions alone.

While, **Khan et al., (2020)** concluded that education was important for self-management, it did not directly correlate with significant changes in SLEDAI scores, highlighting that education alone is insufficient without effective medical treatment.

Overall, **Galoppini et al., (2023)** documented that highlight the complexity of managing systemic lupus erythematosus and suggest that while nursing interventions may provide some benefits, they may not directly influence disease activity as measured by SLEDAI scores. Factors such as medication adherence, disease severity, and psychological aspects are also crucial in understanding and managing SLE effectively.

The present study found that there was statistical significant difference between the both groups (0.033) regarding the mean and standard deviation of the Pain degree, while the mean was found to be [6.67±1.52, 7.48±1.35] in G1 and G2 respectively. The researcher opinion that implementing targeted nursing care protocols could play a key role in alleviating pain and improving patient outcomes, as demonstrated by the difference in pain scores.

In this line, A study by **Galoppini et al., (2023)** demonstrated that comprehensive nursing interventions, which included pain management strategies and patient education, led to reduced pain scores in SLE patients.

Also, **Melis et al., (2023)** suggested that a multidisciplinary approach, where nursing protocols include collaboration with physicians, physical therapists, and pharmacists, leads to improved outcomes for SLE patients, including reduced pain and improved quality of life.

Although, **Elghareeb, & Mahmoud, (2022)** found that while nursing care can improve patient comfort, it does not significantly reduce the pain experienced during severe SLE flares.

Additionally, **Pullen & Hammond, (2023)** claimed that pain perception in SLE is highly subjective and may not always correlate with clinical interventions. In these cases, psychosocial factors like coping mechanisms, support systems, and mental health status have a greater influence on pain scores than medical or nursing interventions.

Mohamed et al., (2021) emphasized that psychological and environmental factors contribute significantly to the pain experience in SLE patients, and without addressing these underlying issues, pain levels may remain unchanged despite nursing care efforts. This might explain why G2 had higher pain scores if these aspects were not well-managed.

In the other opinion, **Lu et al., (2021)** reported that although corticosteroids are commonly implicated in causing high blood pressure due to fluid retention and metabolic changes,

The present study showed that the Barthel Index Level Assessment revealed significant differences between the study group (G1) and the control group (G2), with G1 showing a higher percentage of individuals requiring minimal assistance with activities of daily living (ADL) and a significantly better mean score (48.16±16.42 for G1 vs. 38.00±11.12 for G2, T = 2.80, p = 0.007), indicating improved functional independence in the study group.

The researcher suggested that the intervention effectively supports patients in regaining or maintaining their independence. Furthermore, the statistically significant mean score difference indicates that the intervention is associated with a substantial improvement in overall functional ability.

In this line, **Wojeck et al., (2023)** demonstrated that structured rehabilitation programs significantly improved ADL performance in patients with chronic illnesses.

Amer et al., (2024) found that a multidisciplinary approach, which includes physical therapy, occupational therapy, and nursing care, significantly enhances functional independence in patients with various conditions.

In the other hand, **Hamad et al., (2024)** found that individual variability in responses to rehabilitation interventions meant that not all patients experienced the same level of improvement in ADLs as measured by the Barthel Index.

However, **Mohamed et al., (2021)** suggested that short-term rehabilitation interventions often lead to limited and temporary improvements in ADLs.

The present study showed that there was highly statistical significant difference between the both groups after application of the nursing protocol (0.024) regarding patient anxiety using the State-Trait Anxiety Inventory indicated a significant reduction in anxiety levels after the intervention, with 20% of patients in the study group (G1) reporting low anxiety compared to 0% in the control group (G2) (p = 0.024), and the mean anxiety score significantly decreased from 51.77±6.61 to 43.63±5.31 in G1, while the control group showed a lesser decrease (p = 0.011).

The researcher suggested that the remaining high anxiety levels in the control group (G2) underline the need for comprehensive anxiety management strategies for all patients, as addressing psychological well-being is crucial for effective healthcare delivery.

In this context, **Chang et al., (2021)** examined the effects of educational programs on anxiety levels in SLE patients through providing information about the disease and coping strategies significantly lowered anxiety scores, supporting the efficacy of educational interventions in managing anxiety within this population.

