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Evaluation of a Booklet Information on Nurses' Knowledge Regarding Meningitis among Children at Paediatric Wards in Mosul Hospitals

Mohammed Ahmed Sultan Al-Wily*, Luay A. M. Al-Waly

College of Nursing, University of Mosul, Mosul, 41001 Iraq

**Corresponding Author's Email: mohammed.ahmed@uomosul.edu.iq*

ABSTRACT

Background: One of the sickness types, which attacks the brain and often causes a high death toll or morbidity level, is meningitis with its high lethality rate and long-term complications. The aim of the study remained to assess the efficacy of the booklet information programme on the level of knowledge of children with meningitis admitted to paediatric wards within Mosul Hospitals by nurses. **Methods:** A pre-experimental design for the study, namely a one-group design, was implemented at the paediatric wards of Mosul hospitals from December 2023 to July 2024. The sample consisted of 64 nurses selected through a non-probability purposive sampling method from five hospitals in Mosul. The questionnaire comprised two portions: demographic information and nurses' knowledge level about meningitis in children, consisting of five distinct categories. The pilot study was conducted utilising Cronbach's Alpha (0.807) as a measure of dependability, employing SPSS version 26. The analysis of the data and evaluation involve statistical descriptive (including frequencies and percentages), statistical inferential, ANOVA test, *t*-test, and determination of significance level. **Results:** The majority 46.9% (30) of the sample consists of individuals aged between 20 and 29 years, with 78.1% (50) being female. 43.8% (28 individuals) in the institute stage of educational level and 50.0% (32 individuals) with 1-5 years of overall service. A total of 59.4% (38) lack courses' training pertaining to it. Out of the total number of nurses, 68.8% (44) had an inadequate level of knowledge in the pre-test. However, in the post-test, 59.4% (38) of them achieved an outstanding level of knowledge. Extremely significant relationships exist between the pre-test and post-test outcomes for all components of nurses' knowledge level concerning meningitis in children with a p-value of ≤ 0.05. **Conclusion:** The effectiveness of the booklet course of training is demonstrated by the strong relationship between the knowledge level of nurses before and after the programme, specifically in relation to meningitis in youngsters.

Keywords: Booklet Information; Children; Evaluation; Meningitis; Nurses Knowledge

INTRODUCTION

Meningitis is life-threatening and an illness of the membranes covering the brain and the spine. The condition can have such dismal consequences that prove to be fast and stubborn, particularly in childhood, where they may cause permanent cerebral damage and even death (Ahmad *et al*., 2025; Farooq *et al*., 2024; WHO, 2023). It was estimated that the world has about 500,000 cases of new meningitis cases a year, with the children between birth and two years of age being most susceptible, particularly during the first few weeks of life and between three and eight months. Such an increased risk can be mostly attributed to the fact that the immune system and the overall systemic vulnerability lack maturity during the early infancy period (Wahdan *et al*., 2024; Singh, 2024a).

Meningitis is still over-represented in young children. The international mortality ranges between 5 and 10%, and about 20% of survivors develop extreme neurological problems in the long term (Mahmoud *et al*., 2025; Patel *et al*., 2024). One to two million incidences of meningitis have been noted every year and about 180,000 children aged between 1 and 59 months die annually. Remarkably, in developed nations, it is reported that the levels of incidence are approximately 1.5 out of 100,000 children, compared to the significantly higher levels of incidence

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in developing countries of up to 20 cases out of 100,000 children (Ahmed *et al*., 2024; Tang *et al*., 2025). The likelihood of attaining meningitis in Egypt is estimated at 58%, and in Minia, at a rate of 19% (Mahmoud *et al*., 2025).

