

Effect of Implementing Back School Program on the Severity of Lower Back Pain among Nurses

Asmaa Rabee Mabrouk¹, Zinab Hussien Ali², Fatma Shoeib Ali³

¹Clinical Instructor, Medical Surgical Nursing, Modern University for Technology and Information, Cairo, Egypt

²Prof. of Medical Surgical Nursing, Helwan University, Cairo, Egypt

³Lecturers of Critical Care and Emergency Nursing, Cairo University, Cairo, Egypt

* E-mail of the corresponding author: Asmaarabee2034@yahoo.com

Abstract: Low back pain (LBP) is a common problem among healthcare workers with both health and socioeconomic impact, as Disability, Absenteeism from work due to illness. Back school program are good active therapy options that include both exercises and education for the treatment of low back pain Aim of the study: to evaluate the effect of implementing back school program on the severity of lower back pain among nurses. Research design: A quasi-experimental design was utilized. Setting: The study was conducted at Cairo University Hospital in ICU unit. Methods: A purposive sample of 60 nurses from both genders. Tools: (I): Self-Administer Interview Questioner, (II): knowledge assessment tool, (III): observational chick list sheet. Results: This study revealed that there was a statistically significant difference between pre, post 1 and post 3 months regarding to severity of low back pain scale with p-value (<0.001). Conclusion: In conclusion, the application of a back-school program intervention for LBP is effective in improving the severity of low back pain among nurses, in addition to improving their related knowledge and practice. Recommendation: The study should be replicated on large sample and different hospitals setting in order to generalize the results and Guidelines for preventing low back pain.

Keywords: back school program, lower back pain.

1. INTRODUCTION

Low back pain is a worldwide health problem. It is a common form of musculoskeletal disorders; it was defined as pain or muscle tension below the costal margin and above the inferior gluteal fold, with or without leg pain, (LBP) is a nonspecific condition of acute or chronic pain in or near the lumbosacral spines. It can be caused by inflammatory, degenerative, neoplastic, gynecologic, traumatic, metabolic, or other disorders (1). Low back pain is a common problem among healthcare workers with both health and socio-economic impact, as Disability, Absenteeism from work due to illness of low back pain is an important indication of productivity at work and also interferes with the quality of life (2).

Back pain is one of the most frequent reasons people seeks medical care. It is important to remember that back pain is a symptom. Common causes of back pain include nerve and muscular problems, degenerative disc disease, and arthritis. However, pain arising from other organs may be felt in the back. Other medical conditions, such as appendicitis, kidney diseases, pelvic infections, and ovarian disorders, among others, can cause low back pain. Most of the time, back pain is relatively minor, and 80 percent of episodes of acute low back pain will resolve within six weeks, regardless of whether you seek treatment or not (3).

The prevalence of back disorders increases markedly with age, and are affected by lifestyle factors, such as obesity and certain types of physical activity. Although the economic and public health effects of back disorders and especially low back pain are enormous, the burden on the individual and society as a whole is expected to increase dramatically (4). Low

back pain syndrome (LBP) is a significant occupational health problem among health professionals around the globe. Among health workers, nurses are the most vulnerable population for these types of injuries, as patient handling tasks, such as horizontal and vertical lifting, are an unavoidable part of daily patient care. If not executed properly, patient handling tasks lead to low back injuries and cause pain (5).

Numbers of risk factors have been proposed including physical work, psychological, sedentary lifestyle and socioeconomic; as a contributor in low back pain. Back pain is more prevalent in nursing students during their theoretical classes before commencement of their full-time clinical duties. The curriculum in medical colleges is associated with long study hours leading to sedentary life style of medical students and thus making them prone to repeated episodes of back pain. With the in-crease use of computers and laptops the physical activity is decreased among under-graduate students. Bad postural habits during study may also contribute to the prevalence of back pain (6).

Exercise is one of treatments for patient with lower back pain, and exercise programs are the most frequently used treatment method for patients with acute, sub-acute and chronic back pain, exercise is important to prevent both primary and secondary lower back pain. The success of an exercise program depends on the adherence of patients to the treatment plan, and on the accurate performance of the exercises (7). Back school program are good active therapy options that include both exercises and education for the treatment of patients with low back pain, with the goal of managing the patient's current episode and preventing recurrent episodes of low back pain, this method was developed in 1981 in Sweden by Mariane Zachrisson Forsse (8).

2. SUBJECTS AND METHODS

This study was conducted from 1st January to 30th august 2018 at different intensive care units (ICUs) of Cairo University Hospitals these units are: Neuro ICU, Cardiac ICU, Chest ICU and Endemic disease ICU.

A purposive sample of 60 nurses from both genders having low back pain were involved in this study from the above mentioned setting who will have the following criteria.

