

Assessment of Maternity Nurse's Knowledge and Performance Regarding Care of Pregnant Women with Systemic lupus

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Abstract

Background: Pregnancy in a woman with SLE endures a high-risk situation with increased incidence of maternal and fetal mortality and morbidity. **Aim of the study:** the study aimed to evaluate the maternity nurse's knowledge and performance regarding care of pregnant women with Systemic lupus. **Study design:** Descriptive study was adopted to conduct this study. **Setting:** The study was conducted at the inpatient department, antenatal clinic, rheumatology clinic in the fayoum university hospital and El Nabawy El Mohandas hospital. **Subject:** Convenient sample technique was used to recute all maternity nurses (60 nurses) in all pre mentioned setting. **Two tools of data collection were used; I)** A Structured interviewing questionnaire it consisted of 2 parts, the questions of first part was related to personal characteristic of the study sample, the second part consisted of questions to assess the study sample knowledge related to systemic lupus, **II)** An Observational Checklist to assess nurses 'performance toward care of pregnant women with SLE. **Result:** revealed that slightly more than half of the studied nurses had poor knowledge and less than three quarter of studied nurses had incompetent skills related to care of pregnant women with systemic lupus, there was highly significant difference between total knowledge and total skills score p (0.001). **Conclusion:** there was slightly more than half of the studied nurses had poor knowledge, less than two thirds of the studied nurses had incompetent skills related to care of pregnant women with systemic lupus and highly statistically significant difference between total knowledge and total skills score. The study **recommended** that; still needed further study to evaluate the effect of instructional guidelines related to care of pregnant women with systemic lupus on maternity nurses.

Keywords: Systemic lupus erythematous, maternity nurses performance, Rheumatic disease.

Introduction

Autoimmune disorder is an umbrella term for a variety of conditions involving a malfunction in the body's complex immune system. that's occurs when the immune system attacks self-molecules, as a result of a breakdown of immunologic tolerance to auto-reactive immune cells. So that's a significant clinical problem because of their chronic in nature, its vary greatly in the organs they affect and in their clinical manifestations, with some being limited to particular tissues and others being systemic or disseminated. (Noel McLaren, et al 2015).

Autoimmune disorders are chronic multi-system disorders, predominantly affecting females of child-bearing age. The hormonal alterations associated with pregnancy produce immunological variations in the course of the disease. Some conditions may improve while others remain relatively unchanged or may worsen during pregnancy. With improvements in diagnostic and treatment modalities, the survival and quality of life of these women have been improving. (Miyakis, et al, 2016).

Pregnancy with chronic disease is a challenge issue so that's importance for maternal well-being and neonatal

outcomes, the chronic diseases can influence on the course of pregnancy and have lasting effects that manifest at and after birth as low birth weight and prematurity. A pregnant woman with systemic lupus is especially at high-risk of adverse pregnancy outcome because of the long-lasting implications of these disorders on both the pregnant women and fetus. (David, et al., 2018).

Nurses has a beneficial role for Management of pregnant women with of systemic lupus erythematosus (SLE) often depends on disease severity and disease manifestations, although hydroxychloroquine has a central role for long-term treatment in all SLE patients. The LUMINA (Lupus in Minorities: Nature versus Nurture) study and other trials have offered evidence of a decrease in flares and prolonged life in patients given hydroxychloroquine, making it the cornerstone of SLE management. Initiated of low-dose aspirin in all women with SLE, starting from approximately 12 weeks' gestation, to reduce the risk of preeclampsia and its sequel.

Significance of the study:

Significant of problem for individual and community, SLE is a disease that appears particularly in young people, aged between 15 and 45 years, mainly young women. The black population is more commonly affected by the disease, 2-3 times more than the white population, and develop more aggressive forms. The incidence of the disease has increased significantly over the last decades, probably due to the development of diagnostic methods. (Dragos, et al 2018).