In the opposite side, **Warchoł-Biedermann et al., (2022)** concluded that mindfulness techniques might not address the unique stressors associated with SLE and may be less effective for this population than previously thought. Likewise, **Wang et al., (2022)** found that higher disease activity correlated with higher anxiety levels, indicating that without addressing the underlying disease activity, interventions may have limited efficacy in reducing anxiety.

The present study revealed that This table showed that there was highly statistical significant difference between the both groups after application of the nursing protocol regarding the patient's satisfaction (0.001). and the percentage of satisfied patients was improved after application of the nursing protocol for SLE patients.

The researcher opinion that patients' satisfaction with care as indicative of the significant impact that targeted nursing interventions can have on patient experiences in healthcare settings. The marked difference in satisfaction levels related to the caring provided by the nursing team underscores the critical role nurses play in patient care and the overall healing environment and suggests that targeted interventions can positively influence patient perceptions of care quality. This finding highlights the necessity of continuous evaluation and adaptation of nursing practices to meet the evolving needs of patients, particularly in chronic conditions like SLE that require comprehensive and compassionate care.

In this line, **Allen et al., (2021)** indicated that nursing interventions focused on patient education and emotional support resulted in increased satisfaction among patients with chronic illnesses, emphasizing the importance of nursing protocols in improving patient experiences.

Xu et al., (2021) concluded that the implementation of evidence-based nursing interventions significantly enhances patient satisfaction and outcomes in various healthcare settings, supporting the effectiveness of structured nursing protocols.

In the other side, **Gao et al., (2022)** highlighted that factors beyond nursing care, such as institutional policies and patient demographics, can significantly influence patient satisfaction scores. This suggests that improvements attributed to nursing protocols may not solely reflect the quality of nursing care.

However, **Cui & Wang, (2021)** emphasized that patient satisfaction is influenced by individual expectations and experiences. The authors argued that while nursing protocols can enhance care quality, they may not uniformly affect all patients' perceptions of satisfaction due to differing expectations.

The present study illustrated that were a high statically significance difference in Patients outcomes between the both groups study G1 and control groups G2 among progress level and hospital Stay with p-value (0.001*)(,0.012*) respectively. Also the study showed a significant increase of the progress level improvement among the study group than the control one. The study group experienced shorter hospital stays, between 3-5 days compared to 30% in the control group.

The researcher suggested that targeted interventions can substantially enhance patient progress, leading to better health outcomes. shorter hospital stays can lead to decreased healthcare costs and increased bed availability, which are critical factors in today's healthcare environment.

In this line, **Pasyar et al., (2023)** highlighted the positive impact of implementing evidence-based nursing protocols on patient recovery and concluded that such protocols lead to better patient outcomes, including higher rates of improvement and reduced hospitalization duration.

Pasyar et al., (2023) found a correlation between quality nursing care and reduced length of hospital stays. The study showed that patients who received higher quality nursing interventions experienced shorter recovery times

On the opposite side, **Geertsema-Hoeve et al., (2024)** criticized the reliance on short-term assessments of patient outcomes, arguing that improvements might not be sustained over time.

Twumasi et al., (2020) indicated that factors such as comorbidities, patient demographics, and institutional policies could significantly influence hospital stay duration, independent of the quality of nursing care provided.

References:

1. Ahmed, N. M., Ahmed, G. H., & Khalil, S. S. (2020). Effect of Nursing Protocol on Nurses' Performance and Venous Thromboembolism Risks Among the Patients with Cancer Undergoing Surgery. *Assiut Scientific Nursing Journal*, *8*(22), 22-35.
2. Allen, K. D., Beauchamp, T., Rini, C., Keefe, F. J., Bennell, K. L., Cleveland, R. J., ... & Sheikh, S. Z. (2021). Pilot study of an internet-based pain coping skills training program for patients with systemic Lupus Erythematosus. BMC rheumatology, 5(1), 20.
3. Ameer, M. A., Chaudhry, H., Mushtaq, J., Khan, O. S., Babar, M., Hashim, T., ... & Hashim, S. (2022). An overview of systemic lupus erythematosus (SLE) pathogenesis, classification, and management. Cureus, 14(10), 78-90.
4. Amer, S. A. E. M., El-Sheikh, A. A., Eldoushy, E. E., & Gad, A. M. M. (2024). Effect of Self-Management Guidelines on Awareness, Pain and Disability among Patients with Systemic Lupus Erythematosus. Menoufia Nursing Journal, 9(2), 347-362.
5. Aragón, C. C., Ruiz-Ordoñez, I., Quintana, J. H., Suárez-Avellaneda, A., Gallego, L. M., Gallego, C. N., ... & Tobón, G. J. (2020). Clinical characterization, outcomes, and prognosis in patients with systemic lupus erythematosus admitted to the intensive care unit. Lupus, 29(9), 1133-1139.
6. Arora, S., Block, J. A., Nika, A., Sequeira, W., Katz, P., & Jolly, M. (2023). Does higher quality of care in systemic lupus erythematosus translate to better patient outcomes?. Lupus, 32(6), 771-780.
7. Boonstra AM, Stewart RE, Köke AJ, et al. Cut-off points for mild, moderate, and severe pain on the numeric rating scale for pain in patients with chronic musculoskeletal pain: variability and influence of sex and catastrophizing. Front Psychol. 2016;7:1466. doi:10.3389/fpsyg.2016.01466
8. Canal-Pérez, A., Navas-Otero, A., Ortiz-Rubio, A., Heredia-Ciuró, A., Raya-Benítez, J., Martín-Núñez, J., & Valenza, M. C. (2024, August). E-Health Interventions to Improve Health Outcomes in Patients with Systemic Lupus Erythematosus: A Systematic Review. In Healthcare (Vol. 12, No. 16, p. 1603). MDPI.
9. Chang, A., Winquist, N. W., Wescott, A. B., Lattie, E. G., & Graham, A. K. (2021). Systematic review of digital and non-digital non-pharmacological interventions that target quality of life and psychological outcomes in adults with systemic lupus erythematosus. Lupus, 30(7), 1058-1077.
10. Connelly, K., & Morand, E. F. (2021). Systemic lupus erythematosus: a clinical update. *Internal medicine journal*, *51*(8), 1219-1228.
11. Costa, A. A., Robba, H. C., Silva, C. A., & Ferreira, J. C. O. (2022). Care provided by nurses to patients with juvenile systemic lupus erythematosus. Lupus, 31(3), 367-372.
12. Cui, C., Li, Y., & Wang, L. (2021). The association of illness uncertainty and hope with depression and anxiety symptoms in women with systemic lupus erythematosus: a cross-sectional study of psychological distress in systemic lupus erythematosus women. JCR: Journal of Clinical Rheumatology, 27(8), 299-305
13. Elghareeb, S. M., & Mahmoud, H. M. (2022). Influence of self-management instruction on outcomes of health for systemic lupus erythematosus patients. Egyptian Journal of Nursing and Health Sciences, 3(1), 391-408.
14. Eudy, A. M., Reeve, B. B., Coles, T., Lin, L., Rogers, J. L., Pisetsky, D. S., ... & Clowse, M. E. (2022). The use of patient-reported outcome measures to classify type 1 and 2 systemic lupus erythematosus activity. Lupus, 31(6), 697-705.
15. Fanouriakis, A., Tziolos, N., Bertsias, G., & Boumpas, D. T. (2021). Update on the diagnosis and management of systemic lupus erythematosus. Annals of the rheumatic diseases, 80(1), 14-25.
16. Feng, Y., & Gravelle, H. (2021). Patient self-reported health, clinical quality, and patient satisfaction in English primary care: practice-level longitudinal observational study. *Value in Health*, *24*(11), 1660-1666.

