Academia Open
Vol 9 No 2 (2024): December
DOI: 10.21070/acopen.9.2024.8942 . Article type: (Clinical Research)

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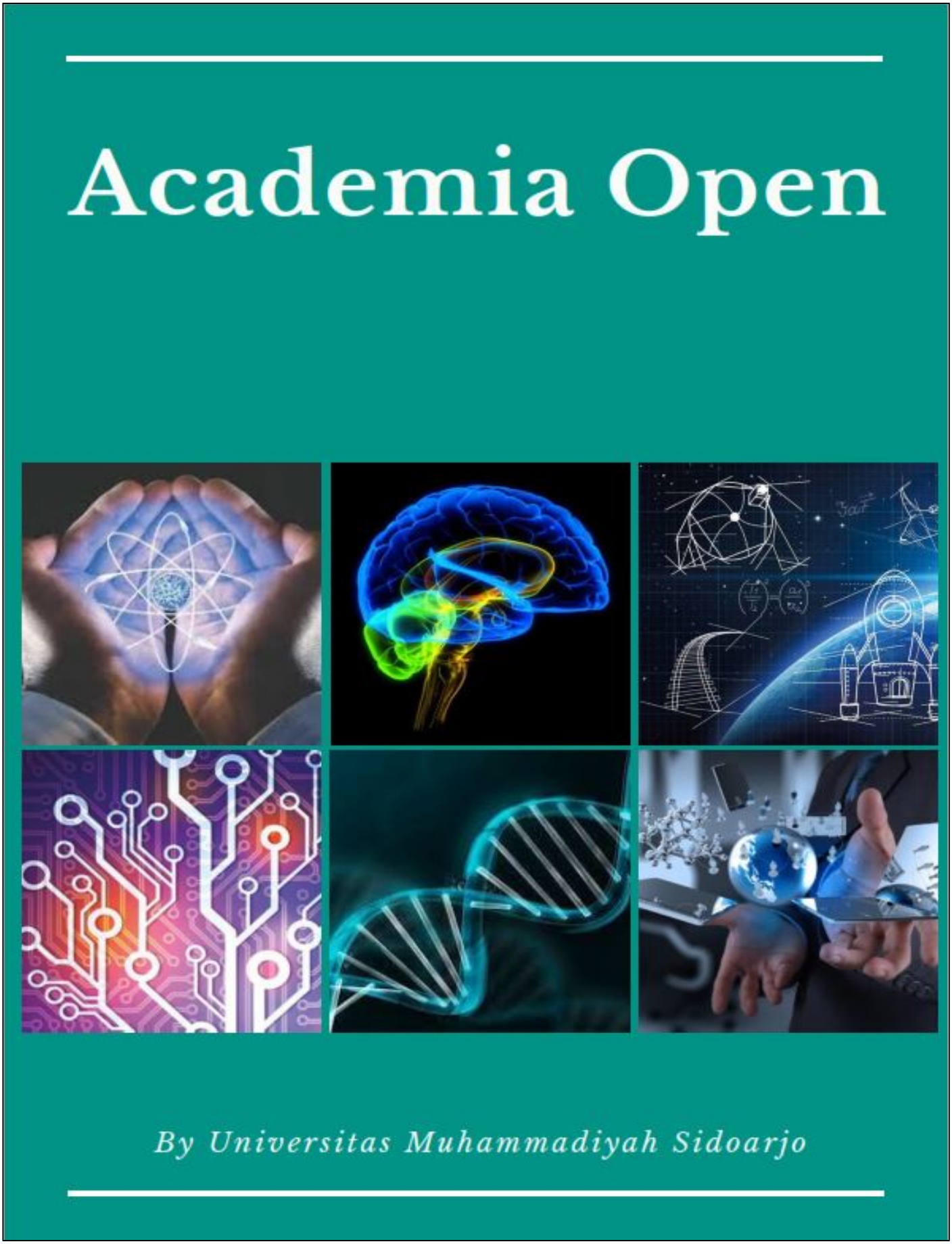

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Academia Open
Vol 9 No 2 (2024): December
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DOI: 10.21070/acopen.9.2024.8942 . Article type: (Clinical Research)

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Educational Boost Slashes SIDS Risk Awareness Gap Among Nurses in Iraq

Peningkatan Pendidikan Memangkas Kesenjangan Kesadaran Risiko SIDS di Kalangan Perawat di Irak

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Abstract

This study evaluates the impact of an educational program on nurses' knowledge of Sudden Infant Death Syndrome (SIDS) risk factors at pediatric teaching hospitals in Baghdad City. Using a quasi-experimental design with fifty nurses divided into a control and a research group, we assessed knowledge levels through pre-tests and two post-tests. Results indicated that the educational intervention significantly improved nurses' knowledge from 60% to 76%, although this effect diminished slightly over time. The study underscores the importance of continuous education in enhancing nurse awareness and the implementation of safe sleep practices to reduce SIDS occurrences.

