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Effectiveness of Nursing Intervention Package in terms of Knowledge, Reported Practice of Parents and Attention, Scholastic Achievement and Behaviour of Children with (ADHD)

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Abstract

ADHD is considered to be a 20th century phenomenon affecting mainly children from developed nations. The aim was to assess the effectiveness of nursing intervention package in improving the knowledge and reported practice of parents and attention, scholastic achievement & behavior of children with Attention Deficit Hyperactivity Disorder (ADHD). Quasi-experimental One group pre-test and post-test design was used. The study was conducted in selected schools of Kerala. There were 119 primary school children with ADHD between the age group of 5–12 years, their parents and teachers as study subjects. The tools were used are, Structured questionnaire to assess socio-demographic data and both knowledge and Reported Practice, Modified Vanderbilt assessment Scale (Parent & Teacher) Modified Home/School situations questionnaire (Parent & Teacher), Meditation Compliance Checklist, and Nursing intervention package. The study was carried out in 5 phases. Started the assessment with the first phase (Pre-test) and with the second phase the researcher conducted Posttest1followed by interventions as planned and continued till the 5th phase of intervention and Posttest 4. The results showed that the difference showed a marked improvement in the knowledge and practice score of parents. Regarding the effectiveness, in knowledge and practice score of the respondents before and after intervention is significantly different. There is a significant difference in the mean score & 't' value which reveals an increase in attention, scholastic achievement, and in behaviours the Home/ school assessment scale in children with ADHD. There is an association between reported practice of parents and demographic variables like sex, age in years, type of family and income per month. There is also an association between reported practice of parents and scholastic achievement. Scholastic achievement is increasing with increase in attention and scholastic achievement is decreasing with decrease in attention. The desired behavior is increasing with increase in attention and behavior is decreasing with decrease in attention in the child as per the teacher assessment. The result also showed that the meditation has great impact in different areas if the subject is compliant to it.

Keywords: ADHD; Scholastic Achievement; Behaviors; Attention; Meditation.

Introduction

Childhood is a time of daydreaming, playing and exploring the world. Within this field of play, there can sometimes be a fine line between daydreaming and chronic inattention, play fulness and hyperactivity [1,2]. Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder characterized by high levels of inattention, hyperactivity and impulsivity that are present before the age of seven years, seen in a range of situations, inconsistent with the child's developmental level and causing social or academic impairment [3,4]. The

worldwide incidence of ADHD in children is 3-5 per cent. In India, it is as high as 15.5 per cent. Boys outnumber girls by a large margin in clinical samples but by a smaller ratio (3:1) in the community [5,6]. The school health Nurse works in close collaboration with the students, teachers, parents, school administration and outside agencies to address the academic, social, behavioural and emotional needs of children within the school setting. Therefore, the investigator felt that there is an imperative need for exploring a safer and a more convenient alternative, which could be of more use to teachers, parents and children in the Indian setting. Hence, this study was taken up and designed to help meet these needs.

The aim was to assess the effectiveness of nursing intervention package in improving the knowledge and reported practice of parents and attention, scholastic achievement &behavior of children with Attention Deficit Hyperactivity Disorder (ADHD).

Materials and Methods

In view of the nature of the problem selected quantitative approach is considered appropriate and a Quasi-experimental One group pre-test and post-test design was used for the present study. To achieve the stated objectives the hypotheses formulated as follows

Hypotheses: (at 0.05 level of Significance)

H1: There will be a statistically significant difference in the mean knowledge and practice (reported) scores of parents of children with Attention Deficit Hyperactivity Disorder (ADHD) before and after nursing intervention package.

H2: There will be a statistically significant difference in the mean attention score of the children before and after nursing intervention package

H3: There will be a statistically significant difference in the mean scholastic achievement score of the children before and after nursing intervention package.

H4: There will be a statistically significant difference in the mean behavior score of the children before and after nursing intervention package.

H5: There will be a statistically significant association between the Knowledge score and the selected Demographic Variables like sex, age in years, number of children, birth order, type of family, income per month, father's education, father's occupation, mother's education, mother's occupation and scholastic performance.

H6: There will be a statistically significant association between the reported practice score and the selected Demographic Variables like sex, age in years, number of children, birth order, type of family, income per month, father's education, father's occupation, mother's education, mother's occupation and scholastic performance.

H7: There will be a statistically significant correlation between Attention, Scholastic achievement and Behaviour.

