Impact of Reinforcement Educational Sessions Regarding Integrated Management of Neonatal and Childhood Illness on Nurses Knowledge in Holy Karbala Governorate

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Abstract

Background: IMNCI is the process of caring for all ill children under 5 years of age that combines preventive, promotive and curative actions for leading causes of child deaths (Zulaikha & Triasih 2018). Training of nurses in management of IMNCI cases will provide the knowledge and skills needed to provide health services to healthy children for follow up and children suffering from range of diseases and case management, refer ill children who need urgent referral, prescribe and administer appropriate treatments and providing child caregivers with information about treatment and follow up visits. Implementation of IMNCI demonstrated progress in the quality of care provided for sick children (Al-Nuaimee & Saleemm, 2019). Objectives: To evaluate the impact of reinforcement educational sessions regarding the integrated management neonatal and childhood illness on nurses knowledge Methodology: A quantitative study (quasi-experimental design) carried out for achieving the objectives of present study, by application of pre-test & post-test approach for both study group and control about nurses working in IMNCI units from 20th September 2020 to 25th April 2022. The study is conducted in the primary health care centers of the four health care sectors in Holy Karbala. Non probability sample (purposive sample) from the total population who meet the criteria of the study during the study interval. A total of (60) nurses selected for the study, (30) participant for study group and (30) for control group. Results: The mean age of study group was 33.5 ± 8.1 years and that of control was 32.8 ± 8.8 years, while males were dominant in study group and controls represented 63.3% and 70%, respectively. Vast majority of the participants, 90%, in the study group and 80% of controls were married. In regard educational achievement (66.7%) and (76.7%) of (study group and control) had achieved nursing institute level of education. Comparison of mean knowledge score of study group and controls for all domains revealed no significant difference in mean scores before education program pre-test between both groups, (P>0.05), a highly significant differences in means score at post-test (1) and post-test (2), at (P<0.001). Within each group, it had been found that the change in overall knowledge scores increased significantly in the study group where the overall mean score for all domains increased from 2.36 ± 0.19 before education sessions to 2.90 ± 0.09 at post-test (1) and almost maintained to 2.87 at post-test (2), with a mean difference of 0.51 and a percentage change of 21.8%, the change was highly significant, (P<0.001). Conclusion: Significant improvement appear clearly among the study group member through the result of their pre-test and post-test, which explain the impact of the educational sessions content on the nurse's knowledge.

Keywords: Impact, Reinforcement, IMNCI, Knowledge

1. Introduction

Every year, more than 7.5 million children under the age of five die throughout the world. The majority of these deaths occur in low- and middle-income countries where the combination of common diseases (such as neonatal sepsis, measles, diarrhea, and pneumonia) results in mortality (Liu *et al.*, 2016). By 1995, the United Nations International Children's Emergency Fund (UNICEF) and (WHO) aimed to reduce the mortality rate. So, they cooperatively launched a global strategy for IMCI to end preventable child deaths. Poor health outcomes are caused by a combination of poor nutritional status, insufficient health infrastructure, and poverty. The projected yearly number of mortalities among children aged 5 years fell by about a third since the 1970s. This decline, on the other hand, is inconsistent. Furthermore, the rates of childhood mortality are rising in several nations. More than 50 nations had childhood death rates of more than 100 per 1000 live births in 1998 (WHO, 2013).

In Iraq, 2019 top four causes of deaths for under 5 years are respiratory & cardiovascular disorders specific to the perinatal period, congenital malformations, Influenza and pneumonia, and other bacterial diseases which represent (47.69%) percent of deaths (MoH, 2019).

Recent research has shown that the IMNCI protocol is beneficial at raising the standard of nursing care provided to children under the age of five. Over the course of two years, a review of the IMNCI strategy for more than twelve countries indicated the training of nurses improved the quality of treatment, reduced under-five mortality about 13%, as well as increased

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utilization of government health facilities over its two years implementation (Rakha et al., 2013).

The development of the IMCI strategy was based on three main components, improving the performance of health care providers, improve the health system and strengthening family and community practices (Carai et al., 2019).