Highlights:

- Educational Impact: The study demonstrates a significant increase in nurses' knowledge about SIDS risk factors following an educational intervention.
- Sustained Learning: Knowledge gains were observed to diminish slightly over time, highlighting the need for ongoing educational programs.
- Practical Implications: Enhanced nurse training supports safer sleep practices, potentially reducing the incidence of SIDS.

Keywords: Nurse Education, Knowledge, Risk Factors, Sudden Infant Death Syndrome, Safe Sleep Practices

Published date: 2024-05-14 00:00:00

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Introduction

Sudden infant death syndrome (SIDS) is an unknown cause of death among infants within the first year of life. It has been closely related to prone sleeping since 1965[1]. The pathophysiology of SIDS is assumed to be complex and is governed by the “triple risk hypothesis”: an at-risk infant with an intrinsic susceptibility that is still unknown, a critical development period during infancy, and extrinsic risk factors[2], [3], [4], [5]. The theories behind safe sleeping behaviors in infancy are not widely known, yet a sizable amount of research supports back sleep. Since a number of unexpected events that occur during sleep are linked to sudden newborn death risk factors, the American Academy of Pediatrics has broadened its approach to recognize several safe sleep habits that can decrease the risk of sleep-related infant mortality. These habits include preventing bed-sharing and smoking, approving the use of the supine posture and acceptable surfaces for all sleep, breastfeeding, and sufficient prenatal care[6], [7]. Infants who are male, premature, or have a low birth weight (LBW) are at greater risk of dying from SIDS, as are those whose mothers are impoverished or who use illicit drugs. Siblings of infants who have died of SIDS have a three- to five-fold greater risk of the condition, which is most prevalent in the winter. Before 4 weeks or after 6 months of age, SIDS is rare, and it occurs most frequently between 2 and 4 months[8]. According to the Iraq Ministry of Health, the infant mortality rate in 2022 was 19.8/1000 live births, and in the governorate of Baghdad, it was 22.0/1000 live births[9]. Most of the knowledge about SIDS came from pediatricians. By providing healthcare professionals with accurate and current information on safe sleep patterns, they can better educate and advise parents on pertinent risk factors to prevent sudden infant death syndrome[10]. However, SIDS risk factors are avoidable and can be decreased by enhancing knowledge and altering related behaviors among parents and medical professionals[1]. Still, educating Iraqi people about SIDS has not been a national health planning priority. On the other hand, Qasim and Alrabaty recommended education for nurses in the neonatal care units about the latest recommendations about safe infant sleep[11]. Therefore, the aim of this study was to evaluate the effectiveness of an educational program on nurses' knowledge regarding risk factors for sudden infant death syndrome.

Method

A. Design of the Study

A quasi-experimental study design two-study group (pre-test, post-test I and post-test II).

B. Setting of the Study

The study was carried out in child welfare teaching hospitals and the central teaching hospital for pediatrics. Baghdad City, Iraq.

C. Sample of the Study

A non-probability (convenience) sample of the study participants consisted of fifty nurses, divided into two groups: 25 nurses in the research group and 25 nurses in the control group. The study groups received an educational program, whereas the control group did not. Both groups completed the pre-test, post-test I, and post-test II.

1. Ethical Considerations

The College of Nursing Scientific Research Ethics Committee (third session, November 22, 2023) must grant ethical approval for the project before it may begin. After giving the nurses an in-depth description of the study that would be conducted, they gave their oral consent. In addition to promising to uphold the strict confidentiality of the data extracted from the study sample and use it only for related scientific goals, they also have the right to cancel from the study whenever they become uncomfortable or frustrated with any of the questions on the questionnaire that was created as an instrument for research or the way the researcher is gathering data.

2. The Construction of the Tools and Program

Based on the results of the preliminary assessment of nurses' needs, that showed poor nurses' knowledge about SIDS prevention and after reviewing literature, these intended guidelines were designed based on updated recommendations for a safe infant sleeping environment[7]. The researcher has constructed the study instruments based on a review of the relevant literature and previous studies. The questionnaire was used as a tool and approach to gather data. It was divided into two sections:

a . Section One

This section has six items relevant to the socio-demographic attributes of the sample, such as the age, gender, education level, marital status, number of years of NICU experience, and number of training sessions of the nurses.