17. Galoppini, G., Marangoni, A., Cirilli, F., Ruffilli, F., Garaffoni, C., Govoni, M., ... & Bortoluzzi, A. (2023). Optimizing patient care: a systematic review of multidisciplinary approaches for SLE management. Journal of Clinical Medicine, 12(12), 4059.
18. Gao, R. C., Wu, L., Shi, P. L., Sang, N., Hao, M., & Wu, G. C. (2022). The impact of distress disclosure and anxiety on the association between social support and quality of life among Chinese women with systemic lupus erythematosus. Frontiers in Psychiatry, 13, 89-132
19. Geertsema-Hoeve, B. C., Sickinghe, A. A., van Schaik-Mast, S. J., Spierings, J., van Laar, J. M., & Limper, M. (2024). The effects of lifestyle interventions on disease activity and quality of life in patients with systemic lupus erythematosus: A systematic review. Autoimmunity Reviews, 103609.
20. Gheita TA, Fawzy SM, Nour El-din AM, El-Fishawy HS (2018) Juvenile and adult onset systemic lupus erythematosus outcome in Egyptian patient; Egypt Rheum 33:99 105
21. Gladman DD, Ibañez D and Urowitz MB. (2000), Systemic lupus erythematosus disease activity index 2000. J Rheumatol2002; 29(2): 288–291.
22. Hamad, A. H., Ragab, I. I., & Zytoon, H. K. (2024). Effect of Non-Pharmacological Nursing Interventions on Fatigue, Pain and Quality of Life for Patients with Systemic Lupus Erythematosus. Zagazig Nursing Journal, 20(1), 406-420.
23. Heiberger, R. M. (1988). *Patient satisfaction with nursing care process: Instrument development and testing*. Unpublished doctoral dissertation, University of California, San Francisco.
24. Hseuh, I., Lin, J., Jeng, J., & Hsieh, C. (2002). Comparison of the psychometric characteristics of the functional independence measure, 5 item Barthel index, and 10 item Barthel index in patients with stroke. *Journal of Neurological Neurosurgery and Psychiatry*, 73, 188-190.
25. Katz, P., Nelson, W. W., Daly, R. P., Topf, L., Connolly-Strong, E., & Reed, M. L. (2020). Patient-reported lupus flare symptoms are associated with worsened patient outcomes and increased economic burden. Journal of Managed Care & Specialty Pharmacy, 26(3), 275-283.
26. Khan, F., Granville, N., Malkani, R., & Chathampally, Y. (2020). Health-related quality of life improvements in systemic lupus erythematosus derived from a digital therapeutic plus tele-health coaching intervention: randomized controlled pilot trial. Journal of medical Internet research, 22(10), e23868.
27. León-Suárez, P., Rúa-Figueroa, I., González Martín, J., Rodríguez-Sosa, T., Erausquin, C., Almeida Santiago, C. D. P., ... & Rodríguez Lozano, C. (2023). Depression and anxiety in systemic lupus erythematosus: A case-control study on prevalence and associated factors in a single-center cohort. *Lupus*, *32*(7), 827-832.
28. Lu, Q., Long, H., Chow, S., Hidayat, S., Danarti, R., Listiawan, Y., ... & Lin, C. S. (2021). Guideline for the diagnosis, treatment and long-term management of cutaneous lupus erythematosus. Journal of Autoimmunity, 123, 102707.
29. Lupus Awareness Survey for the Lupus Foundation of America (2019) [Executive Summary].Washington, DC. https://www.lupus.org/news/2019-lupus-awareness-survey-summary. June 25, 2019.
30. Melis, M. R., El Aoufy, K., Bambi, S., Bruni, C., Guiducci, S., Bellando-Randone, S., ... & Rasero, L. (2023). Nursing interventions for patients with rheumatic and musculoskeletal diseases on biological therapies: a systematic literature review. Clinical rheumatology, 42(6), 1521-1535.
31. Mohamed, R., Younis, A., & Mohamed, Y. (2021). Effect of nurse-led lifestyle intervention protocol on associated symptoms and self-efficacy among patients with systematic lupus erythematosus. Egyptian Journal of Health Care, 12(1), 814-830.
32. Monahan, R. C., Beaart-van de Voorde, L. J., Eikenboom, J., Fronczek, R., Kloppenburg, M., Middelkoop, H. A., ... & Steup-Beekman, G. M. (2021). Fatigue in patients with systemic lupus erythematosus and neuropsychiatric symptoms is associated with anxiety and depression rather than inflammatory disease activity. *Lupus*, *30*(7), 1124-1132.
33. Moustafa, A. T., Moazzami, M., Engel, L., Bangert, E., Hassanein, M., Marzouk, S., ... & Touma, Z. (2020, February). Prevalence and metric of depression and anxiety in systemic lupus erythematosus: a systematic review and meta-analysis. In *Seminars in arthritis and rheumatism* (Vol. 50, No. 1, pp. 84-94). WB Saunders.).
34. Nelson, M. C., Mosley, C., Bennett, T., Orenstein, E., & Rouster-Stevens, K. (2023). A single-center model for implementation of SLEDAI documentation adherence in childhood-onset systemic lupus erythematosus (cSLE). Lupus, 32(12), 1447-1452.
35. Parodis, I., Girard-Guyonvarc'h, C., Arnaud, L., Distler, O., Domján, A., Van den Ende, C. H., ... & Boström, C. (2024). EULAR recommendations for the non-pharmacological management of systemic lupus erythematosus and systemic sclerosis. Annals of the Rheumatic Diseases, 83(6), 720-729.
36. Pasyar, N., Sam, A., Rivaz, M., & Nazarinia, M. (2023). A smartphone-based supportive counseling on health anxiety and acceptance of disability in Systemic Lupus Erythematosus patients: a randomized clinical trial. Patient Education and Counseling, 110, 107-167
37. Pullen Jr, R. L., & Hammond, L. (2023). Selected nursing interventions for systemic lupus erythematosus. Nursing made Incredibly Easy, 21(5), 5-13.
38. Schattner, A. (2022). Unusual Presentations of Systemic Lupus Erythematosus: A Narrative Review. *The American Journal of Medicine*, *135*(10), 1178-1187.

39. Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1994). *Manual for the State-Trait Anxiety Inventory*. Consulting Psychologists Press
40. Suárez-Avellaneda, A., Quintana, J. H., Aragon, C. C., Gallego, L. M., Gallego, C. N., Bolanos, J. D., ... & Tobón, G. J. (2020). Systemic lupus erythematosus in the intensive care unit: a systematic review. Lupus, 29(11), 1364-1376.
41. Sumpter, I. J., Phillips, S. M., & Magwood, G. S. (2022). Approaches to reducing fragmented care in systemic lupus erythematosus (SLE) and other multimorbid conditions: A realist review. International Journal of Care Coordination, 25(4), 103-114.
42. Treacy, M., Smales, C., & Dutton, H. (2020). The immune and lymphatic systems, infection and sepsis. *Acute Nursing Care*, 488-543.
43. Tsokos, G. C. (2020). Autoimmunity and organ damage in systemic lupus erythematosus. *Nature immunology*, *21*(6), 605-614.
44. Twumasi, A. A., Shao, A., Dunlop-Thomas, C., Drenkard, C., & Cooper, H. L. (2020). Exploring the perceived impact of the chronic disease self-management program on self-management behaviors among African American women with lupus: a qualitative study. ACR Open Rheumatology, 2(3), 147-157.
45. Wang, Q., Jia, J., Zhang, K., Zheng, Z., & Liu, H. (2022, October). Investigation and Analysis of Anxiety and Quality of Life among Systemic Lupus Erythematosus Patients in Northwestern China. In Healthcare (Vol. 10, No. 11, p. 2180). MDPI.
46. Warchoł-Biedermann, K., Mojs, E., Sikorska, D., Kotyla, P., Teusz, G., & Samborski, W. (2022). Psychological implications to the therapy of systemic lupus erythematosus. International journal of environmental research and public health, 19(23), 16021.
47. Wojeck, R. K., Arcoleo, K., Hathaway, E. C., & Somers, T. J. (2023). Nurse-led interventions in systemic autoimmune rheumatic diseases: a systematic review. BMC nursing, 22(1), 232.
48. Xu, H., Teng, Q., Zeng, Y., Tian, C., Yang, B., & Yao, X. (2021). Psychoeducational intervention benefits the quality of life of patients with active systemic lupus erythematosus. Journal of Nanomaterials, 2021(1), 699-767.