It causes meningitis that is brought about by a variety of pathogens such as bacteria, viruses, and fungi. The symptoms that commonly accompany this condition are neck stiffness, fever, photophobia, disorientation, headache and vomiting. More specifically, bacterial meningitis may lead to such severe consequences as brain impairment, deafness, and cognitive impairments (Singh, 2024b; Mohanty *et al*., 2024). The diagnosis relies mainly on invasive procedures, with lumbar puncture as the gold standard approach. Through this process, one can obtain cerebrospinal fluid, on which Gram stains and biochemical tests can be conducted that will include the identification of causative organisms like meningococcus and pneumococci (Das *et al*., 2025; Ciftci *et al*., 2025). Invasive methods of diagnosing include reaching the internal body compartments that are sometimes vital to the identification and specific treatment (Khan *et al*., 2024).

Meningitis complications are not confined to the central nervous system because they also involve myocarditis, shock, status epilepticus, subdural effusion or empyema, ocular palsies, hydrocephalus, neurological deficits, ventriculitis, hearing loss, speech impairments, obesity, and precocious puberty (Howard *et al.*, 2024; Patel *et al*., 2024). Since nurses at triage points are required to refer and intervene in the cases, it is important that they have full information on these clinical features (Ahmed *et al*., 2024).

The nursing care quality is the main element of existence and recovery of children with meningitis. To control the situation with paediatric meningitis adequately, nurses need to get comprehensive knowledge and practical skills on how to manage it, including awareness of measures to mitigate emergencies in regard to surgical complications and severe care requirements (Balint *et al*., 2024; Khan *et al*., 2024). The significance of continuous nurse trainings and education is thus far emphasised to sustain high quality of paediatrics (Wang *et al*., 2024).

Those gaps create an issue between nurses, as they lack considerable knowledge of meningitis recognition, treatment, and prevention, which results in delayed diagnosis and a decline in the quality of care. Although their use in healthcare paediatrics has not been widely incorporated to disseminate learning information among nurses through the use of things like booklets, the evidence in different corners of the world has shown their effectiveness in advancing knowledge of nurses. The research is the first attempt to assess a culturally adjusted, systematic education booklet that facilitates improving the knowledge among nurses regarding meningitis and their context of continuing education regarding healthcare reconstruction in the setting of post-conflict work (Ahmed *et al*., 2024; Ahmed, 2024).

Conventional pedagogical solutions (in-service training, workshops, and online courses) have serious impediments caused by the destruction of the infrastructure, shortage of personnel, and absence of access to technology. Besides, the overworking limits accessibility of nurses to formal training. In that regard, the use of educational booklets provides a less rigid, cheaper method of education that can be applied by nurses who do not have to rely on digital materials and predetermined schedules. With the reconstruction of the healthcare system, booklets are a scalable and sustainable solution to overcome barriers to education and paediatric nursing care of meningitis and other life-threatening diseases (Howard *et al*., 2024; Patel *et al*., 2024; Khan *et al*., 2024).

There are several educational approaches that can be deployed to increase the knowledge of nurses, including in-service training, workshops, and online training, but these are highly limited by the effect of the infrastructure destruction, lack of staff, and lack of tech accessibility in Mosul. The additional workload also limits the involvement of the nurses in the formal training. In this regard, booklets offer a convenient low-cost method of offering a flexible and independent mechanism that nurses can employ without necessarily involving technology or a set schedule. Since Mosul is still rebuilding its healthcare, booklets are one such method in that they are a reusable resource that can be scaled to cover the current barriers and provide the necessary help and support in terms of providing paediatric nursing care to meningitis and other critical diseases.

The recent studies propose that a nurse will take the most important role in monitoring and treatment of meningitis due to their constant close supervision of children. This kind of surveillance plays a pivotal role in initiating an action and prognosis of outcome. The evidence also shows that the engagement and adherence of patients to the treatment procedures with the involvement of nurses increase the therapeutic efficiency, early

diagnoses are made, and a strategy to avoid the spread of infection is implemented. Therefore, continuous education programmes that seek to increase the knowledge and enhance the facility of individuals to utilise it in the diagnosis and management of meningitis must be laid down to nurses (Ahmed, 2024). This paper is left to assess the efficacy of the booklet information programme on the level of knowledge of children with meningitis admitted to paediatric wards within Mosul Hospitals by nurses.