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b . Section Two

This section consists of ten questions that assess nurses' knowledge of the risk factors associated with SIDS.

3. The Educational Program Implementation

Nurses were given a chance to participate in an educational program aimed at improving their knowledge of SIDS prevention from September 14, 2023, to February 21, 2024.

D. Pilot Study

The pilot study was carried out on five nurses in the NICU to validate the content of the questionnaire and determine the time needed for data collection.

E. Validity of the Study

The program's and study tools' content validity is confirmed by a review by a panel of 13 specialists with more than nine years of expertise in their respective fields. The experts' opinions and suggestions were taken into account, and the final copy of the developed instrument and program is currently appropriate as a tool to carry out the study.

1. Reliability

The questionnaire's reliability was assessed using a test-retest approach, with five nurses from the NICU evaluated at two-week intervals. The alpha correlation coefficient (r =0.740) demonstrates that the questionnaire format is sufficiently dependable.

2 . Rating and Scoring of the Study Instrument

For the purpose of scoring instrument’s items, athree Likert scale was used for knowledge scale and scored as follows: I know (1), Uncertain (0), and I don’t know (0). Following the calculation of the range from minimum score and maximum score, the range score was divided into three levels and scored as follows in order to estimate the knowledge score: 0–0.33, Fair–0.34–0.66, Good–0.67–1 are the values for the poor.

F. Data Collection Method

Constructive knowledge questionnaires were used by the researcher to gather data, which was then addressed in interviews using structured, closed-ended questions. About 15 to 20 minutes were provided to each nurse to finish their assessment.

G. Statistical Analysis

The statistical package for social sciences, version 26.0 (SPSS), was used to analyze the data collected for this research.

Results and Discussion

A. Results

No.	Characteristics		Study group		Control group	
			F	%	F	%
1.	Age (Years)	20 – less than 30	21	84	16	64
		30 – less than 40	3	12	6	24
		40 – less than 50	0	0	1	4
		50 and more	1	4	2	8
		Total	25	100	25	100
		M ± SD	26.56 ± 6.6		30.48 ± 10.4	
2.	Sex	Male	3	12	3	12

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		Female	22	88	22	88
		Total	25	100	25	100
3.	Qualification in nursing	Secondary school	6	24	8	32
		Diploma	12	48	16	64
		Bachelor	7	28	1	4
		Total	25	100	25	100
4.	Marital Status	Unmarried	14	56	14	56
		Married	11	44	11	44
		Total	25	100	25	100
5.	Years of experience in NICU	Less than 5	20	80	14	56
		5 – less than 10	4	16	8	32
		10 – less than 15	0	0	1	4
		15 and more	1	4	4	8
		Total	25	100	25	100
6.	Participation in training course	None	23	92	24	96
		Inside country	2	8	1	4
		Outside country	0	0	0	0
		Total	25	100	25	100

Table 1. *Distribution of the Study and Control Group Sample by their Demographic Characteristic*

"No: Number, f: Frequency, %: Percentage"

According to Table (1) analysis, the average age of nurses in the study group is 26.56 ± 6.6 years, while that of nurses in the control group is 30.48 ± 10.4 years. Of these, 84% of study group nurses and 64% of control group nurses identify as being in the "20-less than 30 years" age category. As indicated by 88% of nurses in the study group and 88% of nurses in the control group, the term "sex of nurses" refers to females. When referring to nursing qualifications, the majority of nurses in both the study (48%) and control (64%) groups cite a nursing diploma. According to "marital status", 44% of nurses in each group are married, while 56% of nurses remain single. Regarding training courses, just one nurse in the control group (4%) and two nurses in the study group (8%) participated in training programs within the nation.

List	Risk Factors of Sudden Infant Death Syndrome	Study Group (N=25)						Control Group (N=25)					
		Pre-test		Post-test I		Post-test II		Pre-test		Post-test I		Post-test II	
		M	Eval .	M	Eval .	M	Eval .	M	Eval .	M	Eval .	M	Eval .
1	It is possible to reduce the risk of sudden infant death syndrome	.48	Fair	.96	Good	.80	Good	.56	Fair	.60	Fair	.60	Fair
2	Males are more likely to develop sudden infant death syndrome than females	.32	Poor	.72	Good	.60	Good	.52	Fair	.28	Poor	.40	Fair
3	A premature baby is more likely to have sudden infant death syndrome	.32	Poor	.96	Good	.76	Good	.48	Fair	.52	Fair	.44	Fair
4	Low birth weight is a physical factor	.44	Fair	.80	Good	.64	Good	.36	Fair	.24	Poor	.44	Fair