The investigator has selected 3 CBSE schools by purposive sampling after considering the proximity, availability of subjects and co-operation from authorities. Subjects were assigned to the study group by lottery method of simple Random sampling replacement technique. The sample comprised of 119 children with ADHD in the age group of 5-12 years, their parents and 24 teachers who are directly involved with the students. The following instruments were developed/ used by the researcher to collect data.

1. Socio- demographic data containing 25 items.
2. Structured questionnaire, consists of two sections

Section 1

It consists of 51 items on ADHD provided with three - point scale indicating true, false and do not know and which consists of the following Symptoms/diagnosis of ADHD, Management of ADHD, and Associated features.

Section 2

There are also 15 items on routine practice of parents phrased with in terms of a statement about management of their child with ADHD and uses a Yes, or No format. The scoring is done as follows:

Knowledge		
Poor	Up to 33%	0-17
Average	34- 66%	18-34
Good	Above 66%	35-51
Practice		
Poor	Up to 33%	0-5
Average	34- 66%	10
Good	Above 66%	11-15

3. Modified Vanderbilt assessment Scale (Parent):

12 Items on behavior,

03 items on academic achievements

05 items on attention

4. Modified Vanderbilt assessment Scale (Teacher):

12 Items on behavior

05 items on class room behavior

03 items on academic achievements

05 Items on attention

This is a tool is adapted from the Vanderbilt Rating Scales developed by Mark L. Wolraich, MD. Revised-1102, a slight modification was done by the researcher to apply the tool into the Indian culture with the permission of the author. The Vanderbilt Assessment Scales are scored from 0 (Never) to 3 (Very Often) for five dimensions: Inattention; Hyperactivity/ Impulsivity; Combined (Inattention and Hyperactivity/ Impulsivity);

5. Home situations questionnaire (Parent)

13 items on attention level during activities at home. This is a tool prepared from the Home and School Situations Questionnaire- Revised: Normative Data, reliability, and Validity by G.J.Dupaul, 1990. It consists of different activities a child does in the school & home which needs concentration.

6. School Situations questionnaire (Teacher)

9 items on attention level at school activities 2.

7. Meditation Compliance Checklist

Prepared by the researcher to assess the compliance with meditation. There are 06 items added on list regarding the compliance with meditation. This is a list of behaviours & mannerisms which demonstrates the degree to which the child is incorporating meditation in to daily practice.e.g. Total time which the child is able to keep his eyes closed, interest in participation, able to sit quietly, able to sit without any interruption, etc.

8. Nursing intervention package which consists of the following

i. Parent Teaching Sessions

- Definition
- Primary Symptoms
- Incidence Rate
- Causes
- Factors contributing to ADHD
- Types
- The problems associated with ADHD
- Diagnosis
- Prognosis
- The major intervention categories for ADHD
- Strategies for Parents
- Home Management
- Behavior Modification
- Concentration Enhancement Methods
- Social Skill and School BasedInterventions

The topic was planned for 3 sessions. A booklet was prepared and circulated among the parents for easy understanding and reference [13,16].

ii .Meditation

The investigator underwent a programme on meditation and relaxation exercises which is applicable to children between the age group of 5-12 years. The method of teaching was through demonstration of meditation with background music for a group of eighteen to twenty children.

Content validity of the tool:

Content validity of the tool and the intervention package was established after consulting with experts from the field of two child Psychiatrists specialized in ADHD, two psychologists specialized in ADHD, one Pediatrician who runs a clinic for children with ADHD and five psychiatric nursing experts.

Reliability:

The reliability of the tool (structured questionnaire and observation check list) was tested by administering it to 10 parents in the school. Split half method by using Karl Pearson's formula was used. The reliability is found to be r= 0.99 and hence statistically significant and thus tool found to be effective and reliable.

Procedure for Data Collection

Ethical Considerations

Ethical clearance was obtained from the institutional ethical committee of MOSC Medical College Hospital, Kolenchery, Ernakulam. Permission was also taken from the, DEO, managements & principals of different schools.

Pilot Study:

The pilot study was conducted in VyasaVidyanikethan School from 23rd of December 2010- 31st of March 2011, after getting the administrative approval from the concerned authorities.

Data Collection:

Prior to collection of data for main study the researcher took formal permission from the schools. All the samples were selected with the help of school teachers and school psychologists in consultation with a psychiatrist. From each school 39- 40 samples were taken who filled the selection criteria. The study was carried out in 5 sessions [22].