Objectives

1. To measure nurses' level knowledge regarding meningitis among children at paediatric wards in Mosul Hospitals.

2. To evaluate efficacy of a program booklet information for nurses' level knowledge concerning meningitis among children at paediatric wards in Mosul Hospitals.

METHODOLOGY

Design

A pre-experimental design study, involving a single study group, was conducted at the paediatric wards of Mosul hospitals that occurred from December 2023 to July 2024.

Sample

The present study adopted a non-probability purposive sampling. The sample included 64 paediatric care nurses of the paediatric wards in five of Mosul's teaching hospitals: Ibn Sina, Ibn Al-Atheer, Al-Kanssa'a, Al-Salam and General Mosul.

Inclusion Criteria

The study included willing nurses of the paediatric ward during the night duty and in the morning shifts. Also, the respondents who accepted to participate in the study stated their readiness to respond to the survey questionnaires. These are the male and female nurses.

Exclusion Criteria

Nurses who were not working in paediatric wards were excluded from the study. In addition, those who did not provide consent or expressed unwillingness to participate in the survey were also excluded.

Study Tool

An information booklet with a questionnaire was developed based on four authoritative standard sources, including the Centres for Disease Control and Prevention (CDC, 2023), World Health Organisation (2023), and the book by Marcdante and Kliegman (2019), and given to nurses for evaluating the effect of an information booklet programme on nurses' level of knowledge concerning meningitis. The questionnaire comprised of two different parts: The initial section comprises demographic details pertaining to the nursing staff's sample, encompassing information that includes age, service, gender, course of training, educational degree, and source of reading. The second component entails a questionnaire that is relevant to the level of knowledge about children's meningitis of the nurses. The questionnaire has five elements. Every section will comprise 5 multiple-choice questions from the subject of knowledge of the nurses. The first segment will focus specifically on the knowledge of the nurses towards meningitis in children as a whole. The second element is focused on the investigation of how the nurses know of the signs and symptoms of meningitis among children. The last segment focuses on analysing the aetiology awareness of meningitis of children by the nurses. The fourth aspect is how nurses understand the management of meningitis in children, and the fifth part concerns how nurses comprehend the nursing care to be given to the children with meningitis.

Validity

The booklet information programme and questionnaire validity remained recognised by an experts panel to evaluate content validity by 15 experts in different medical and nursing fields inside and outside Iraq. The specialists were authorised to assess the text's lucidity, pertinence, and adequacy.

Reliability (Pilot Study)

Initial research leading to the start of the applied phase was performed in advance. It comprised ten (10) nurses who were chosen intentionally out of this group, were sampled in the Ibn Al-Atheer teaching hospitals and were not part of the original sample study to be used in measuring the internal consistency of the questionnaire. The factors used in studying the nurses were through the use of Cronbach's alpha measurement, where the results were obtained as (0.807) using the SPSS 26 version.

Data Collection

The information booklet was practical and aimed at all hospitals selected in the study during the total period from 25th February 2024 till 28th March 2024 by three steps:

Step one: The pre-test remained managed by all nurses among all participating hospitals in the study. Individually nurses took 40–60 minutes toward response and completed it by using the MCQ questions that were direct answers by the nurses, taken four days of the period 25th-28th February, 2024.

Step two: The application of the booklet information programme by giving booklet information to every nurse that participates in the study after doing the pre-test, then giving the booklet about the study that depends on self-learning, and also the period of self-learning that was from 3rd t o 24th March 2024.

Step three: The post-test, was left to the control of all nurses. Individually, each teacher consumed 40-60 minutes to move towards a response and completes it, to examine the Nurses level of Knowledge, through the MCQ questions which was the direct answer and that was administered during the supervision of the researcher, the post-test was conducted on four days later the period.