Exclusion criteria:

1. Nurses with bone disorders.
2. Nurses with spinal disorder or surgery.
3. Pregnant nurses.

Significance of the study:

Low back pain remains a common and costly problem among the nursing profession. Many studies report higher prevalence of back pain and occupational back injuries for nurses compared with other occupational groups. In Egypt, back pain affects 60% of the population and Nurses have been reported to have one of the highest levels of back work-related injuries in all occupational groups (9). Low back pain (LBP) is a highly prevalent health problem responsible for serious suffering and disability than any other health condition across the world (10).

Prevalence of back pain amongst nursing staff varies according to country. The prevalence of back pain amongst nurses varied from 41% – 75% in European countries, to 40% – 60% in Asian countries and 47% in the United States. Data with regard to the prevalence of back pain in nurses in the sub-Saharan African region is limited, which is disconcerting seeing as the biggest increase in the prevalence of back pain is predicted to be in developing countries (11).

At Port Said University, reported that the majority (90%) of the nurse shad LBP related to position, with more than three quarters (75.6%) attributing their low back pain to long standing. In addition, and more than two-thirds (of the nurses were suffering from low back pain due heavy lifting and hospital work (67.5% & 66.5%) respectively nurses. Meanwhile pain alleviated by rest and sitting, standing after a long period and ling down as reported (68% & 40.3%) respectively (12).

The Indian Prevalence of low back pain in nurses is 98% among the above ADLs, lifting, sitting and standing were found to be the most affected tasks as compared to others. The highest affection of 94% in activities apart from ADLs was found in travelling and vocation ADLs and work and leisure, the prevalence is more in first 5 years of experience as compared to 6 to 10 yrs. of experience. Further on with increase in experience the prevalence shows increasing trends (13).

Aim of the Study

The aim of this study is to evaluate the effect of implementing back school program on the severity of lower back pain among nurses through the following:

1. Observe nurses practice regarding back school program.
2. Implement the back school program on the study nurses.
3. Evaluate the effect of back school program on the severity of lower back pain among the study nurses.

3. RESEARCH HYPOTHESIS

At the end of the study:

- The studied nurses will have a high mean score of knowledge and practice regarding back school program.
- The severity of LBP among the study nurses who will attend the back-school program will be improved.

Tools:

Tools of data collection:

Tool 1: Self-Administer Interview Questioner: was adapted from (Mohamed, 2001) (14), and include the following parts:

Part A: Socio-demographic data such as nurses' age, education, the department in which nurses operate, length, weight and BMI.

Part B: Current & Past Medical and Surgical history of the nurses.

Part C: Pain Assessment Questioner as pain duration, pain area, pain description, factor that aggravate pain, pain beginning, symptoms that associated to pain, ways used to stop pain and if nurses seeking medical advice.

Part D: Effect of pain on the activity such as weightlifting, setting, standing, walking, change of clothes, cleaning the house and sleeping.

Part E: low back Pain scale: Numerical Scale it was used to assess back pain among nurses. The level of pain intensity will be scaled as follows: (0) no pain, (1-3) mild pain, (4-6) moderate pain and (7-10) severe pain.

Tool 2: knowledge assessment tool: it's was developed by the investigator based on the back-school program (Pamela Lynn, 2010) (15), it consists of 5 multiple choice (MCQ) questions and 5 true and false questions

Tool 3: observational chick list sheet: it was be developed by the investigator based on the literature review (Pierson & Fairchild, 2012) (16), and was be used to assess body mechanic of the study nurses.

It consists of 9 point each item was checked as either (Done, Done improperly, not done)

Validity and reliability:

Content validity was conducted to determine whether or not the instrument measures what it is designed to measure. The tools were revised by a jury of five nursing experts, who reviewed the content of the tools for comprehensiveness, accuracy, clarity, relevance and applicability. Minor modifications were done. As well, tool reliability was tested to determine the consistency of the measurement instrument. The degree to which an instrument measures the same way each time it used under the same condition with the same subjects. The Cronbach's alpha model, which is a model of internal consistency, was used to test tool reliability. Reliability factor of the first tool (1) Interview questioner (0.722) second tool (2) knowledge tool (0.743) and third tool (3) checklist (0.809) Statistical equation of Cronbach's alpha reliability coefficient normally ranges between 0 and 1; higher values (more than 0.7) denote acceptable reliability.

Pilot study:

A Pilot study was carried out with 10% (6 nurses) of the sample under study to test the applicability, clarity and efficiency of the tools, then the tools modified according to the results of the pilot study, nurses whom shared in pilot study not included in the sample and replaced by other nurses.

Administrative design:

An official permission was obtained from the director of Cairo university Hospitals, in which the study was conducted. A letter was issued to them from the faculty of nursing; Helwan University explains the aim of the study for obtaining the permission for data collection.

Ethical consideration:

An approval was obtained from a scientific research ethics committee of the faculty of nursing at Helwan University and oral informed consent was obtained from the study subjects individually before starting the study. The aim and objectives of the study was clarified to the nurses included in the study by the investigator. Participants were assured that anonymity and confidentiality would guarantee. Nurses were informed that they are allowed to choose to participate or withdraw from the study at any time. Ethics, culture, values were respected.

