

Effect of Implementing a Reflexology Foot Massage Training Program on Hemodialysis Nurses' Knowledge and Attitudes

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Abstract: one of the available nursing interventions in complementary medicine is reflexology massage which provides an occasion for nurses to care for their patients. This intervention will be a liberality towards resolving some of the adverse psychological and physical symptoms linked with the diseases and its treatment, for all patients undergoing hemodialysis.

Aim: The objective of this study was to identify the Effect of implementing foot reflexology massage training program on hemodialysis nurses' knowledge and attitudes.

Setting: the research was executed at one unit of the hemodialysis units of Alexandria University Hospitals.

Subjects: A convenient sample of thirty dialysis nurse who work at the hospital dialysis unit.

Tools: Three tools were used to gather the necessary data

Tool I: Bio-socio-demographic assessment sheet

Tool II: Nurses' knowledge assessment schedule to obtain baseline data about hemodialysis nurses' knowledge.

Tool III: Complementary, Alternative, and Conventional Medicine Attitudes Scale (CACMAS).

Method: An initial assessment was executed for each nurse utilizing Nurses' knowledge assessment and (CACMAS). A total of thirty hemodialysis nurses were exposed to training program by the researcher which include of two sessions each session about 120 minutes after ending the mourning dialysis session. Discussion, demonstration, re demonstration were utilized by the researcher in training, also the researcher used colored booklet, social media and videos to reinforce the information.

Results: There was a statistically significant difference before and after receiving the training program between nurses' knowledge and attitudes. In general, the higher level of nurses education, and experience years the more realized improvement of their knowledge and attitudes.

Conclusion a reflexology foot massage training should be utilized as a foundation for hemodialysis nurses' clinical care.

Keywords: Attitudes, hemodialysis nurses, knowledge, reflexology foot massage, training program.

I. INTRODUCTION

Reflexology has been developed since ancient Egyptian and Chinese times. The utmost initial scientific images of reflexology massage were discovered in Ankhmahor tomb in Egypt in 2500 B.C^(1,2). Reflexologists faith that all organs and body parts are reflected in small map in the feet. In that massage, the therapist utilizes his fingers to lay pressure on definite reflex centers or points present in the feet and requested to get along with the internal organs, glands and body parts to put back their health and cause an equilibrium in the whole body.

Nowadays, the application of reflexology massage is growing and available in communities and therapy centers. Massaging is defined as the method of touching the body's soft tissues by fingers and hands in order to increase relaxation and decrease the pain in a patient^(2,3). Reflexology is foremost a relaxation technique and can unreel the effects of stress while it assists the body to relax^(4,5). Reflexology softly solicit the body for the sake of better functioning by meliorative venous circulation and lymphatic drainage, stimulation to the nerve pathways, and muscle relaxation⁽⁶⁾. In Denmark and Japan Reflexology has been integrated into the employee health programs of several large organizations saving each company thousand dollars yearly in paid out sick leave advantages. Researches in the U.S. and in others countries in the world point out positive benefits of reflexology for various conditions. In particular, there are several well-designed Researches, done by the National Institutes of Health and the National Cancer Institute that indicate reflexology's troth as an intervention to enhance relaxation, sleep and decrease pain and the reduction of psychological symptoms, such as depression and anxiety. Perhaps the most beneficial results have been in the area of cancer palliation^(5,7).

A summary of 168 abstracts and studies was made from meetings and journals from around the world. It demonstrated four primary effects that reflexology shows: Reflexology has an effect on certain organs e.g., MRI readings showed an increase in blood supply to the intestines and to kidneys, Reflexology can result in an improvement of symptoms e.g., positive changes were noted in renal functioning in patients on maintenance hemodialysis, Reflexology produces a relaxation effect e.g., eegs measure theta and alpha waves, decreased blood pressure, and lowered anxiety and Reflexology helps in pain reduction, 27 researches showed a positive outcome for decreasing in pain; e.g., chest pain, AIDS related pain, peripheral neuropathy of diabetes mellitus, renal stones and osteoarthritis pain^(5,8-10).