Data Analysis

The data collected in the present study remained analysed by statistical Package software for Sciences of Social (SPSS), version 26. Analysis of data was conducted by applying numerous statistical methods, among them being statistics descriptive, like frequencies, mean, percentages, as well as the standard deviation. Inferential statistical analysis, like the ANOVA, *t*-test and determination of level of significance, were also part of the analysis.

Ethical Considerations

The research obtained ethical clearance from the Collegiate Committee for Medical Research Ethics, University of Mosul, Iraq with reference number CCMRE-Nu-24-53 on 9th January, 2024.

RESULTS

Table 1: Demographic Features of the Sample

Demographic Characteristics		Frequency	%
Age	(20-29)	**30**	**46.9**
	(30-39)	26	40.6
	(40-49)	8	12.5
Sex	Male	14	21.9
	Female	**50**	**78.1**
Education Level	Junior Stage	4	6.3
	Institute Stage	23	35.9
	Graduate Stage	**34**	**53.1**
	Master Stage	3	4.7
General Service	(1-5)	**32**	**50.0**
	(6-10)	18	28.1
	(11-15)	14	21.9
Service in Current Ward	(1-5)	**36**	**56.3**
	(6-10)	22	34.4
	(11-15)	6	9.4
Course of Training	No	**50**	**78.1**
	Yes	14	21.9
Source of Reading	No	31	48.4
	Yes	**33**	**51.6**
Total		**64**	**100.0**

The study included a sample of 64 paediatric care nurses. The demographic details indicate that 46.9% (30) of

the participants are between the ages of 20 and 29, 78.1% (50) of them are female and 43.8% (28) of them were at the institute stage of their educational level. 50.0% (32) of participants had 1-5 general years' service, while 56.3% (36) had 1-5 years of present ward service. A total of 59.4% (38) lack course training pertaining to the subject. Finally, a total of 53.1% (34) of participants did not report having a source of reading (Table 1).

Table 2: Arithmetical Outcome of Nurses' Knowledge Level on Pre-test, Post-test Concerning Meningitis among Children

Nurses' Knowledge	Estimate	Pre-test		Post-test	
		Frequency	%	Frequency	%
Nurses' level Knowledge regarding meningitis among children in general	Fail	19	29.7	0	0.0
	Not Acceptable	21	32.8	10	15.6
	Acceptable	15	23.4	22	34.4
	Good	9	14.1	23	35.9
	Excellent	0	0.0	9	14.1
Signs and symptoms of meningitis among children	Fail	31	48.4	0	0.0
	Not Acceptable	21	32.8	3	4.7
	Acceptable	7	10.9	14	21.9
	Good	5	7.8	22	34.4
	Excellent	0	0.0	25	39.1
Causes of meningitis among children	Fail	20	31.3	0	0.0
	Not Acceptable	40	62.5	0	0.0
	Acceptable	4	6.2	4	6.3
	Good	0	0.0	22	34.4
	Excellent	0	0.0	38	59.3
Management of meningitis among children	Fail	32	50.0	0	0.0
	Not Acceptable	16	25.0	0	0.0
	Acceptable	12	18.8	11	17.2
	Good	4	6.3	22	34.4
	Excellent	0	0.0	31	48.4
Nursing care of meningitis among children	Fail	34	53.1	0	0.0
	Not Acceptable	18	28.1	9	14.1
	Acceptable	8	12.5	10	15.6
	Good	4	6.3	17	26.6
	Excellent	0	0.0	28	43.8
Total		**64**	**100.0**	**64**	**100.0**

The arithmetical findings, as shown in Table 2, indicate that a significant proportion of nurses (68.8%, or 44 individuals) had an inadequate level of knowledge concerning meningitis amongst children during the pre-test. However, post-test, a considerable improvement was observed in post-test, with 59.4% (38 individuals) demonstrating an excellent level of knowledge.