SLE is a global disease associated with an increased risk of premature labor, abortion and neonatal lupus. The number of people who have SLE, the age of onset and the mortality risk, Annual incidence rates in the world wide range from 2 to 7.6 per

100,000 and prevalence ranging from 28 to 97 per 100,000. The population in **Egypt** is now exceeding 100 million and expected to reach 150 million by 2050 with an emerging demand for more healthcare services. (Verdu, et al., 2020).

Aim of the study:

This study aims to evaluate the maternity nurse's knowledge and performance regarding care of pregnant women with Systemic lupus.

Through:

- 1-Assessing the level of maternity nurse's knowledge regarding care of pregnant women with SLE.
- 2- Assessing the level of maternity nurse's performance regarding care of pregnant women with SLE.

Research questions

- 1- What are the levels of maternity nurse's knowledge regarding care of pregnant women with Systemic lupus?
- 2- What are the levels of maternity nurse's performance regarding care of pregnant women with Systemic lupus?

Subjects and Methods:

I. Research design:

Descriptive study was adopted to conduct this study. It is an observational research method to capture the characteristics of the maternity nurses.

▪ Setting:

The study was conducted at the inpatient department, antenatal clinic as well as rheumatology clinic in the following settings; Fayoum university hospital divided into two sections, and El Nabawy El Mohandes (public hospital in Fayoum).

▪ Sample:

All nurses enrolled in the previously mentioned hospitals (convenient sample) were included in the study. They were 60 nurses.

▪ Tools of Data Collection:

The data for this study were collected by using two tools:

Tool (1): structured interview questionnaire: it was designed to complete two parts. It was designed by the investigator based on literature review:

The first parts consist of:

Question to assess the studied nurses such as age, educational level, experience years. it includes questions from 1-6.

The Second part:

It was consisted of questions in the form of multiple choice (MCQs) and essay questions from 7-16 to assess studied nurses' knowledge regarding to care of pregnant women with systemic lupus.

❖ **Scoring System:**

It included 3 levels: the complete correct answer scored (3), the incomplete correct scored (2), while wrong or no answer scored (1). The knowledge has been considered poor if percentage score <50%. and satisfactory if $>_{50}$ -75%. and good if more than 75%.

Tool (2): An Observational Checklist:

It was used to assess nurse's performance regarding care of pregnant women with SLE, the items in this tool was answer by done or not done.

❖ **Scoring System :**

The items was correct scored "2" and the incorrect items was scored "1", total scores of the items were summed-up and the total was divided by the number of the observational checklist and giving a mean score for each part. These scores were converted into a percentage score. The practice was considered satisfactory performance if the percentage score was 60% or more and unsatisfactory performance if less than 60%.

II. Operational design:

The operational design included the preparatory phase, pilot study, fieldwork and limitation of the study.

a) Preparatory phase:

Includes reviewed the current, local and international related literature using books, periodicals journals, magazines and internet. Amid to help the investigator to be more acquainted with the study, and with the process of tools' designing. Then tools were designed and tested for being valid and reliable.

b) Content validity:

Content validity of the tools was done by a panel of expertise composed of 5 professors of Maternal and Gynecological Health Nursing to measure the content validity of the tools and the necessary modifications was done accordingly to their recommendation.

c) Pilot study:

It was conducted on 10% of the total sample size (6) nurses to test the efficiency, clarity of the tools that which used in the study. Nurses in the pilot study chosen randomly and then was included from the study sample later. There were no necessary modifications found after pilot study. The pilot showed very high levels of reliability done by Crombach Alpha coefficient test and values for tool (1) 0.80. And for tool (2) the value was 0.86.

d) Field Work:

Recruitment of the participant was carried out from May 2019 to December 2019. The investigator attended the pre-mentioned study setting 3days per week starting from 9am to 2pm to collect data.

- At the beginning the written permission was obtained from the institutional authority of maternity hospital before conducting the study after that the investigator have introduce herself to the studied nurses who recruited in the study and inform them about the purpose of this research to get their acceptance and cooperation to be recruited in it.
- Confidentiality of information was insured to gain nurses confidence and trust.