Nurses play a noticeable role in supporting patients undergoing hemodialysis who often seek information concerning Reflexology foot massage. The hemodialysis nurse can assist the patients undergoing hemodialysis and their families by replying to their questions, illustrating the information provided, and supporting their decisiveness regarding reflexology foot massage. Within their field of practice, it is expected that nurses have enough knowledge about the effective use and safety of a Reflexology foot massage, and positive attitudes toward supporting patients who intend to use Reflexology foot massage. As reflexology massage has become prevalent in nursing practice, so the present study aims to investigate nurses' knowledge and attitudes toward a Reflexology foot massage for patients on hemodialysis.^(11,12)

II. MATERIALS AND METHOD

MATERIALS

- 1.Setting: the study was executed at one unit of the hemodialysis units of Alexandria University Hospitals.
- 2.Subjects: The subjects were consisted of 30 nurses who were working at the hemodialysis unit.
- 3.Tools: Three tools were utilized to gather the required data.

Tool I: Bio-socio-demographic assessment sheet to identify nurses' personal and socio-demographic characteristics

Tool II: Nurses' knowledge assessment questionnaire to take out base line data about hemodialysis nurses' knowledge.

Tool III: Complementary, Alternative, and Conventional Medicine Attitudes Scale (CACMAS).⁽¹³⁾

METHODS

1. Written approval to precede the research was obtained from the hospital administrative personnel and nursing services department directors of the chosen setting after explanation of the objective of the study.
2. Development of the study tools. Tools (I and II) and a reflexology foot massage training program were developed by the researchers after review of relevant literatures, tool III was initially developed by Kristina L (2015)⁽¹⁴⁾ and was modified by the researchers to measure nurses attitude toward complementary therapy.
3. Content validity. Tools of the study were investigated for content validity by jury of five experts and specialist in the field of medical surgical nursing.
4. Reliability of the tools was done using internal consistency reliability using Cronbach's alpha coefficients and ranged from 0.75 to 1.0

5. Patient's consent. Informed consent was taken from the participants after explanation of the research's aim. Privacy and confidentiality was ascertained.

6. A pilot study was accomplished by on five patients to determine the clarity of the tools and to recognize the difficulties that may be faced during the implementation of the tools.

7. Data collection was started, and continued for a period of 2 months.

8. Steps of the study:-

An initial assessment was finished for each nurse using Nurses' knowledge assessment schedule to obtain base line data about hemodialysis nurses' knowledge

Nurses were exposed to training which included two sessions each session about three hours once per week. Discussion and, demonstration were utilized by the researchers in training, in addition to power point presentations, social media and videos to reinforce the information.

First session: - The importance of alternative and complementary medicines including a reflexology foot massage.

By the ending of this session the nurse was able to determine the impact of reflexology on hemodialysis patient's health outcomes

Content:-

- Introduction about alternative and complementary medicines.
- Reflexology definitions and history
- The impact of a reflexology on hemodialysis patient's health outcomes.

Second session: - Reflexology foot massage techniques

By the finishing of this session the nurse was able to determine the reflexology massage techniques

Content:-

- Foot Reflexology map
- Reflexology foot massage techniques

Nurses were re-evaluated by the researchers using nurses' knowledge assessment schedule after one month

9. Statistical analysis: data were transferred into specially design formats to be suitable for computer feeding. The researchers used computer with statistical package for social sciences (IBM SPSS) version 20 for data analysis.

9. 1.Descriptive statistics. Count and percentage: used for describing and summarizing data.

9. 2.Analytical statistics

The statistical analysis was included:-

1.Chi-square (χ^2): It was used to examine the association between two qualitative variables.

2.Normality assumptions of the ICS variables were violated (Kolmogorov-Smirnov test, $P < 0.05$), and thus, numerical (age, length of stay) background factors in association with the ICS variables were examined using Spearman' rho correlation coefficients (r with P-value)

3.Categorical variables with two groups including gender, type of admission, previous experiences of hospitalization, chronic condition, using Mann–Whitney U-test with bonferroni corrections (U with P-value) and with three or more groups (education) using Kruskal–Wallis test.

4.The level of significant for the study was $p \leq 0.05$ (10).

III. RESULTS

Table (I): Illustrates distribution of nurses’s socio-demographic characteristics

In relation to **age**, it was noticed that the highest percentage of patients was in the age group of (30-40). Regarding **sex**, the majority of nurses (93.3%) were females. In relation to **marital status**, 90% was married. As for experience per years 73.3% of them had experience that ranged from 4-6 years and around two thirds of them had previous training about hemodialysis.