Procedure:

Procedure for data collection included three phases:

First phase:

Assessment phase: it took one month to assess the studied nurses (n=60). During this stage each nurse was assessed individually using three tools (1, 2 and 3tool):

Tool 1: was utilized to assess demographic, medical history, pain assessment, effect of pain on the activity and low back pain scale it took around 30-40 minutes.

Tool 2: was utilized to assess body mechanic of the study nurses it took around 50-60 minutes.

Tool 3: to assess the nurse's knowledge before and after back school program it took around 30-40 minutes.

First stage of the procedure took around 110:140 minutes for each nurse.

Second phase: implementing phase: Appendix (IV)

This includes implementing the Back-School program on the study nurses, this phase took two months to assess the studied nurses (n=60). The program was divided into 4 sessions (2 theory and 2 practice sessions) each session was implemented in one day and each group around (7:8) nurses this phase took 4 day around (7:8) hours to implement all program, all nurses was finished the program in around 8 weeks.

Third phase:**Evaluation phase:**

This phase includes two stages: evaluation after one month and three months from implementing the back-school program to evaluate the studied nurses.

After 1 month:

This phase will include evaluating the effect of the implemented back school program after one month, this phase took one month, and at this stage used all tool (1, 2 and 3).

After 3 months: This phase will include evaluating the effect of the implemented back school program after three months, this phase took one month, at this stage used tool (1, 2)

Statistical data analysis:

Data were collected and coded to facilitate data manipulation and double entered into Microsoft Access and data analysis was performed using Statistical Package of Social Science (SPSS) software version 18 in windows 7. Descriptive analysis of the collected data was presented in the form of frequencies and percentages or mean \pm SD. Quantitative data were analyzed by using independent samples t- test to compare between study and control group. Chi square test was used to detect the relations between different variables. Statistical significance was considered at $P < 0.05$ and insignificant at $P > 0.05$.

Table (1): Demographic characteristics of the studied nurses (N=60).

Socio-demographic data	No.	%
Age (years)		
≤25 years	18	30.0
>25-30 years	28	46.6
>30-35 years	10	16.7
>35 years	4	6.7
Gender		
Female	39	65.0
Male	21	35.0
Qualification		
Secondary Diploma	8	13.4
Technical institute	26	43.3
Bachelor	26	43.3
Units		
Neuro ICU	15	25.0
Cardio ICU	15	25.0
Chest ICU	15	25.0
Endemic disease ICU	15	25.0
BMI [wt/(ht)^2]		
Normal	13	21.7
Overweight	45	75.0
Obese	2	3.3

Table (1) shows that, the main age of the studied nurses was >25-30 years, the majority of their gender was female (65.0%), the majority of qualification was technical institute and bachelor there were divided equal (43.3%) for each, while more than two thirty was over weight (75.0%).

Table (2): Number and percentage distribution of nursing according to their preprogram assessment of pain (N=60).

Pain characteristics	Pre		Post 1 month		Post 3 month		Pre-& Post 1m		Post 1m & Post 3m	
	No.	%	No.	%	No.	%	x2	p	x2	P
4. Pain area										
Lower back	59	98.3	60	100.0	59	98.3				
Buttocks and legs	1	1.7	0	0.0	1	1.7				
5. Pain description										
Burning	0	0.0	7	11.7	9	15.0				
Tighten or tension pain	31	51.7	35	58.3	43	71.7	9.817	0.007*	4.917	0.086
Prickle	29	48.3	18	30.0	8	13.3				
6. Pain beginning										
Gradually	37	61.7	41	68.3	41	68.3				
Suddenly	23	38.3	19	31.7	19	31.7	0.586	0.444	0.000	1.000
7. Duration of the pain										
≤1 day	16	26.7	21	35.0	37	61.7				
2-4 days	31	51.7	31	51.7	23	38.3	3.898	0.273	13.599	<0.001**
5-7 days	10	16.6	8	13.3	0	0.0				
>7 days	3	5.0	0	0.0	0	0.0				
8. Pain symptoms										
Difficulty of movement	53	88.4	46	76.7	40	66.7				
Feeling hot	3	5.0	10	16.7	11	18.3				
Sweating	0	0.0	1	1.7	0	0.0	5.598	0.231	10.800	0.056
Numbness in lower extremity	2	3.3	1	1.7	0	0.0				

Muscle strain	2	3.3	2	3.2	1	1.7				
Fatigue	0	0.0	0	0.0	8	13.3				
9. Factors that aggravate the pain of your back during work										
Change the patient's position in bed	34	56.7	11	18.3	9	15.0				
Transfer the patient from bed to trolley	9	15.0	0	0.0	0	0.0				
Lift heavy weight object	44	73.3	35	58.3	28	46.6	79.179	<0.001**	5.388	0.370
Work without nursing assistants	17	28.3	15	25.0	22	36.7				
Take a squat position while measuring the amount of urine or chest drain	4	6.7	1	1.7	1	1.7				

*p-value <0.05 S; **p-value <0.001 HS

Table (2) shows that, there are statistically significant difference between preprogram and post one months and three months with p-value >0.05, there was statistically significant between pre and post one month in pain description (0.007), statistically significant relation between pre and post one-month in. Factors that aggravate the pain of your back during work (<0.001), also statistically significant between post one and post three months according to duration of the pain (<0.001).