1. From the 25th to 30th of July 2011 the researcher started the sessions (Pretest) with the pre intervention assessment phase. The researcher introduced herself and explained the purpose of the study to the parents and teachers, obtained their willingness and written consent/assent was taken from the subjects. Confidentiality was assured to the subjects. A personal interview and introductory lecture was conducted. The scales used in the study were projected for the group with the help of LCD and instruction regarding the filling the forms were given. The researcher approached each respondent and administered the tools.
2. The posttest-1 and I session, was conducted along with introduction of meditation to the sample group of children. Parents also were encouraged to attend the same. The investigator demonstrated to the group. Also the researcher took the assistance of the teachers during the administration of intervention. Then the meditation was to be carried out for 10 months and the researcher observed them bimonthly with the teachers in the respective schools. The subjects were instructed by the researcher to perform meditation twice a day for at least 5 minutes with the parents or if possible more and to note the compliance as per the checklist given by the researcher.
3. The Posttest-2, 3, & 4, followed by the Nursing intervention package applied to the subjects along with the return demonstration of meditation by the group. The duration of meditation was increased to at least 10 & 15 minutes or if possible more and parents were asked to note the compliance as per the checklist given by the researcher. The post-test knowledge and practice assessment of parents and assessment of children were carried out after 11 months in all the schools. Bimonthly Observations were done to assess the progress in the children in the specified areas. Telephonic Contact with the subjects were done monthly to know the progress and also to remind them about the coming sessions.

Results

Majority (95.0%) of the children have been living with both parents. Only 9.2% of them are using spectacles. Majority (82.4%) of the mothers of respondents never had any health problems during pregnancy. 39.5% had their delivery of this child between the age group of 26 - 30 years and 38.7% of mothers had the delivery at 20 - 25 years of age. 51.3% of them had normal delivery and 79.0% of them did not have any problem during delivery. Majority (51.3%) of the respondents had a birth weight above 3 kg and 74.8% of them did not develop any problem while in the hospital. Regarding delayed milestones 8.45% were late in talking 5.9% were late in walking 5% were late in sitting and majority of