- The investigator was conducted and prepared the different data collection tool and revised by expertise in field of maternity nursing. The collection of data covered period within 7 months.
- The investigator met 3 days the nurses in group (3-6 nurses) and used the structured Arabic self-administered questionnaire (tool I) to collect the nurse's personal data, (this part took five minutes), then assessed the knowledge related to care of pregnant women with SLE as well as the source of their information regarding care of pregnant women with SLE, this part consumed about 10-15 min.
- Assessed the nurse's practice by Observational Checklist (tool II), this step was conducted individually for each nurse in each ward/clinic while providing care for women, this tool was consumed about 15-20 min.

III. Administrative design:

An Official letters including the title and purpose of the study were issued from dean of the faculty of Nursing, Fayoum University, and submitted to the Director of the pre-mentioned Hospitals for conducting the study.

Ethical Consideration:

The research Approval for conducting the study was obtained from the pre-mentioned settings. Where data have been collected taken after issuing an official letter from the dean of Faculty of Nursing, Fayoum University. An oral consent of the participate in the current study was taken after the purpose of the study was clearly explained to each nurse. Confidentiality of obtained personal data, as well as respect of participants' privacy was totally ensured.

IV. Statistical design:

The Data was collected, coded and entered to a personal computer. It was

Table (4): The result showed that (33.3%) of studied sample had satisfactory skill while (66.7%) had unsatisfactory skills regarding the total score of general practice.

analyzed were the program Statistical Package for Social Science (SPSS), version 22.0, a statistical software package. Results were presented in frequencies, percentages. The statistical analysis included the arithmetic mean, standard deviation and Chi-square test.

Result:

Table (1): showed the distribution of the personal data of the studied sample, the results showed that, the mean age of the sample was 25.0 ± 5.6 and the age ranged (<20->35yrs). (61.7%) of them had institute certificate, (50%) of them their years of experience was ranged from 1-5 year. The result showed no one of the studied nurses had training course regarding the management of immunity disease during pregnancy, while (61.7%) of the studied nurses had training course related to quality management.

Table (2): Represent the studied samples knowledge regarding to the care of systemic lupus during pregnancy, the result showed that is (51.6%) of maternity nurses had poor knowledge.

Table (3): Represent the skills related to the care of systemic lupus during pregnancy regarding assessment part. The result revealed the (51.7%) of maternity nurses had satisfactory skills and (48.3%) of them had unsatisfactory skills regarding assessment part. **Also**, the result showed that, (93%) of studied nurses done the history taking correctly and (80%) of studied sample done the fetal wellbeing assessment correctly. Focus on the clinical assessment done by nurses correctly as (62.5%) of pregnant women had fetal bradycardia, (65.2%) had moderate pain and (52.9%) of pregnant women had moderate tenderness, swelling and warmth of joint.

The result revealed also (60%) of studied sample had satisfactory skill while (40%) had unsatisfactory skills regarding total

score of specific practice for care of pregnant women with systemic lupus .

Table (5): The result showed that the (43.3%) of studied sample had satisfactory skills and (56.7%) of studied sample had unsatisfactory skills regarding total score of health instruction.

Table (6): Relation between the total knowledge and skills score regarding the care of systemic lupus during pregnancy among the studied sample, the results revealed that there was a highly significant difference between total knowledge and skills score p (0.001).

Table (1): Number & Percent Distribution of the studied sample according to their personal data $n=60$.