Training of nurses in management of IMNCI cases will provide the knowledge and skills needed to provide health services to healthy children for follow up and children suffering from range of diseases and case management, refer ill children who need urgent referral, prescribe and administer appropriate treatments and providing child caregivers with information about treatment and follow up visits. Implementation of IMNCI demonstrated progress in the quality of care provided for under 5 years children (Al-Nuaimee & Saleemm, 2019).

Developing countries suffer from more than 12 million child death before they reach the age of five year, the majority of them die in their first year. Seven out of ten of these deaths are caused by one of five diseases: diarrhoea, acute respiratory infections (including pneumonia), malnutrition, malaria and management of critically ill children are among the illnesses that are managed from the time a child is one week old to five years old. Based on analyses conducted in1996, according to the global burden of illness, these disorders are expected to continue to be significant contributors to under-five mortality by 2020, unless considerable further efforts are undertaken to reduce these causes (Adekanye & Odetola, 2014).

The basic IMNCI in-service training is an 11-day course for health professionals working in first-level health institutions such as hospital and health center outpatient services, health posts, dispensaries, and clinics. The case management training materials must be updated to comply with national IMNCI requirements (WHO, 2013).

Objectives of the Study are

1. To assess the nurse's knowledge regarding the integrated management of neonatal and childhood illness as pre-test.
2. To construct and apply a reinforcement education session for the nurses regarding the integrated management of neonatal and childhood illness.
3. To determine the impact of the reinforcement educational sessions on nurses' knowledge.

2. Methodology

Quazi-experimental study designed and carried out for achieving the objectives of present study, by application of pre-test and post-test approach for both study and control group about nurses working in IMNCI units from 20th September 2020 to 25th April 2022. The study is conducted in the primary health care centers related to the four health care sectors in Holy Karbala health department and the department of public health in Holy Karbala. Non probability sample (purposive sample) from the total population who meet the criteria of the study during the study interval. A total of (60) nurses selected for the study, (30) participant selected for study group and (30) were selected for control group. Specific questionnaire prepared to collect the data by interview method. After an intensive review of literatures, assessment needs of the study the researcher constructed the instrument which consists of (two) components and total of (33) items.

Part I: Socio-demographic and personal characteristics

This part includes demographic data and personal characteristics which was comprised of (9) items (age, gender, marital status, educational achievement, residency, years of experience in IMNCI, courses in IMNCI, duration of courses in IMNCI, and years of employment).

Part II: Assessment of the nurse's knowledge regarding IMNCI domains

This part is for assessing the nurse's knowledge regarding IMNCI before and after the implementation the sessions, which composed of (24) items divided into (4) subdomains (history taking, classification of cases, nutrition and feeding and finally counseling and advice). The questions cover the main domains of the educational sessions regarding knowledge.

Data Collection

Self-administration approach used to answer the instrument to collect the data for the period 23 January 2021. The reinforcement educational sessions implemented and data collection conducted in the period (23 January 2022 to 31 March 2022) and required (5) lectures for 3 hours per day to implement. The pre-test data collection conducted before beginning the implementation of the sessions, the post-test (1) data collection applied after implementation the education sessions directly. The post-test (2) data collected after one month of the post-test (1) date collection. The nurses participated after taking their agreement, the nurses needed (25- 30) minutes to complete all items of questionnaire. All participant of study (60) is exposed to pre-test. The educational sessions given to all study group (30) nurses who work in IMNCI units.