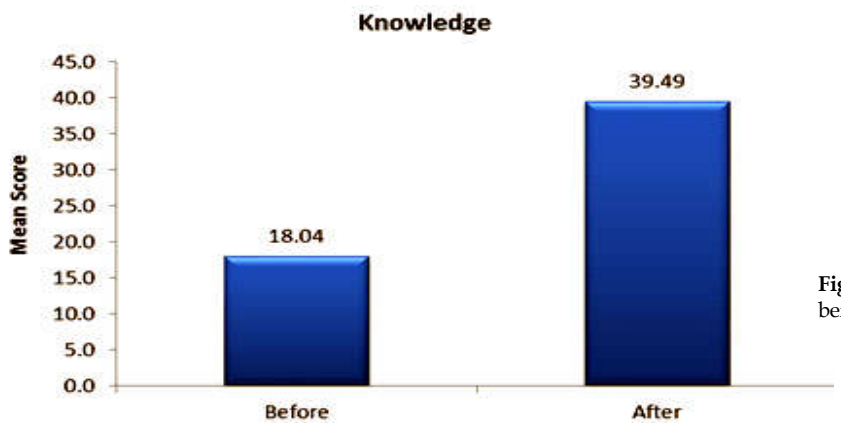

Fig. 1: Knowledge Score of the respondents before & after intervention

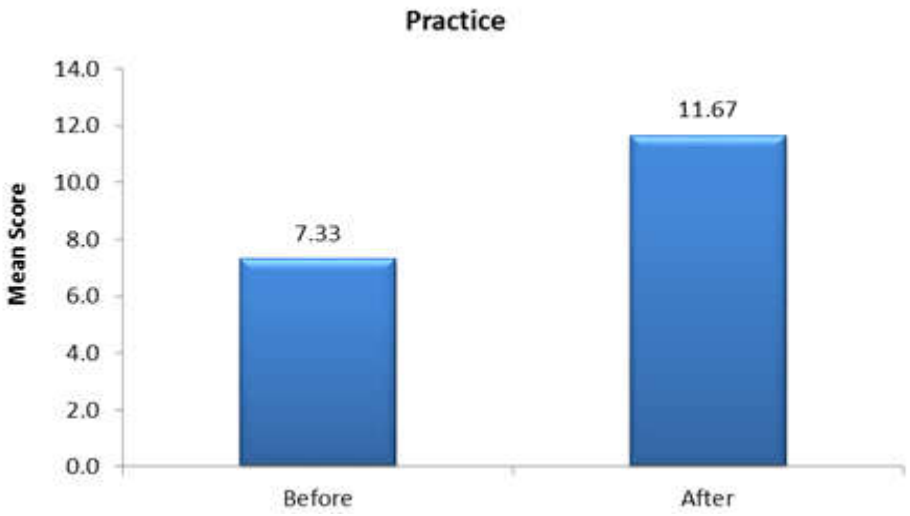

Fig. 2: Reported practice score of respondents before & after intervention

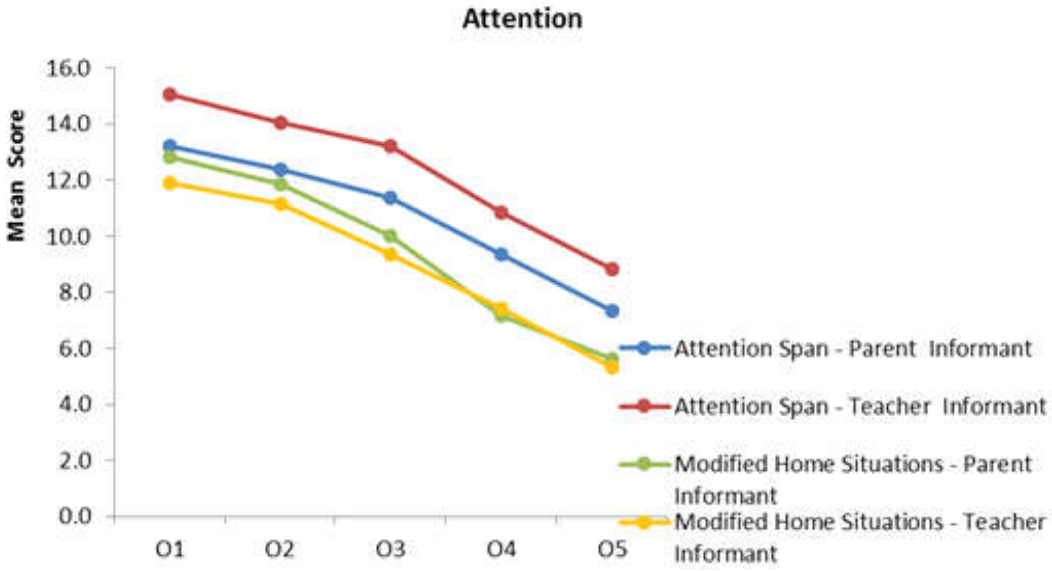

Fig. 3: Attention span score by Parent and Teacher in Home and school situations

them did not have any delayed milestones. 34.5% of them gives history of falls and 6.7% give a history of accidents.32.85% of the respondent's gives history of frequent common cold and sore throat. 29.4% of them have family history of ADHD.

Regarding knowledge, the difference is marked that 48.7% of them had poor knowledge, and 2.5% had good knowledge and which improved after nursing intervention as 2.5% of them only remained as poor scorers, and 61.34% showed a marked improvement in their knowledge score. The results showed that 26.05% of them had poor practice in managing children with ADHD, 58.8% had adequate and 15.12% had scored good after nursing intervention and only 1.7% of them remained as poor scorers, and 52.94% showed a marked improvement in their knowledge score in the parenting skills.

The ADHD knowledge score of the respondents after intervention (39.49) is significantly higher than the ADHD knowledge score before intervention (18.04).