Table 3: Statistical Outcome of Nurses' Total Knowledge Level on Pre-test, Post-test Concerning Meningitis among Children

Nurses' Total Knowledge Level	Pre-test		Post-test	
	Frequency	%	Frequency	%
Fail	6	9.4	0	0.0
Not Acceptable	47	73.4	0	0.0
Acceptable	7	10.9	8	12.5
Good	4	6.3	20	31.3
Excellent	0	0.0	36	56.3
Total	**64**	**100.0**	**64**	**100.0**

Statistical test correlation (paired sample test) compares association amongst level knowledge for nurses regarding meningitis among children before and after a test (Table 3). The pre-test and post-test results of all sections on the knowledge regarding the level of nurses show very significant results, with a p-value of <0.05 regarding children with meningitis.

Table 4: Statistical Analysis Utilising Paired Samples t-Test to Evaluate Nurses' Knowledge Level on Pre-test with Post-test Concerning Meningitis among Children

Nurses' Knowledge Level	Mean	Standard Deviation	*t*-test	Significant at *P* value ≤ 0.05
Children meningitis in general	-2.281	1.362	-13.395	0.000
Signs and symptoms	-1.750	1.392	-10.060	0.000
Children meningitis Causes	-2.328	1.369	-13.603	0.000
Children meningitis Management	-1.422	1.423	-7.992	0.000
Nursing care of children meningitis	-2.031	1.642	-9.894	0.000
Total Nurses' level Knowledge	-2.047	0.881	-18.594	0.000

The correlation statistical *t*-test to evaluate nurses' pre-test with post-test knowledge levels about meningitis in children and pre-test with post-test findings aimed at areas of nurses' level of knowledge regarding meningitis among children reveals significant connections, with a *p*-value of < 0.05 (Table 4).

Table 5: Correlation Arithmetical (Pairwise Comparison) ANOVA for Nurses' Knowledge Level in Pre-test and Post-test Regarding Meningitis among Children

Nurses' Knowledge		Sum of Squares	*df*	Mean Square	*F*	Significant at *P* value ≤ 0.05
General knowledge of children meningitis	Between Groups	40.641	1	40.641	33.113	0.000
	Within Groups	76.094	62	1.227		
	Total	116.734	63			
Signs and symptoms of children meningitis	Between Groups	166.531	1	166.531	189.569	0.000
	Within Groups	110.688	126	0.878		
	Total	277.219	127			
Causes of children meningitis	Between Groups	36.000	1	36.000	46.743	0.000
	Within Groups	47.750	62	0.770		
	Total	83.750	63			
Management of children meningitis	Between Groups	45.563	1	45.563	52.131	0.000
	Within Groups	54.188	62	0.874		
	Total	99.750	63			
Nursing care for children meningitis	Between Groups	132.031	1	132.031	114.067	0.000
	Within Groups	145.844	126	1.157		
	Total	277.875	127			
Total nurses' knowledge	Between Groups	20.250	1	20.250	26.432	0.000
	Within Groups	47.500	62	0.766		
	Total	67.750	63			

Table 5 demonstrates the findings of a one-way ANOVA pairwise comparison to measure the statistical significance of the level of knowledge on meningitis in children before and after educational intervention of nurses. The analysis shows immensely high differences occurring in all the aspects of knowledge, that is, general knowledge, signs and symptoms, causes, management, and care of nursing with the meningitis condition. The *F*-values are 26.432 and 189.569, respectively, and all the *p*-values are 0.000 within the upper limit of the knowledge level of the nurses after intervention. All these results confirm the success of the education programme.

DISCUSSION

The demographic details of the study sample indicate that 46.9% (30) of the participants are between the ages of 20 and 29, and also 78.1% (50) of them are female. and 53.1% (34) of them were at the graduate stage of their educational level. 50.0% (32) of participants had 1-5 general years' service, while 56.3% (36) had 1-5 years of present ward service. A total of 78.1% (50) lack course training pertaining to the subject. Lastly, as shown in Table 1, 51.6% (33) of the respondents' state that they have a source of reading. This finding aligns with the research conducted by Al-Mutairi *et al*. (2025) on paediatric nurses in Saudi Arabia that evaluated 180 participants and found that 44.4% of them were aged 20-29, 79% were women, and 55% were bachelor's and above. As far as the experience is concerned, 53.3% possessed 1 through 5 years of service in general nursing, and 58.9% had the same level of experience in the current units. Notably, 74.5% of them failed to attend any