Table (3): Comparison between pre, post 1 and post 3 months from Back School Program according to effect of pain on the activity among nurses (N=60).

Effect of pain on the activity	Pre		Post 1 month		Post 3 month		Pre & Post 1m		Post 1m & Post 3m	
	No.	%	No.	%	No.	%	x2	p	x2	P
15. Weightlifting										
No	0	0.0	2	3.3	11	18.3				
Mild	33	55.0	44	73.3	45	75.0	7.693	0.021*	11.798	0.003*
Moderate	27	45.0	14	23.3	4	6.7				
16. Sitting										
No	21	35.0	47	78.3	56	93.3				
Mild	38	63.3	4	6.7	1	1.7	43.865	<0.001**	5.586	0.061
Moderate	1	1.7	9	15.0	3	5.0				
17. Standing										
No	1	1.7	1	1.7	27	45.0				
Mild	30	50.0	53	88.3	28	46.7	21.488	<0.001**	31.950	<0.001**
Moderate	29	48.3	6	10.0	5	8.3				
18. Walking										
No	8	13.3	18	30.0	47	78.3				
Mild	48	80.0	35	58.3	9	15.0	6.700	0.035*	29.120	<0.001**
Moderate	4	6.7	7	11.7	4	6.7				
19. Change of clothes										
No	6	10.0	26	43.3	54	90.0				
Mild	14	23.3	23	38.3	3	5.0	31.179	<0.001**	29.756	<0.001**
Moderate	40	66.7	11	18.3	3	5.0				
20. Cleaning the house										
No	0	0.0	0	0.0	2	3.3				
Mild	0	0.0	16	26.7	38	63.3	34.895	<0.001**	21.192	<0.001**
Moderate	34	56.7	41	68.3	20	33.3				
Severe	26	43.3	3	5.0	0	0.0				

*p-value <0.05 S; **p-value <0.001 HS

Table (3) shows that, statistically significant difference between pre and post 1 and post 3 months from Back School Program with p- value <0.05 , according to Weightlifting was (0.021) after 1month while (0.003) after three months, Sitting was (<0.001) after 1month but no significance (0.061) after three months, Standing was a high significance (<0.001) after one month while was a high significance (<0.001) after three months, Walking was (0.035) after one month; (<0.001) after three months, Change of clothes was a high significance (<0.001) after one month as well as a high significance (<0.001) after three months and Cleaning the house was a high significance (<0.001) after one month and was a high significance (<0.001) after three months.

Table (3): Cont. Comparison between pre, post 1 and post 3 months from Back School Program according to effect of pain on the activity among nurses (N=60).

Effect of pain on the activity	Pre		Post 1 month		Post 3 month		Pre & Post 1m		Post 1m & Post 3m	
	No.	%	No.	%	No.	%	x2	p	x2	p
21,1. Does pain prevent you from falling asleep										
No	0	0.0	12	20.0	40	66.7	43.608	<0.001**	27.861	<0.001**
Mild	11	18.3	34	56.7	17	28.3				
Moderate	47	78.3	14	23.3	3	5.0				
Severe	2	3.3	0	0.0	0	0.0				
21,2. Does pain wake you from your deep sleep										
No	1	1.7	13	21.7	42	70.0	25.244	<0.001**	30.967	<0.001**
Mild	19	31.7	31	51.7	16	26.7				
Moderate	35	58.3	16	26.7	2	3.3				
Severe	5	8.3	0	0.0	0	0.0				
21,3. Do you feel tired when waking up										
No	0	0.0	2	3.3	21	35.0	64.573	<0.001**	22.946	<0.001**
Mild	4	6.7	45	75.0	36	60.0				
Moderate	47	78.3	13	21.7	3	5.0				
Severe	9	15.0	0	0.0	0	0.0				
21,4. Does pain make you very nervous during your transaction with others										
No	0	0.0	18	30.0	43	71.7	39.939	<0.001**	20.876	<0.001**
Mild	18	30.0	31	51.7	13	21.7				
Moderate	40	66.7	11	18.3	4	6.7				
Severe	2	3.3	0	0.0	0	0.0				
21,5. Does pain make you feel uncomfortable and do not bear your-self										
No	0	0.0	5	8.3	24	40.0	48.015	<0.001**	20.338	<0.001**
Mild	7	11.7	39	65.0	32	53.3				
Moderate	49	81.7	16	26.7	4	6.7				
Severe	4	6.7	0	0.0	0	0.0				
21,6. Was the pain a reason to be absent from work										
No	1	1.7	18	30.0	47	78.3	18.079	<0.001**	28.305	<0.001**
Mild	44	73.3	31	51.7	9	15.0				
Moderate	15	25.0	11	18.3	4	6.7				
21,7. Was the pain a reason to prevent you from participating in the										