SOCIO-DEMOGRAPHIC CHARACTERISTICS	(n=30)	
	No.	%
Age (years)		
20-	2	6.7
30-	22	73.3
40-≤50	6	20
Gender		
Male	2	6.7
Female	28	93.3
Educational level		
Secondary	23	76.7
University	7	23.3
Marital status		
Single	2	6.7
Married	27	90
Divorced	1	3.3
Experience (years)		
1	2	6.7
2-3	6	20
4-6	22	73.3
Previous training about hemodialysis		
Yes	18	60
No	12	40

Table (II): Illustrates comparison between nurses' knowledge before and after receiving a reflexology foot massage training program

Regarding nurses' knowledge, the table revealed that, There was a statistically significant difference between nurses' knowledge prior and after receiving a reflexology foot massage training program (p = 0.001*) as elevated percentages of nurses (90%) had a good level of knowledge after a reflexology foot massage training program, whereas, the percentages were (6.7%) before receiving the training.

	KNOWLEDGE BEFORE (N=30)		KNOWLEDGE AFTER (N=30)		SIGNIFICANCE LEVEL
	No.	%	No.	%	
Poor	27	90	0	0	0.001*
	1	3.3	3	10	
Fair	2	6.7	27	90	
Good					
Mean±SD	1.1±0.305		2.9±0.305		

p: p value for Wilcoxon signed ranks test for comparing between before and after. *: Statistically significant at p ≤ 0.05

Table (III): Nurses' Attitude before and after receiving a reflexology foot massage training program

As for nurses' **attitudes** the table revealed that, 83.3% had positive attitudes after receiving the training protocol; whereas, the percentage was 0% prior to receiving the training protocol. There was a statistically significant difference between nurses' knowledge prior and after the training protocol ($p = 0.001^*$)

	ATTITUDE BEFORE (N=30)		ATTITUDE AFTER (N=30)		SIGNIFICANCE LEVEL
	No.	%	No.	%	
Negative	25	83.3	0	0	0.001*
Fair	5	16.7	5	16.7	
Positive	0	0	25	83.3	
Mean±SD	1.17±0.379		2.±0.379		

p: p value for Wilcoxon signed ranks test for comparing between prior and after. *: Statistically significant at $p \leq 0.05$

Table (IV): Association between Nurses' knowledge and their socio-demographic characteristics.

Nurse's socio-demographic clinical data showed a significant correlation with the nurses' level of knowledge and age, level of education, years of experience, marital status and previous training. The table revealed that more than two thirds of nurses who were in the age group from 30 to 40 years, had a secondary education, 4-6 years of experience had good level of knowledge ($p=.001^*$, $p= .005^*$). In relation to marital status 86.67% of them were married $p=.005^*$ and 50% had previous training. ($p=.001^*$)

	GOOD		FAIRE		POOR		P
	No.	%	No.	%	No.	%	
Age in year							0.001*
21>30	0	0	2	6.67	0	0	
30>40	21	70	1	3.33	0	0	
40>50	6	20	0	0	0	0	
Gender							0.102
Male	0	0	2	6.67	0	0	
Female	27	90	1	3.33	0	0	
Marital status							0.005*
Single	0	0	2	6.67	0	0	
Married	26	86.67	1	3.33	0	0	
Divorced	1	3.33	0	0	0	0	
Widow	0	0	0	0	0	0	
Education level							0.001*
Secondary	21	70	2	6.67	0	0	
University	6	20	1	3.33	0	0	
Years of experience							0.005*
1	0	0	2	6.67	0	0	
2-3	6	20	0	0	0	0	
4-6	21	70	1	3.33	0	0	
Previous training							0.001*
Yes	15	50	3	10	0	0	
No	12	40	0	0	0	0	

p: p value for McNemar test for comparing between before and after. ^{WRST}p: p value for Wilcoxon signed ranks test for comparing between before and after. *: Statistically significant at $p \leq 0.05$

IV. DISCUSSION

In the current study, the researchers selected hemodialysis nurses because of numerous studies have proved positive impact of foot reflexology on various psychological and physiological parameters on hemodialysis patients.^(1,2) Alongside its therapeutic advantages, it is done by touching the patient and touch is believed to be an integral aspect of the nursing profession as it increases the therapeutic nurse-patient relationship. The utilize of foot reflexology massage by nurses is simple and useful.^(15,16) Foot reflexology is a non-invasive intervention and fulfills human needs for touch and comprehensive nursing approach.^(3,16) Stephenson 2015⁽¹⁷⁾ reported in his studies that the majority of nurses lack knowledge regarding CAM including reflexology massage, meditations, spiritual healing, homeopathy, nutritional therapy and aromatherapy and had little experience for utilizing it in clinical settings or serve as a resource to patients concerning these therapies.