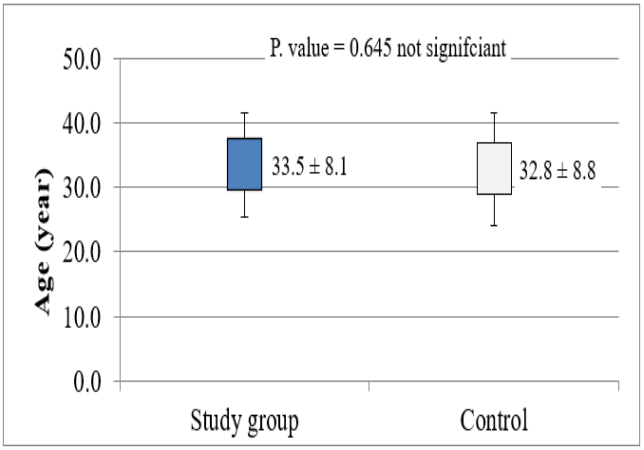

Figure 1: Comparison of the studied groups according to age

Table 1: Baseline demographic characteristics of the studied groups						
Variable		Study group (n=30)		Control (n=30)		P. value
		No.	%	No.	%	
Gender	Female	19	63.3	21	70.0	0.534 ns
	Male	11	36.7	9	30.0	
Marital Status	Married	27	90.0	24	80.0	0.397 ns
	Single	3	10.0	4	13.3	
	Widowed	0	0.0	2	6.7	
Residency	Urban	18	60.0	15	50.0	0.604 ns
	Rural	12	40.0	15	50.0	
Educational Achievement	Nursing Secondary School	8	26.7	6	20.0	0.657 ns
	Nursing Institute	20	66.7	23	76.7	
	Nursing College	2	6.7	1	3.3	
ns: no significant difference						

A total of (30) participants were enrolled in the education program of the study in addition to (30) participants who did not participate in the program as control group. Both groups were almost matched for their baseline demographic characteristics. Males were dominant in study group and controls represented 63.3% and 70%, respectively. Vast majority of the participants, 90%, in the study group and 80% of controls were married. In the study group, 60% of urban residency, 26.7% had nursing secondary school level, 66.7% had achieved nursing institute level of education, the corresponding proportions of these levels in control group were 20%, 76.7% and 3.3%, respectively (P. value > 0.05) (Table 1).

The mean age of study group was 33.5 ± 8.1 years and that of control was 32.8 ± 8.8 years (Figure1).

Table 2: Number of participation and duration of IMCI courses of the studied groups						
Variable		Study group (n=30)		Control (n=30)		P. value
		No.	%	No.	%	
Number of participations in IMCI courses	None	17	56.7	15	50.0	0.504 ns
	One course	7	23.3	11	36.7	
	Two or more	6	20.0	4	13.3	
Duration of Courses in IMCI	None	17	56.7	15	50.0	0.795 ns
	7 days	13	43.3	15	50.0	
	8 days and more	0	0.0	0	0.0	
Years of Employment	1-3	0	0.0	2	6.7	0.631 ns
	4-6	11	36.7	10	33.3	
	7 and more	19	63.3	18	60.0	

In the study group, 17 participants (56.7%), did not participate previously in IMCI courses. Among controls, 15 participants (50%) did not participate in IMCI training courses. The duration of all IMCI training courses was 7 days, with no significant difference between both groups in number or duration of IMCI training courses, (P. value > 0.05) (Table 2).

Table 3: Comparison of overall mean knowledge scores for all domains of study group and controls before and after education program					
Overall for all Domains	Study group		Control		P. value (student's t test)
	Mean	SD	Mean	SD	
Pretest	2.36	0.19	2.40	0.11	0.285 ns
Posttest 1	2.90	0.09	2.42	0.11	<0.001 sig
Posttest 2	2.87	0.10	2.44	0.11	<0.001 sig
Mean Difference	0.51	0.02	0.04	0.001	<0.001 sig
Percentage change	21.8%	9.1%	1.6%	1.1%	
P. value within group (repeated measures ANOVA)	< 0.001 sig		0.166 ns		

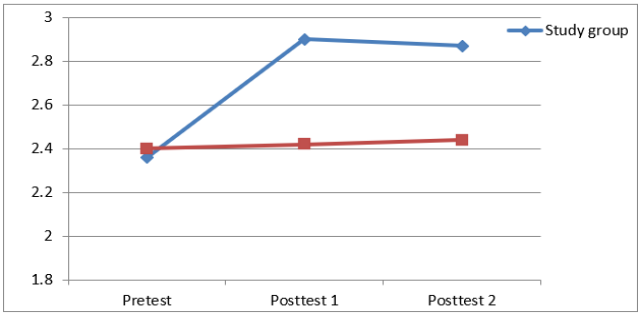

Figure 2: Line-Marker graph comparing the change in overall mean knowledge scores of study group and controls

Comparison of mean knowledge score of controls and study group for all domains revealed no significant difference in mean scores before education sessions (pretest) between both groups, (P>0.05), a highly significant differences in means score at post-test (1) and posttest (2), at (P<0.001). Within each group, it had been found that the change in overall knowledge scores increased significantly in the study group where the overall mean score for all domains increased from 2.36 ± 0.19 before education sessions to 2.90 ± 0.09 at post-test (1) and almost maintained to 2.87 at post-

test (2), with a mean difference of 0.51 and a percentage change of 21.8%, the change was highly significant, (P<0.001). In control group, the change was statistically insignificant with percentage change 1.6%, (P>0.05). The comparisons are summarized in (Tables 3 & Figure 2).