transfer or change the patient's position										
No	0	0.0	20	33.3	49	81.7				
Mild	23	38.3	23	38.3	7	11.7	28.980	<0.001**	29.090	<0.001**
Moderate	36	60.0	15	25.0	4	6.7				
Severe	1	1.7	2	3.3	0	0.0				
Total effect of pain on the activity										
Mild Pain	9	15.0	44	73.3	55	91.7	41.397	<0.001**	6.984	0.008*
Moderate Pain	51	85.0	16	26.7	5	8.3				

*p-value <0.05 S; **p-value <0.001 H

cont... table (3) shows that a high significant difference between pre, post one and post three months from Back School Program according to effect of pain on the sleeping activity with p-value <0.05.

Table (4): Comparison between pre, post 1 and post 3 months from Back School Program according to mean score of severity of low back pain scale among nurses (N=60).

Low back pain scale	Pre	Post 1 month	Post 3 month	ANOVA	p-value
Mean±SD	6.43±1.58	5.20±1.61	3.60±1.62	47.132	<0.001**
Range	3-10	2-8	1-7		

**p-value <0.001 HS

Table (4) shows that, highly statistically significant difference between pre, post one and post three months according to severity of low back pain scale with p-value (<0.001), on the other hand statistically significant was decreased the pain severity from (6.43±1.58) to (5.20±1.61) after one month to (3.60±1.62) after three months from program, so highly statistically significant difference with p-value was (<0.001).

Fig. (1): Percentage of comparison between pre, post Back School Program according to knowledge of low back pain and back school program among nurses (no=60).

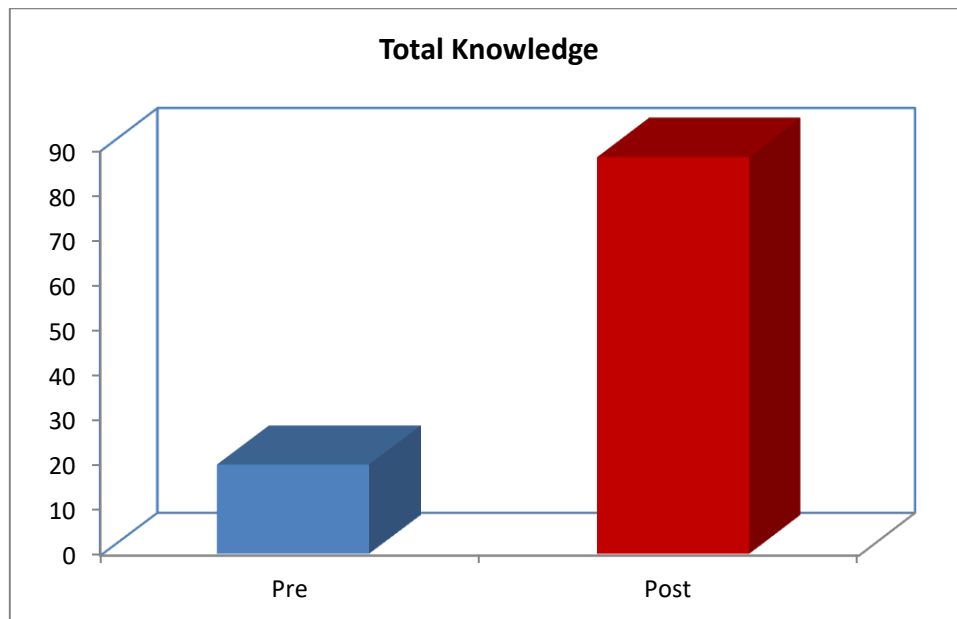


Fig. (1): shows that, statistically significant difference between pre and post back School Program according to knowledge satisfied, on the other hand statistically significant was increased in total knowledge among studied nurses from (20.0%) to (88.3%) with p-value<0.001.

Table (5): Comparison between pre, post 1 and post 3 months from Back School Program according to observational checklist among nurses (N=60).