special training courses on paediatric infectious diseases, whereas only 52.8% of them had accessibility to reading materials that could improve their careers. The uniformity of these studies points to the lack of opportunity on an international scale to ensure constant professional development of a nurse and access to professional literature. This points to the great importance of properly developed educational interventions aimed at ensuring the growth of nursing competence and increasing the effectiveness of care for children with meningitis (Al-Mutairi *et al.*, 2025).

The statistical findings indicate that nurses' level of knowledge on meningitis among children improved from the pre-test to the results of the post-test. In that pre-test, 32.8% (21) of the nurses scored at a level not acceptable, while in the post-test, 35.9% (23) of them achieved a good knowledge level. The nurses' level of knowledge concerning symptoms and signs of meningitis among children was assessed in a pre-test, with 48.4% (31) of them scoring at the level of failure. In the cutting-edge post-test, 39.1% (25) of the nurses scored at an excellent level. A pre-test and a post-test were used to assess the extent of knowledge that the nurses had on the causes of meningitis among children. On the pre-test, 62.5% (40) of them possessed knowledge which was not satisfactory. During the post-test, 59.3% (38) of them demonstrated good knowledge. Pre-test findings indicate that 50.0% (32) of them had a failure knowledge level in managing meningitis amongst children. However, in the cutting-edge post-test, the same percentage of nurses, 48.4% (31), had an excellent level of knowledge. The pre-test revealed that 53.1% (34) of nurses had a failure level of knowledge regarding the nursing management of meningitis in children. In the cutting-edge post-test, 43.8% (28) of nurses demonstrated an excellent level of knowledge, as indicated in Table 2. The results of the research are aligned with the findings of Ahmed and Srour (2023). According to the degree of knowledge, the disparity between the aggregate mark of the knowledge of the active intervention in the pre/post compared with the implementation of the training plan in the instruction of the trained programme was very significant (p-value = 0.000); the random sample of the researched nurses had acquired the sufficient level of the knowledge, whether in the post phase (92%) or in the follow-up Also, the average change in the total score of practices in lumbar puncture between pre, post, and three-month follow-up of pre- and pre-care periods was statistically significant to the extent of $P = 0.000$, respectively, across the study nurses. It produces the impressions of finding that most of the researched nurses have exhibited effective levels of practices (96%) at some point in the post-test stage and later at the follow-up test stage (94%) compared to the pre-test stage (34%). In addition, the mean magnitude of practices relative to the ongoing stage of the lumbar puncture process was deemed very high, as at pre, post, and the three-month follow-up, the $P = 0.000$ median indicated a strong decrease in the research nurses Ahmed and Srour (2023).

The statistical results show that a large percentage of nurses (73.4%, or 47 individuals) were deficient in knowledge on the level of failing in meningitis in children during the pre-test. Nonetheless, there was a significant change, as shown by a post-test where 56.3% of respondents (36 of them) showed an excellent level of knowledge. The results of the same are as in Table 3. Outcomes presented align with research discoveries of undertaken by Hussien *et al*. (2021), which was used to explore the knowledge of medical students and residents about meningitis in a single setting. There were 108 participants who filled out a survey based on questions meant to deal with the symptomatology of meningitis, its transmission, and prevention. 86% of the respondents were considered to have unsatisfactory knowledge, with 14% having satisfactory knowledge. Namely, 78% of them revealed sufficient knowledge of the universal precautions on meningitis, and 22% demonstrated the knowledge deficit in the field. The results of the research imply that a wider range of educational activities that can improve the clinical competence of trainees is required (Hussien *et al*. 2021).