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	associated with sudden infant death syndrome												
5	Low Apgar scores are an infant risk factor that increases the incidence of sudden infant death syndrome	.36	Fair	.96	Good	.68	Good	.36	Fair	.24	Poor	.24	Poor
6	Infant Sleeping on the stomach or side is an environmental factor that increases the risk of sudden infant death syndrome	.32	Poor	.72	Good	.72	Good	.28	Fair	.28	Poor	.28	Poor
7	The age of the mother, which is less than 20 years, is one of the risk factors related to the mother for the occurrence of sudden infant death syndrome	.36	Fair	.80	Good	.80	Good	.40	Fair	.40	Fair	.40	Fair
8	insufficient antenatal care is a maternal risk factor for sudden infant death syndrome	.52	Fair	.80	Good	.80	Good	.56	Fair	.56	Fair	.48	Fair
9	Mothers use of opioids, Sedating medication, and illicit drug increases the risk of sudden infant death syndrome	.44	Fair	.80	Good	.76	Good	.44	Fair	.44	Fair	.44	Fair
10	Exposure to cigarette smoke during pregnancy or after birth increases the risk of sudden infant death syndrome	.44	Fair	.84	Good	.64	Good	.44	Fair	.48	Fair	.44	Fair
Total average		.40	Fair	.84	Good	.72	Good	.44	Fair	.40	Fair	.31	Poor

Table 2. *Assessment of Nurses' Knowledge about "Risk Factors of Sudden Infant Death Syndrome among Study and Control Group*"

This table presents the assessment of nurses' knowledge about risk factors of sudden infant death syndrome; the

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results in the study group demonstrate that nurses show a fair level of knowledge during pretest (total average= .40) while they demonstrate good level of knowledge during the posttest I (total average= .84) and posttest II (total average= .72).

The nurses in the control group demonstrate a fair level of knowledge during pretest (total average= .44) and posttest I (total average=0.40) and posttest II (total average=0.31).

Levels of know ledge	Study Group												Control Group											
	Pre-test				Post-test I				Post-test II				Pre-test				Post-test I				Post-test II			
	f	%	M	S.D	f	%	M	S.D	f	%	M	S.D	f	%	M	S.D	f	%	M	S.D	f	%	M	S.D
Poor	8	32	4.00	2.082	0	0	6.68	.627	1	4	7.20	1.658	9	36	3.44	1.758	8	32	4.04	1.399	18	72	2.72	1.061
Fair	15	60			6	24			9	36			14	56			16	64			7	28		
Good	2	8			19	76			15	60			2	8			1	4			0	0		
Total	25	100			25	100			25	100			25	100			25	100			25	100		

Table 3. *Overall Assessment of Nurses' Knowledge about Risk Factors of Sudden Infant Death Syndrome among Study and Control Group*

" *f: Frequency, %: Percentage, M: Mean of total score, SD Standard deviation of total score* "

Poor= 0 – 3.33, Fair= 3.34 – 6.66, Good= 6.67 – 10

This table shows that nurses in the study group show a fair level of knowledge during the pretest (60%) while they demonstrate a good level of knowledge during the posttest I (76%) and posttest II (60%).

The nurses in the control group demonstrate a fair level of knowledge during the pretest (52%), and posttest I (64%), while demonstrate a poor during posttest II (72%).

Descriptive		Within-Subjects Effect							
Knowledge	Mean (S.D)	Source		Type III Sum of Squares	df	Mean Square	F	P-value	Sig.	Partial Eta Squared
Pretest Posttest I Posttest II	11.80 (5.809)27.48 (3.151) 23.28 (3.995)	Time	Sphericity Assumed	3294.107	2	1647.053	120.904	.000	H.S	.834
			Greenhouse-Geisser	3294.107	1.438	2290.005	120.904	.000	H.S	.834
			Huynh-Feldt	3294.107	1.505	2188.345	120.904	.000	H.S	.834
			Lower-bound	3294.107	1.000	3294.107	120.904	.000	H.S	.834
		Error(Time)	Sphericity Assumed	653.893	48	13.623				
			Greenhouse-Geisser	653.893	34.523	18.941				
			Huynh-Feldt	653.893	36.127	18.100				
			Lower-bound	653.893	24.000	27.246				

Table 4. *Effectiveness of Educational Program on Nurses' Knowledge Regarding Prevention for Sudden Infant Death Syndrome in the Study Group (N=25)*

"*S. D: Standard Deviation, df: Degree of Freedom, f: F-statistics, P-value: probability value, Sig: Significance, H.S: High Significant*"

"This table exhibits that analysis of RM-ANOVA test indicates that educational program was highly effective on nurses' knowledge among the study group evidenced by high significance associated with "Greenhouse-Geisser" correction at p-value=0.000 and the large Eta squared that indicate large size effect (.834). It is clear out of

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Academia Open
Vol 9 No 2 (2024): December
DOI: 10.21070/acopen.9.2024.8942 . Article type: (Clinical Research)

descriptive data the noticeable increasing of mean score on nurses' knowledge during posttest I and II that indicate the effectiveness of the educational program".