Observational Checklist items	Pre		Post 1 month		Post 3 month		Pre & Post 1m		Post 1m & Post 3m	
	No.	%	No.	%	No.	%	x2	p	x2	P
1. Use good posture and keep back straight										
Not done	20	33.3%	0	0.0%	0	0.0%				
Done improperly	15	25.0%	7	11.7%	2	3.3%	32.960	<0.001**	1.922	0.166
Done Properly	25	41.7%	53	88.3%	58	96.7%				
2. Plan your movements before beginning										
Not done	38	63.3%	4	6.7%	1	1.7%				
Done improperly	8	13.3%	11	18.3%	4	6.7%	44.286	<0.001**	6.067	0.048*
Done Properly	14	23.3%	45	75.0%	55	91.7%				
3. Check to see if the weight of an item you can prepare										
Not done	15	25.0%	6	10.0%	1	1.7%				
Done improperly	13	21.7%	6	10.0%	5	8.3%	9.636	0.008*	4.015	0.0134
Done Properly	32	53.3%	48	80.0%	54	90.0%				
4. Provide base of support										
Not done	40	66.7%	9	15.0%	3	5.0%				
Done improperly	4	6.7%	14	23.3%	5	8.3%	33.489	<0.001**	9.791	0.008*
Done Properly	16	26.7%	37	61.7%	52	86.7%				
5. Use strongest and largest muscle to do the job										
Not done	18	30.0%	2	3.3%	2	3.3%				
Done improperly	12	20.0%	11	18.3%	5	8.3%	16.597	0.002*	2.610	0.271
Done Properly	30	50.0%	47	78.3%	53	88.3%				
6. Move muscles as one unit and in alignment rather than twisting										
Not done	23	38.3%	2	3.3%	1	1.7%				
Done improperly	13	21.7%	15	25.0%	7	11.7%	23.171	<0.001**	4.095	0.129
Done Properly	24	40.0%	43	71.7%	52	86.7%				
7. Use smooth, rhythmic and coordinated motion										
Not done	27	45.0%	5	8.3%	3	5.0%				
Done improperly	20	33.3%	22	36.7%	7	11.7%	23.916	<0.001**	11.741	0.003*
Done Properly	13	21.7%	33	55.0%	50	83.3%				
8. Carry objects close to your body to prevent back strain										
Not done	1	1.7%	6	10.0%	1	1.7%				
Done improperly	13	21.7%	16	26.7%	7	11.7%	4.644	0.098	9.271	0.009*
Done Properly	46	76.7%	38	63.3%	52	86.7%				
9. To change the direction of your work, take a short step and return whole body without twisting your back or neck										
Not done	16	26.7%	5	8.3%	1	1.7%				
Done improperly	30	50.0%	30	50.0%	15	25.0%	8.864	0.012*	12.899	0.002*
Done Properly	14	23.3%	25	41.7%	44	73.3%				
Observational checklist										
Satisfied	8	13.3%	32	53.3%	53	88.3%	19.837	<0.001**	18.202	<0.001**
Unsatisfied	52	86.7%	28	46.7%	7	11.7%				

*p-value <0.05 S; **p-value <0.001

Table (5) shows statistically significant difference between pre and post one months and three months from Back School Program according to observational checklist with p-value (<0.05), significant was increased in satisfied practice among studied nurses from (13.3%) to (53.3%) after one month and (88.3%) after three months, So highly statistically significant difference with p-value was (<0.001).

Table (6): Relation between nurses mild, moderate and severe pain regarding low back pain scale and their effect of pain on the activity (n=60).

Effect of pain on the activity	Low back pain scale						x2	p-value
	Mild Pain		Moderate Pain		Severe Pain			
	No.	%	No.	%	No.	%		
Mild Pain effect	11	100.0%	29	82.9%	4	28.6%	19.968	<0.001**
Moderate Pain effect	0	0.0%	6	17.1%	10	71.4%		
Total	11	100.0%	35	100.0%	14	100.0%		

*p-value <0.05 S

Table (6) shows statistically significant relation between nurses' low back pain scale with mild, moderate and severe regarding effect of pain on the activity with p-value (<0.05).

Table (7): Relation between nurses mild, moderate and severe pain regarding low back pain scale and their knowledge of low back pain and back school program (n=60).

Knowledge of Low Back Pain and Back School Program	Low back pain scale						x2	p-value
	Mild Pain		Moderate Pain		Severe Pain			
	No.	%	No.	%	No.	%		
Satisfied (n=53)	11	100.0%	34	97.1%	8	85.7%	17.305	0.004*
Unsatisfied (n=7)	0	0.0%	1	2.9%	6	42.9%		
Total	11	100.0%	35	100.0%	14	128.6%		

*p-value <0.05 S

Table (7) shows statistically significant relation between nurses' low back pain scale with mild, moderate and severe regarding knowledge of low back pain and back school program with p-value (<0.05).

Table (8): Relation between nurses mild, moderate and severe pain regarding low back pain scale and their total practice (n=60).

Total practice	Low back pain scale						x2	p-value
	Mild Pain		Moderate Pain		Severe Pain			
	No.	%	No.	%	No.	%		
Satisfied (n=32)	10	90.9%	19	54.3%	3	21.4%	11.979	0.003*
Unsatisfied (n=28)	1	9.1%	16	45.7%	11	78.6%		
Total	11	100.0%	35	100.0%	14	100.0%		

*p-value <0.05 S

Table (8) shows statistically significant relation between nurses' low back pain scale with mild, moderate and severe regarding total practice with p-value (<0.05).