Personal data	N(60)	%
Age		
<20-25	28	46.7
26-30	16	26.7
31-35	6	10
> 35	10	16.7
Mean age	25.0 ±5.6	
Education level		
Diploma	11	18.3
Institute	37	61.7
Bachelor	12	20
Years of experience		
1-5 yrs.	30	50
6-10yrs	15	25
11-15yrs	8	13.3
16-20yrs	7	11.7
Mean ± SD	1.8 ±1	
Department		
Clinic	2	3.3
Ward	58	96.7
Training course regarding the management of immunity disease during pregnancy		
yes		
No	0	0
	60	100
General training course		
Yes	47	77.3
No	13	21.7
*In case of yes (47)		
Emergency	26	55.3
Quality management	29	61.7
Infection control	20	42.5
First aid	20	42.5
All previous workshops	1	2.1

Table (2): The studied sample's knowledge regarding to the care of systemic lupus during pregnancy n=60.

knowledge regarding to the care of systemic lupus during pregnancy	Complete correct	Incomplete correct	Wrong/ not know
N (%)			
Concept of the disease	2(3.3%)	8(13.3%)	50(83.3%)
Age Risk group	5(8.3%)	15(25%)	40(66.6%)
Risk group	21(35%)	24(40%)	15(25%)
Disease Risk factors	9(15%)	0(0%)	51(85%)
Primary Symptoms	21(35%)	18(30%)	21 (35%)
The most affected organ by disease	15(25%)	41(68.3%)	4(6.6%)
Common complication	15(25%)	1(1.6%)	44(73.3%)
Disease diagnosis	5(8.3%)	0(0%)	55(91.6%)
Method of management the disease	14(23.3%)	38(63.3%)	8(13.3%)
Total score regarding the knowledge			
Good.	12		(20%)
Satisfactory.	17		(28.4%)
Poor.	31		(51.6%)

Table (3): The studied sample's skills toward the care of systemic lupus during pregnancy regarding assessment part n=60.

Skills related to care of systemic lupus	Done correct	In-correct/ not done
N (%)		
Assessment part		
History taking	56(93.3%)	4(6.7%)
Assessment of women expression related to fatigue.	22(36.7%)	38(63.3%)
Observation malar rash	23(38.3%)	37(61.7%)
Fetal wellbeing (FHR) assessment.	48(80%)	12(20%)
<ul style="list-style-type: none"> • Normal. • Bradycardia. • Heart block. 	10(20.8%) 30(62.5%) 8(16.7%)	
Pain assessment scale.	23(38.3%)	37(61.7%)
<ul style="list-style-type: none"> • Mild • Moderate • Severe 	5(21.7%) 15(65.2%) 3(13.0%)	
Assessment of tenderness, swelling and warmth severity.	17(28.3%)	43(71.7%)
<ul style="list-style-type: none"> • Mild • Moderate • Severe 	5(29.4%) 9(52.9%) 3(17.6%)	
Total score of assessment part		
Satisfactory	31	(51.7%)
Unsatisfactory	29	(48.3%)

Table (4): The studied sample's skills related to the care of systemic lupus during pregnancy regarding general and specific practice n=60.

General practice		
	N (%)	
Infection control measures	4(6.7%)	56(93.3%)
Measurement of vital signs	57(95%)	3(5%)
Remind the pregnant women to avoid prolonged periods of inactivity	29(48.3%)	31(51.7%)
Assist the pregnant women to use the progressive Muscle-relaxation techniques.	14(23.3%)	46(76.7%)
Non-pharmacological pain relieve measures	12(20%)	48(80%)
Ulcerated skin care	16(26.7%)	44(73.3%)
Assist the pregnant to frequently change position at night.	6(10%)	54(90%)
Total score of general practice regarding skills		
Satisfactory	20	(33.3%)
Unsatisfactory	40	(66.7%)
Specific practice for Maternal with SLE		
Measurement of gestational age	27(45%)	33(55%)
Reassurance of Pregnant women	56(93.3%)	4(6.7%)
Review of patient medications sheet.	52(86.7%)	8(13.3%)
follow 10 rights of medication administration	5(8.3%)	55(91.7%)
Monitor the potential side effects of medication	29(48.3%)	31(51.7%)
Follow up of laboratory investigations	47(78.3%)	13(21.7%)
Follow up of ultrasound tests and non-stress testing.	38(63.3%)	22(36.7%)
The Fetus		
Auscultate fetal heart rate	50(83.3%)	10(16.7%)
Perform fetal echocardiography	18(30%)	42(70%)
Total score of specific practice for maternal and fetus regarding skills		
Satisfactory	36	(60%)
Unsatisfactory	24	(40%)

Table (5): Distribution of the studied samples' according to skills regarding health instruction to the care of systemic lupus during pregnancy n=60.