Based on the finding of the current study, less than three quarters of the nurses ages extend from 20 - to less than 30 years, the majority of the nurses were married, female, and had secondary educational level. This agree with Hassan (2010)⁽¹⁸⁾ who stated that the majority of the nurses ages ranged from 20-30 years, married, female, and have diploma of nursing. The findings of this study revealed that the plurality of nurses had poor knowledge before receiving a reflexology foot massage traineeship, whilst the majority of nurses had good knowledge after receiving reflexology foot massage training program and there was a statistical significant difference between nurses' knowledge prior and after receiving the training program. This is confirmed by Afifi et al.; (2017)(5) study results which disclosed that there was a significant difference in pre and post awareness session in foot reflexology applied to undergraduate nursing students. Post-test results showed mounting in mean score for all subjects and the overall knowledge. Online with this results a research done by Hassan et al.; (2014)(19) found out that nurses had inadequate knowledge about reflexology massage and found a necessity for increasing knowledge about it in oncology nurses through continuing education and training in hospitals.

This agrees with Christina et al.; (2016)(20) who stated that the majority of nurses had insufficient knowledge concerning alternative and complementary therapies inclusive reflexology massage but they were robustly interested to learn about them. However, in a study achieved by Tamara et al.; (2018)(21) illustrated that the awareness and utilize of some complementary and alternative therapies including reflexology foot massage among nurses were high as they studied it in their Bachelor's degree nursing programs.

The findings of the existent study elaborated that the majority of nurses had Negative attitude before receiving a reflexology foot massage training program, whereas the plurality of nurses had positive attitude after receiving reflexology foot massage training program and there was a statistical significant difference between nurses' attitude prior and after receiving the training program.

On the contrary Gyasiet al.; (2016) (22) stated that a large number of nurses had positive attitude towards complementary and alternative methods including reflexology massage therapies without receiving any training program; this may be assigned to a lot of nurses use massage therapy on personal and professional level. Wang et al.; (2016) (23) found that nurses did not have a positive attitude to complementary and alternative medicine for cancer management. They attributed it to lack of knowledge about complementary and alternative medicine including reflexology massage resulting in nurses lacking confidence in recommending and discussing it with patients who asked about this therapy. Antigoni (2009)(24) and Mayadagli (2011) (25) exhibited that nurses had positive attitudes towards complementary and alternative methods including reflexology massage after training program and expressed solicitude in learning more about it. Moreover, in their study a lot of nurses believe that a reflexology massage is beneficial to patient including: improve emotional well-being and overall quality of life. Nurses agree that patients have the right to integrate reflexology massage into their conventional medical plan of care(26). Moreover, a cross-sectional survey design was done to compare between nurses' years of experience, age, and knowledge with and attitudes towards complementary and alternative methods in Korea. A sample of 485 nurses was utilized and the findings showed that most of the nurses had found out about these methods. Nurses had more learning, experience and positive attitudes regarding alternative and complementary methods with increasing age, also, nurses had higher mean scores in their knowledge. Study concluded that nurses should be knowledgeable about CAM to provide a perfect support for their patients.(26)

V. CONCLUSION AND RECOMMENDATIONS

It is necessary to establish nurses' baseline knowledge and beliefs so that relevant educational training programs can be initiated. Assessing nursing knowledge is also important because knowledge plays a definitive role in attitude or behavioral consistency that link reflexology massage with routine nursing care.

Recommendations

- Foot reflexology is becoming worldwide used in different aspects of disease management and more people find amazing advantages for their health. Based on the findings of the conducted study it is recommended that a foot reflexology massage should be addressed as a part of therapeutic management and nursing care for patients on hemodialysis. Nurses as members of multidisciplinary healthcare team, should have an idea about foot reflexology and should be aware of its actions, indications, physiological effects and contraindications. Besides, they should have a positive attitude and willingness to practice foot reflexology as a part of their care plan.
- Healthcare leaders should introduce reflexology foot massage in care guidelines or nursing care protocols for patients on hemodialysis.
- Integration of reflexology foot massage into nursing school curriculums and continuing education programs in hospitals.

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International Journal of Novel Research in Healthcare and Nursing

Vol. 6, Issue 1, pp: (649-656), Month: January - April 2019, Available at: www.noveltyjournals.com

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