3. Discussion

The results of the present study showed that the majority of the study group and control group 19 (63.3%), 21(70%) respectively are female. Nurses working in IMCI units are dealing with children less than 5 which are brought by their mothers so the presenting of female nurses making the communication and the child management more easily, also the community's view for nursing profession differed from the previous one, and the profession became more popular for both genders, this result something popular with a study done by (Muhaisen *et al.*, 2021) in Babylon city which revealed that majority of the study group was female, while (Seid & Sendo, 2018) found that 131(70.8%) participants were male. In regard of marital status majority of both study group and control group were married this result is something popular as most nurses are employed and earning some enough budget so they have the opportunity to marry, while regarding residency the finding of this study found that majority of the study group (60.0%) were urban residence this results comes along with (Hussein & Farhood, 2019) which found that most prevalence of the study sample in Babylon were married (82%), while (Muhaisen *et al.*, 2021) found that most of the participants (96.2%) in Babylon were urban residency (Table 1).

Regarding educational achievement the majority of the study sample (66.7%) where had nursing institute, the distribution of nurses in hospitals and PHCCs is depending on the allocation and the shortage of MoH which permit only the nurses who have diploma degree in nursing to work in such institutions. This result supported by (Abd Al-Wahid & Nagi, 2015) who found that the highest percentage of the study sample was technician institute graduate and represented (58.6%) of the study sample.

The mean age (mean ± SD) group of the study sample was (33.5 ± 8.1) and the control group (32.8 ± 8.8), The IMNCI units are vital units which need to be operated by young nurses, this period of age is considered the period of giving because the person is active and energetic, as well as, earned enough experience that helps him to accomplish his tasks in a better way. To ensure the sample homogeneity investigator tried to select a similar sample characteristic as well as these results agreed with (Al-Samarrai & Jadoo, 2018) results who indicated that the mean age of the participants was (mean + SD) 33.18 + 5.82. (Figure 1).

Concerning years of experience, most of the IMNCI nurses 19 (63.3%) have 7 years, while 11 (36.7%) have experience (4-6) years of experience in employment, the years of experience are very important in the employee's practical life, as he acquires experience from the field of work and from his colleagues who have experience, as well as training courses during the service which increases the level of knowledge and practices, this results confirmed by a study conducted by (Muhaisen *et al.*, 2021) that found that most of the study sample (71.5%) have experience more than 8 years in employment as showed in (Table 2).

Related to the overall knowledge scores of study group for all domains before education sessions (pretest) revealed a highly significant differences in means score at post-test (1) and post-test (2), at (P<0.001). Within each group, it had been found that the improvement in overall knowledge scores increased significantly in the study group where the overall mean score for all domains increased from (2.36 ± 0.19) before implementation of reinforcement education sessions to (2.90 ± 0.09) at posttest (1) and almost maintained to 2.87 at posttest (2), with a mean difference of (0.51) and a percentage change of (21.8%), the change was highly significant, (P<0.001). This improvement in nurses' knowledge regarding history taking, cases classification, nutrition and feeding, and counseling and advice indicates the achievement of the essential part of the present study. (Tables 3) illustrated the results of present study regarding overall knowledge, this result was similar to study done by (Sharhan & Ma'ala, 2021) who confirmed that there is highly significant differences between study group and control group at post-test (1) and post-test (2) for overall total knowledge of health care providers concerning integrated management of neonatal and childhood illness at (p value < 0.01) after implementation the education program.

4. Conclusion

Significant improvement appears clearly among the study group member through the result of their pre-test and post-test, which explain the impact of the educational sessions content on the nurse's knowledge

5. Reccommendations

Increase training courses and follow up visits after training for nurses who work in IMNCI units

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