Skills related to care of systemic lupus	Correct	In-correct/ not done
Health instruction related to	N (%)	
Pregnancy Planning	14(23.3%)	46(76.7%)
Management regarding the disease.	16(26.7%)	44(73.3%)
Folic acid administration.	60(100%)	(0%)
lifestyle activities to reduce flare-ups	11(18.3%)	49(81.7%)
Danger signs of SLE during pregnancy	20(33.3%)	40(66.7%)
Sensation and counting the fetal movement.	44(73.3%)	16(26.7%)
Medication used.	21(35%)	39(65%)
Avoidance of harm/irritant chemicals.	5(8.3%)	55(91.7%)
Avoid exposure to ultraviolet rays	16(26.7%)	44(73.3%)
Importance and schedule of antenatal follow up visits.	52(86.7%)	8(13.3%)
Total score regarding health instruction		
Satisfactory	26	(43.3%)
Unsatisfactory	34	(56.7%)

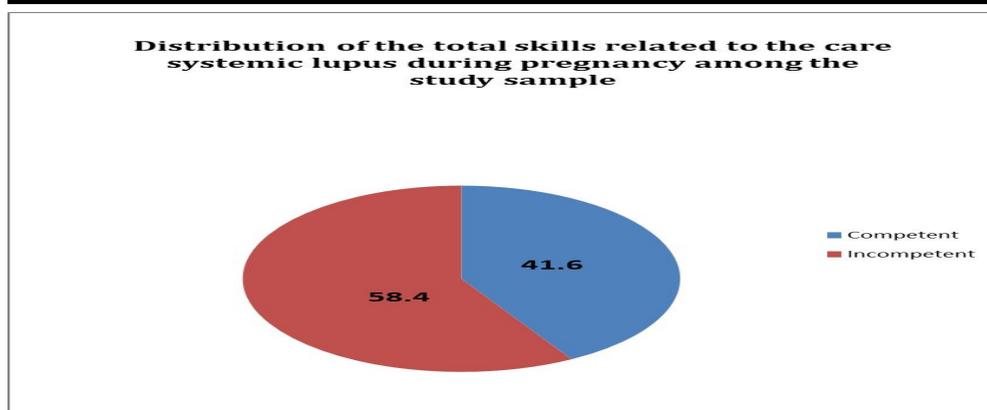


Figure (2): Distribution of the studied sample according to their total skills related to the care of systemic lupus during pregnancy n=60

Table (6): Relation between the total knowledge and skills score regarding the care of systemic lupus during pregnancy among the studied sample n=60.

Total knowledge score	Total skills scores		X ²	P-value
	Satisfactory	Satisfactory		
Satisfactory	13(76.5)	4(23.5)	8.01	**0.001
Good	10(83.3)	2(16.7)		
Poor	2(6.5)	29(93.5)		

** Highly significant

Discussion:

Systemic lupus erythematosus (SLE) is a chronic inflammatory disease that can affect various organs of the body. It is multisystem autoimmune chronic disease with a complex pathogenesis resulting in abnormal immune response mainly affecting on women, particularly in reproductive age. SLE provides challenges in the pregnancy, for these women and for health care team who provide their care. It can vary from mild to severe life-threatening. SLE presents with a diversity of symptoms including rash, arthritis, anemia, thrombocytopenia, seizures and/or psychosis. (Doherty, et al.2018).

The study aims to assess maternity nurse's knowledge and performance regarding care of pregnant women with systemic lupus. The current result shows that, the mean age of studied sample was 25.0±5.6, their age ranged between <20 to 25, slightly more than two thirds of the sample had institute education level, half of the studied sample had 1-5 years of

experience and no training courses regarding the management of immunity disease during pregnancy.