The statistical correlation (paired samples test) examines the relationship correlation among nurses' level of knowledge (before and after) a test concerning meningitis in children. The pre-test with post-test outcomes of all sections for nurses' level knowledge and the pre-test with post-test concerning children with meningitis reveal very significant associations, with a p-value of < 0.05, as indicated in Table 4. Similar results were described by Abed and Al-Wily (2024); the statistical correlation relationships disclose the facts regarding the knowledge of paediatric postural drainage guidelines on the part of the respondents (paired samples t-test). According to their findings, comparisons of the t-test outcome amongst pre-test and post-test mean scores achieved a pairwise correlation coefficient of (-16.503) and a p-value that was statistically considered as 0.000, which implies that there were strongly significant correlations associated with the paired results of pre-test and

post-test results where the *p*-value module was within the distinguished range of 0.000, which is less than 0.05 (Abed & Al-Wily, 2024).

The statistical correlation ANOVA (pairwise comparison) between nurses' pre-test and post-test knowledge levels about meningitis in children and pre-test and post-test findings aimed at areas of nurses' level of knowledge regarding meningitis among children reveal significant connections, with a *p*-value of < 0.05, as indicated in Table 5. The conclusions are consistent with those of a study by Mohamed *et al.* (2025), which indicated that the interventional effect of the knowledge total score of post-intervention nurses compared to the total score of the practice and attitude of post-intervention nurses is positively and statistically significant ($p<0.05$). A weak relationship between the total knowledge score by pre-intervention nurses relative to their ages, educational level, and level of attendance at training courses showed no significance ($p>0.05$). There was, however, a high level of statistical significance and positive correlation between the total scores of the knowledge attained by the nurses with the level of nurse education ($p=0.000$) and post-/follow-up intervention. Along the same lines, the collective data collection over the pre-, post-intervention, and follow-up time points showed a statistically significant correlation of the total and agreement score in the knowledge instrument with years of professional experiences that were taken by the nurses ($p<0.05$) (Mohamed *et al*., 2025).

Limitations

A small number of participants (64) was used as a sample size; this might be interfering with the statistics of the analysis and generalisability of the findings. Geographic Limitation: The study was carried out in an urban region hospital, which was not likely to be analytic of rural areas.

CONCLUSION

This research will be relevant because it will be filling an evident gap of nurses' knowledge on the topic of paediatric meningitis in Mosul, Iraq, which is a post-conflict environment that lacks considerable healthcare facilities. Through the assessment of a culturally relevant educational booklet on meningitis, the study will not only focus on training early diagnosis and treatment of meningitis but also work towards better care and minimisation of complications and death among children.

The outcome of the study makes it possible to conduct further studies in order to determine the effectiveness of the introduction of the booklet in the context of various healthcare roles, regions, and forms. It also demonstrates the possible implication on the long-term professional practice and scalability of the educational tools to the resource-constrained areas. The research sample consisted primarily of females aged between twenty and twenty-nine of a young age who recently completed a degree through an institute and have less than five years of work experience. Additionally, the majority of the participants had not undergone any course of training and had limited access to reading resources concerning meningitis among youngsters.

The nurses working in paediatric wards at Mosul Hospitals lack sufficient and suitable knowledge prior to implementing the booklet information campaign concerning meningitis among children. The effectiveness of the booklet course of training is demonstrated by the strong relationship between the knowledge level of nurses before and after the programme, specifically in relation to meningitis in youngsters.

Recommendation

Presenting teaching sessions and specialised sessions to all nurses at Nineveh hospitals based on the topic of paediatric meningitis, having the aim of increasing their knowledge and skill in managing this illness. It aims at the augmentation of the quantity of nurses holding at least a nursing science undergraduate degree who are also equipped with the skills that they need to serve in paediatric wards of teaching hospitals in Mosul due to their professionalism and skills. The study initiative is aimed at meningitis among children, and it tightly targets the nurses working in the paediatric wards, which improves the knowledge among the future nurses.

Conflict of Interest

The authors declare that they have no conflicting interest.

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