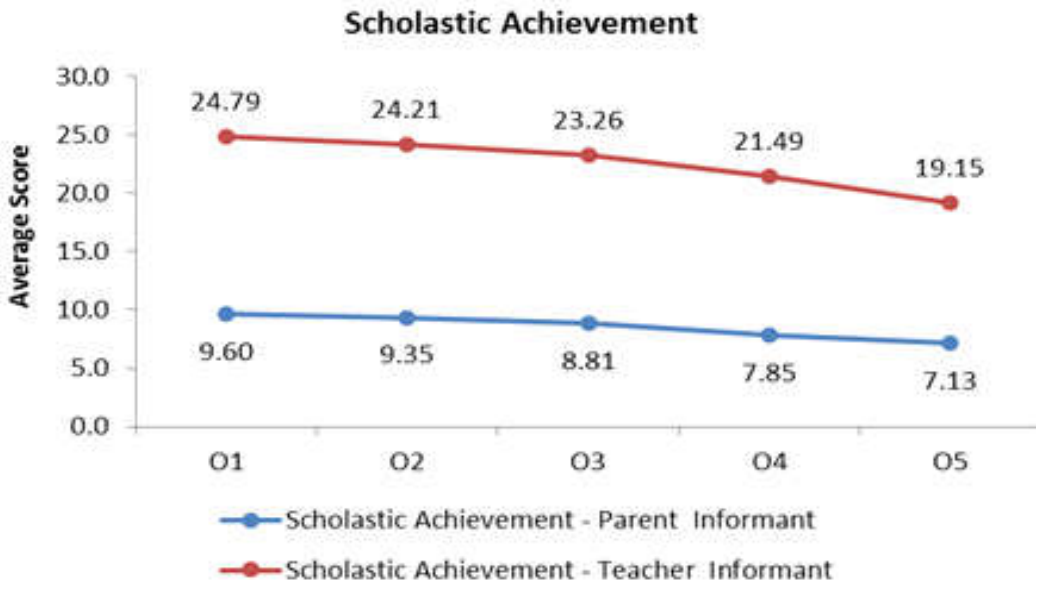

Fig. 4: Scholastic Achievement score by Parent and Teacher in Home and school situations

The reported practice of parents after intervention (11.67) is significantly higher than the reported practice of parents before intervention (7.33).

Regarding the level of problems in paying attention scored by parent, all the respondents had the highest mean score of 13.20 during the pretest. The attention score decreased to 12.37 during the posttest-1 and showed a sharp decline in attention score to 7.34 in the posttest-4 which showed a significant increase in attention in children with ADHD after the nursing intervention package. The problems with attention score decreased to 14.04 during the posttest-2 and showed a sharp decline in attention score to 8.82 in the posttest-4. This showed that there is a significant increase in attention in children with ADHD after the nursing intervention package.

Problems with attention in the home situation scored by parent, the respondents had the highest mean score of 12.83 during the pre-test. The home situation score decreased to 11.87 during the posttest-1 and showed a sharp decline in home situation score to 5.61 in the posttest-4. This shows that there is a significant reduction in problems with attention in home situation score and increase in attention in home situation score in children with ADHD after the nursing intervention package.

In the school situation score by teacher, the respondents had the highest mean score of 11.89 during the pre-test. The home situation score decreased to 11.17 during the posttest-1 and showed a sharp decline in home situation score to 5.31 in the posttest-4 shows that there is a significant reduction in problems with attention in school situations score and increase in attention in the school situations scale in children with ADHD after the nursing intervention package.

Scholastic achievement score by parent, the respondents had the highest mean score of 9.60 during the pre-test. The scholastic achievement score decreased to 9.35 during the posttest-1 and showed a sharp decline to 7.13 in the posttest-4. This shows that there is a significant reduction in problems with scholastic achievement and increase in scholastic achievement in children with ADHD after the nursing intervention package. Scholastic achievement score by teacher, the respondents had the highest mean score of 24.79 during the pre-test. The scholastic achievement score decreased to 24.21 during the posttest-1 and showed a sharp decline to 19.15 in the posttest-4 shows a significant reduction in problems with scholastic achievement and increase in scholastic achievement in children with ADHD after the nursing intervention package.

The behavior score by parent, the respondents had the highest mean score of 13.34 during the pre-test. The score decreased to 12.50 during the posttest-1 and showed a sharp decline to 7.32 in the posttest-4 and which shows a significant reduction in problems with behaviours and increase in desired behaviours in children with ADHD after the nursing intervention package.The behavior score by teacher, the respondents had the highest mean score of 13.19 during the pretest. The