Regarding total score of the knowledge of the studied sample, the current result revealed that, slightly more than half of the studied sample had poor knowledge about to care of pregnant women with systemic lupus. The current results in the agreement with **Barton-Ellis (2016)** who conducted public awareness of systemic lupus erythematosus in Al-Dammam City in Saudi Arabia, whose found more than half of the studied sample, had poor knowledge regarding SLE .

Also, This finding are in accordance with **Kusnanto et al., (2018)** who conducted study titled by nurse's development of a systemic lupus erythematosus knowledge questionnaire: the relationship among disease proximity, educational exposure, and knowledge, whose found that the half of the maternity

nurses had no knowledge regarding care to pregnant women with systemic lupus. This may be due to ignore the hospital to ensure the knowledge level of the maternity nurse's focus on this part as well as to acquire the needed knowledge and then to updated this knowledge.

In addition, the current result showed that the, maternity nurses knowledge regarding to the care of systemic lupus during pregnancy revealed that, slightly more than two thirds of the studied nurses had incomplete correct knowledge about (most affected organ by disease, methods of management). Also the current result revealed that the, majority of nurses had wrong /not known knowledge about (concept of disease, risk factors of disease and diagnosis of disease).

This result in the same line with **Barton-Ellis (2016)**, who conducted research titled by diagnosis and management of systematic lupus erythematosus. Whose found more than two thirds of the studied sample had incomplete knowledge about affected organ and methods of management and most of the studied sample had unknown knowledge of concept, risk factors and diagnosis of systemic lupus. This may be due to more than half of studied nurses had institutional educational level, no training courses made by health education department regarding immunity diseases in the hospital and loss motivation of nurses' to learn the management of immunity disease during pregnancy.

Also, the current result revealed that the, more than two third of studied nurses their source of knowledge regarding to systemic lupus from work environment. This finding was in contradicting with **Xie et al. (2018)** found that less than three fourth of studied nurses their source of knowledge related to care of pregnant women with systemic lupus is the study. This may be due to difference in educational level and nurses interesting issue.

Regarding total score practice among the studied nurses related to the assessment part. The current result revealed that the, slightly more than half of studied nurses had satisfactory skills related to care of pregnant women with systemic lupus. This result is in agreement with **Margiotta et al, (2018)** who conducted research titled by assessment of clinical practice among nurses for pregnant women with autoimmune disease. Whose found more than half of studied sample had satisfactory skills regarding to care of pregnant women with systemic lupus especially in the assessment steps.

Also most of the studied nurses had practically done correct the (history taking and fetal wellbeing assessment). slightly more than two thirds of studied sample had practically incorrect /not done the (assessment of women expression of fatigue, observation malar rash, pain assessment and assessment of tenderness, swelling and warmth severity of joint).This result was agreement with **Shelbie Lee Sullivan, (2016)** who conducted research titled by development of a systemic lupus erythematosus knowledge questionnaire: The relationship among disease proximity, educational exposure, and knowledge. And found that the nurses done correctly history taking and fetal wellbeing (FHR) assessment, while two third of studied nurses had not apply observation malar rash, pain assessment and joint assessment.

Clarifying results of assessment fetal heart rate, pain, and tenderness, swelling of joint. The current result revealed that majority of pregnant women with systemic lupus had abnormality of fetal heart in terms of fetal bradycardia and fetal heart block. This is result was agreement with **Adriana Krizova,et al,(2018)** who conducted research titled by pregnancy outcome in systemic lupus erythematosus (SLE), found more than two thirds of pregnant women with systemic lupus had fetal bradycardia and one quarter had fetal heart block. This

may be due disease progress among two studied sample.

Regarding total score focus on general practice part. The current result revealed that, slightly more than two third of studied nurses had incompetent level of skills related to care of pregnant women with systemic lupus. These results are agreement with **Ibrahim, Said & Hamdy, (2017)** who study nursing care competencies of staff nurses providing care for systemic lupus women, and revealed that two third of the maternity nurses had incompetent level of general practice regarding to care of pregnant women with systemic lupus. This similarity may be related to majority of two studied sample didn't attended any training courses related to care of pregnant women with systemic lupus.