4. DISCUSSION

The socio demographic characteristic and medical data sheet of the study sample

The present study showed that, about half of studied nurses were 25-30 years, most of them were female and more than one thirds had work experience >5-10years years and more, this could be result of the male are recent graduation than female nurses, in relation to nursing qualifications, the lowest percentage of qualification was secondary diploma and the technical institute and bachelor is equal about thirty-four. And no nurses have any learning about low back pain.

Comparison between Pre and post one and 3 month of assessment of pain among nurses

Regarding Number and percentage distribution of nursing according to their pre-program of pain history, the present study showed that, the majority of pain area was lower back the major duration of pain from 2-4 day while the lowest duration of pain >7days.

This was in line with (13), who studied Occupational Back Pain among Rehabilitation Nurses, the Influence of Knowledge and Awareness, Saudi Arabia, emphasized that, Regarding the duration of back pain, more than half of participants reported having back pain for 7 days or less and ten percent reported having back pain daily, On the same line (18), who studied Effectiveness of an education program to prevent nurses' low back pain: An interventional study in Turkey, confirmed that More than two thirds of nurses in Turkey had low back pain. Approximately 2 in 10 nurses experience severe symptoms related to low back pain each year.

More than one half was describe the pain by tension pain, while about half was describe the pain by prickle in lower back pain, more than one half was pain beginning gradually, more than one third was pain beginning suddenly, there are more than two third was pain associated with Difficulty of movement, the major factor that aggravate pain during work was lifting heavy objects was more than one half, while only of factor was Take a squat position while measuring the amount of urine or chest drain.

In this respect (19), who studied Frequency And Severity Of Low Back Pain In Nurses Working In Intensive Care Units And Influential Factor, showed that, Majority of the nurses experienced low back pain and about two third of the nurses evaluated this pain as "moderately severe", performed by Visual analyzed scale revealed that the mean duration of low back pain was 1.5 ± 0.8 years, and that more than half of the nurses experienced low back pain for 0-3 years and more than one third had pain attacks once a week, Physical exposure to patient handling, reflected by the number of patients handled daily and the time spent in patient handling, was shown to be a significant risk factor for the development of low back pain.

In this respect (20), who studied Low back pain among nurses: Effect of psychological and occupational factors, Iran, reported Among the physical factors, "move equipment weighing more than 5 kg" and "Bending over to pick up objects from the floor" were identified as risk factors for low back pain in occupational physical. Several other studies have found similar results.

Concerning assessment of pain the present study showed that the majority didn't seek medical advice, more than two third didn't use any way to stop lower back pain while less than used ways to stop lower back pain, the majority of this way was take a rest while only quarter was use back strap, more than two thirty of them was said no effect of this ways, and more than one half of them was known this method by self-knowledge while minority know this method by doctors. This could be as a result of majority of nursing didn't seek any medical advice because there are depended on their experience to deal with pain and their show the pain is not a major problem to seek advice.

This finding was consistent with (19), who confirmed that one third of the nurses who experienced low back pain did not make any attempts to relieve the pain, half of them experienced an increase in low back pain, most of them did not see a doctor, and majority did not receive any treatment for their low back pain.

There is statistically significant difference between preprogram and post one months and three months. On another hand, statistically significant improved Factors that aggravate the pain of your back during work post one month, also statistically significant between post one and post three months according to duration of the pain. This could be a result of the studied nursing were had awareness about back school program and it was effective in improve pain, in this respect (21), confirmed that a Back-School program effectively alters patient lifting methods in practice and can improve pain duration and reduce the intensity of pain in the lower lumbar region in nurses.

In this respect (20), emphasized that, the effect of exercise on pain, Iran; the results show Regular exercise reduces the risk of experiencing low back pain. People who exercise regularly have occurs lower back pain less. Daily exercise helps to maintain and strong back muscles so that it can be adapted with sudden force and thus decreases the frequency and severity of low back pain against abnormal forces.

Comparison between Pre and post one- and 3-month regarding effect of pain on the daily activity

The present study showed percentage of the studied nurses according to their preprogram effect of pain on the activity, more than one half of studied nurses weightlifting activity were mild pain, more than one half of sitting position was mild pain, as well as more than one half of standing position was mild pain while minimum of them was no pain, more than two third of walking activity was mild pain while only thirteen percent there was no pain, as well as two third of change of clothing activity was moderate pain while only ten percent had no pain and more than one half of cleaning the house had moderate pain while more than one third had severe pain. This could be as a result of the majority of studied nursing didn't use good body posture during daily activity that lead to strain back muscle and cause pain that effect on nurse's activity.

(22), who studied, the problem of lower back pain in nursing staff and its effect on human activity, Greece, reported that, it was found that the higher the levels of pain, the more intense are the reactions expressed through behavior on the part of the individuals involved. One interpretation of this could be that pain acts as a repressive factor, thus restricting rest and sleep in nursing staff, as well as their capacity to communicate and develop their interpersonal relationships, also (23), who studied Low Back Pain in Nurses, added that, LBP restrict the nurses' performance regarding their daily life activities and hinder their interpersonal relations.