Descriptive		Within-Subjects Effect								
Knowledge	Mean (S.D)	Source		Type III Sum of Squares	df	Mean Square	F	P-value	Sig.	Partial Eta Squared
Pretest Posttest I Posttest II	12.64 (4.091)12.44 (3.927) 12.32 (2.897)	Time	Sphericity Assumed	1.307	2	.653	.167	.846	H.S	.007
			Greenhouse-Geisser	1.307	1.571	.832	.167	.795	H.S	.007
			Huynh-Feldt	1.307	1.662	.786	.167	.807	H.S	.007
			Lower-bound	1.307	1.000	1.307	.167	.686	H.S	.007
		Error(Time)	Sphericity Assumed	187.360	48	3.903				
			Greenhouse-Geisser	187.360	37.713	4.968				
			Huynh-Feldt	187.360	39.896	4.696				
			Lower-bound	187.360	24.000	7.807				

Table 5. *Effectiveness of Educational Program on Nurses' Knowledge Regarding Prevention for Sudden Infant Death Syndrome in the Control Group (N=25)*

"*S.D: Standard Deviation, df: Degree of Freedom, f: F-statistics, P-value: probability value, Sig: Significance, H.S: High Significant*"

This table reveals that there is no significance has been associated with "Greenhouse-Geisser" correction and the Eta squared indicates small size effect (.007). The descriptive analysis shows no clear differences in mean score of nurses' knowledge in the control group during pretest, posttest I, and II.

B. Discussion

Table 1 shows that in both groups, the majority of nurses are female (88%). The age range of 20–<30 comprised the majority of participants. This investigation is similar to Elwasefy and colleagues' who conducted a study regarding nurses' awareness of and behavior related to sudden infant death syndrome in the NICU[12].

The research found that 56% of nurses in both categories were unmarried, which is a larger percentage than the average of participants who were married. This finding conflicts with a Hanan analysis [13].

According to a survey, the majority of nursing graduates held a diploma. This finding contradicts a study conducted by Mahmoud & Shawq in Mosul, which found that most nurses have bachelor degrees[14]. Participants' attendance in the NICU ranged from a maximum of one to five years in all groups. The current findings, supported by [15].

The majority of the attendees in the training session did not have training courses. This outcome is consistent with research [16], [17], [18].

According to the findings of the study group's assessment of nurses' knowledge on "Concepts of risk factors for sudden infant death syndrome," nurses demonstrate a fair degree of knowledge during the pre-test period and a good level of knowledge during post-tests I and II. During the pretest, post-test I, and post-test II, the nurses in the control group demonstrated a fair level of knowledge. This conclusion is corroborated by [19], [20], [21]. Also, this result was confirmed by [12], [22] , who reported a lack of nurses knowledge about sleep environmental factors during the pre-test. Also, another study supported this survey [23], [24], [25], [26], [27]. In contrast to the recent findings by [28], who reported that most nurses were able to recognize risk factors associated with SIDS.

Concerning the efficacy of the training program, the data analysis shows that the research group's nurses' knowledge about the risk factors for sudden infant death syndrome increased significantly as a result of the

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program. The descriptive data clearly shows that the educational program's efficacy is demonstrated by the appreciable improvement in the mean score on nurses' knowledge during post-tests I and II. The findings show that the eta squared and the "Greenhouse-Geisser" adjustment, which show a small size effect, are not significant. According to Tables (4, 5), the descriptive data indicates that there were no differences in the control group's mean score on the pretest, post-test I, or post-test II for nurses' knowledge.

Conclusion

The conclusion from this study underscores the importance of targeted educational programs in enhancing nurses' knowledge regarding "Sudden Infant Death Syndrome (SIDS) risk factors". The findings recommended that such interventions can effectively equip nurses with the necessary understanding to identify and mitigate risks associated with SIDS. By improving nurses' knowledge, healthcare institutions can better support parents in implementing safe sleep practices and reducing the occurrence of SIDS. Continued efforts in education and training are essential for promoting infant safety and advancing the quality of care provided by healthcare professionals.

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