Firstly, regarding to general practice the result of current study revealed that majority of the studied nurses had done measurement of vital signs correctly. On the other hand most of studied nurses had improper practices related to (non-pharmacological pain relieve measures, and teaching women activity and positioning techniques). This result was agreement with **Laurent Arnaud, (2018)** who conducted research titled by systemic lupus erythematosus: State of the art on clinical practice guidelines and found that, all of studies nurses measure the vital signs correctly and most of their didn't apply infection control measure, using of muscle relaxation technique and using of non-pharmacological pain relieve measures in correct way. This similarity of two samples may be due to poor knowledge and experience of nurses.

Regarding the total score of specific practice for maternal and fetus regarding skills. The current result revealed that slightly less than two third of studied nurses had satisfactory level of skills. This is result was agreement with **José María, (2016)** who conducted study by clinical

practice guidelines for systemic lupus erythematosus: Recommendations for general clinical management, found that more than half of studied sample had satisfactory level of skills regarding to care of pregnant women and fetus.

The current result revealed that, most of the studied nurses done correctly (reassurance of pregnant women, review of patient medication sheet. On the other hand, the current study revealed that, most of studied nurses had incorrect/not done related to medication rights of administration. This result was in the same line with **Ahmed, et al., (2019)**. who study research titled by the impact of evidence based nursing guideline on pregnancy outcome for systemic lupus erythematosus pregnant women, and pointed to that, the majority of studied nurses give psychological support to pregnant women and able to auscultated fetal heart rate, as well as follow up medication sheet by acceptable way .

Regarding the maternity nurse's practice related to pregnant women health instruction. The current result revealed that, slightly less than of studied nurses had competent skills in term of folic acid administration, antenatal follow up schedule and slightly more than half of studied nurses had incompetent skills level especially lifestyle activities, habits, pregnancy danger signs, medication used and avoidance of harm chemicals. This result in agreement with **Al-Aama, (2016)** who study research titled by the practice and attitude of King Saud nurses towards pregnant women with systemic lupus, found less than of studied nurses had competent skills and more than half of studied nurses had incompetent skills related to pregnant women health instruction.

This result was in agreement with **Ariel Izcovich, et al., (2020)** who study research titled by clinical practice guidelines and recommendations for nurses to management of patients with systemic lupus

erythematous, found the majority of studied nurses give health education to folic acid taken for first trimester, good antenatal follow up. Also more than half of studied nurses had incompetent health education about life style activities, avoidance of irritant chemicals, pregnancy danger signs and medication used. This may be due to similarities of work environment in both

According to current study findings, there were highly significant differences between total knowledge and total skills of maternity nurses regarding to care of pregnant women with systemic lupus, this result is in similar with **Shahin et al. (2018)** who stated that there were statistically significant difference between participants' scores of knowledge and practice, while, this result contradicted with **Metwaly, (2016)** who conducted the nursing core competencies of staff nurses providing care for immune disease patients, showed that there was significant correlation found between total nursing knowledge and total practice among maternity nurses, this contradict may be due to different of work environment and low competencies of practice for health education personnel and in interesting of maternity nurses to develop herself.

Conclusion:

The findings of the current study answer the research question and concluded that there was slightly more than half of the studied nurses had poor knowledge and less than two thirds of studied nurses had incompetent skills about to care of pregnant women with systemic lupus and highly statistically significant difference between total knowledge and total skills score regarding to care of pregnant women with systemic lupus $p (0.001)$.

Recommendations:

- In the light of the previous results of the present study the following recommendations were suggested that:
- Continuous training to improve nurse's knowledge and practice regarding nursing care of pregnant women with systemic lupus during pregnancy.
- Evaluate the effect of different preventive strategies on improving pregnancy outcome among pregnant women with SLE women.
- **Further study:**
Evaluate the effect of instructional guidelines related to care of pregnant women with systemic lupus on pregnancy outcome.

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