The present study showed the statistically significant difference between pre and post one and post three months from Back School Program according to Weight lifting, standing was 1 month high significance three months was high significance, Walking was 1 month was 3 months was high significance, change of clothes was 1 month high significance was 3 months was high significance and Cleaning the house was 1 month high significance was 3 months was high significance. The investigator point of view these results illustrate the high significance related excessive training of correct body position of studied nurse and body mechanic become easier to applicable.

In this respect, (24), who studied, Occupational interventions for the prevention of back pain: Overview of systematic reviews, Canada reported that Back school programs: studies reported a reduction in back injury rates, decrease in lost time, study showed no change in costs and increase in flexibility and body mechanic usage scores (measure of the positioning of the body while moving, lifting, lowering, pulling or transferring objects or patients), respectively.

Comparison between pre, post one and post 3 months from Back School Program according to severity of low back pain scale among nurses

There was statistically significant difference between pre, post one month and post three months from low back pain scale. More than one half was moderate pain at preprogram, more than one thirty was severe pain, while only was mild pain, while after one month more than one half was moderate, the pain was decreased on severe pain from more than one third to less than quarter after three months pain was decreased to five percent, more than one half was mild pain and there is show the high significance of pain. This could be a result of apply the principles of body mechanics and body posture during daily activity and working.

This finding was consistent with (25), who studied, Lower Back Pain; Evolution of Back School Therapy, Indian, reported in a double blind controlled prospective study, to evaluate the effectiveness of a back school compared with an exercise only regimen, according to specified outcome variables. Three assessments were made: before treatment and 6 and 16 weeks after treatment. Changes in patients' levels of pain, functional disability and other related variables were compared in the two groups. They reported that almost all variables showed an improvement at 6 weeks. At 16 weeks, functional disability and pain levels showed a significant difference. Back school patients continued to make an improvement. They concluded that all chronic low back pain patients would benefit from a program of back care education, such as is offered by the back school. They considered back school an important adjunct to other forms of treatment, both conservative and surgical.

Comparison between pre, post 1 and post 3 months from Back School Program according to practice and observational checklist among nurses

The study was show statistically significant difference between pre and post one months and three months from Back School Program according to observational checklist, was significant increase in satisfied practice among studied nurses after one month and more increased after three months, on the other hand the unsatisfied practice among studied nurses

was decreased after one month and more after three months, So highly statistically significant difference., the investigator point of view is The unsatisfied practice among studied nurses was decreased after 1month and satisfaction practice was increased after 3months because after one month every nurse is repeated the steps they had missed or failed.

This finding was in the same line with (25), who studied Lower Back Pain; Evolution of Back School Therapy, India, concluded that Back school therapy was as helpful as more vigorous physical therapy program and significantly better. Patients in back school therapy had significantly less time absent from work as compared to groups in physical therapy and placebo.

Relation between nurse's mild, moderate and severe pain regarding low back pain scale and their effect of pain on the activity

The current results revealed that there were statistically significant relations between nurses' low back pain scale with mild, moderate and severe regarding effect of pain on the activity. This result supported by (26), who studied, Evaluation of a program to reduce back pain in nursing personnel, Brazil, presents indicators of the severity of back pain associated with aspects of participants' activities after the program.

Relation between nurse's mild, moderate and severe pain regarding low back pain scale and their knowledge of low back pain and back school program

There was statistically significant relation between nurses' low back pain scale with mild, moderate and severe regarding knowledge of low back pain and back school program. This result supported by (18), revealed that the total knowledge scores of the nurses immediately and after one month after the intervention were higher than their mean knowledge scores before the intervention, and this difference was statistically significant with low back pain scale.

Relation between nurse's mild, moderate and severe pain regarding low back pain scale after one month and their total practice

The current study showed statistically significant relation between nurses' low back pain scale with mild, moderate and severe regarding total practice. This result was consistent with (18), the total practice scores before, just after one-month training program. The total behavior scores increased after the training when compared to the pre-training status. On further analysis, mean scores for all practice increased just after training compared to the pre-training status, and this change was statistically significant with low back pain score.

5. CONCLUSION

In the light of the current study results, it can be concluded that, the aim and hypothesis of the current study were achieved, as follow mean score of knowledge and practice of the studied nurses were improved that which leads to decreased the severity of low back pain and the designated back school program was more effective in the improved pain intensity in daily activity.

6. RECOMMENDATIONS

- Health education on proper posture and correct lifting techniques should be introduced in the workplace to reduce the burden of low back pain among the nurses working in different setting.
- Guidelines for preventing low back pain should be provided and the nurses should encourage and support to practice low back pain preventive measures to prevent the injury and promote a better quality of life of the nursing personnel.
- The study should be replicated on large sample and different hospitals setting in order to generalize the results.

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