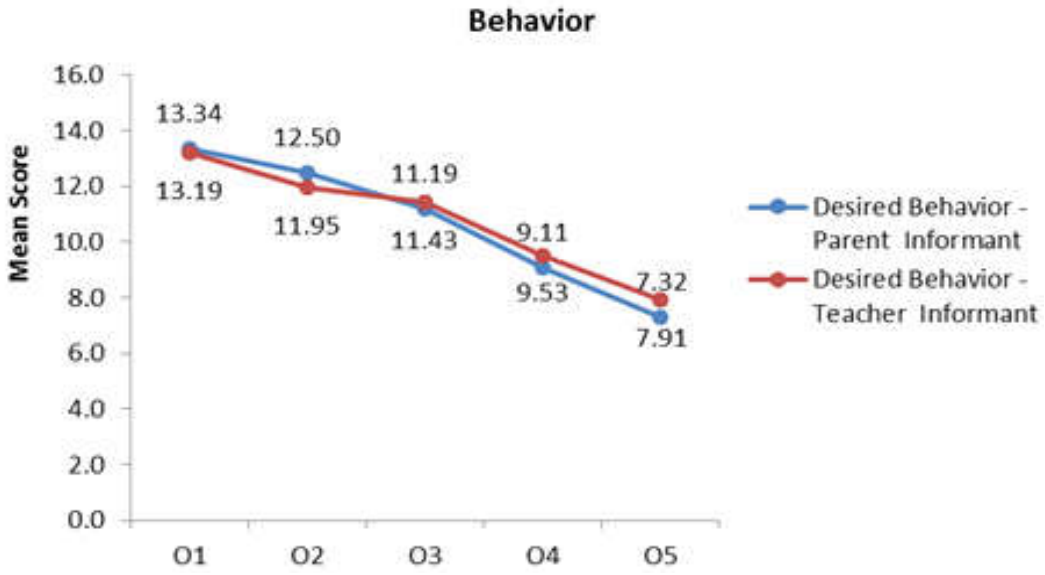

Fig. 5: Behaviour score by Parent and Teacher in Home and school situations

score decreased to 11.95 during the posttest-1 and showed a sharp decline to 7.91 in the posttest-4 which showed a significant reduction in problems with the behavior score and increase in desired behaviours in children with ADHD after the nursing intervention package.

As the p-values are less than the significance level 0.05; there is an association between reported practice of parents and demographic variables like gender, age in years, type of family and income per month. Regarding association between knowledge on ADHD and demographic variables, as the p-value corresponding to scholastic performance is less than the significance level 0.05; there is an association between reported practice of parents and scholastic performance which shows that the reported practice of parents is independent of father's education, father's occupation, mother's education and mother's occupation and dependent with scholastic performance.

As per the parent assessment, correlation between attention and scholastic achievement is significant at 0.01 level; scholastic achievement is increasing with increase in attention and scholastic achievement is decreasing with decrease in attention. There is no correlation between attention and behavior. The correlation between behavior and scholastic achievement is also not significant.

As per the teacher assessment, the correlation between attention and scholastic achievement is significant at 0.01 levels; scholastic achievement is increasing with increase in attention and scholastic achievement is decreasing with decrease in attention. The correlation between attention and behavior is significant at 0.05 levels; desired behavior is increasing with increase in attention and behavior is decreasing with decrease in attention. The correlation between behavior and scholastic achievement is not significant.

Out of 119 subjects who attended the sessions, only 52 of them were able to follow meditation. As per the table there is a slight increase from 59.6% to 61.5% and 57.7% to 61.5% of respondents were regular in meditation and imitativeness in meditation respectively. Interest in participation was also noted from 78.8% to 80.8% .A marked increase from 48.1% to 63.5% was noted in the ability to sit quietly during meditation in the respondents. About 50% of them were able to meditate without any interruption during the third observation. Overall the result shows that the meditation has great impact in different areas if the subject is compliant to it.

Discussion

The present study showed that nursing intervention package was effective in improving the knowledge of the respondents on ADHD. The research findings support the idea that nurses can assist families in learning about and dealing with their child's ADHD, a chronic condition. Results also provide some support for the effectiveness of this parenting program for reducing symptoms of attention-deficit hyperactivity disorder (ADHD)

and associated problems in preschool-aged children. This study clearly indicated the need for preparing the parents with sufficient knowledge in order to take care of their children with ADHD. It suggests that addressing attention problems in early childhood could help many children make academic gains throughout their school careers. It also demonstrated that as nurses we have a responsibility towards our children to make sure that parents are knowledgeable about ADHD and be in a position to offer support to children so they can manage their behavior and achieve success both socially and academically. Sound mental health in childhood and especially adolescence provide a strong foundation for adult contentment, happiness and adjustment and adolescents form a significant proportion of the general population.

Conclusion

The study provided an enriching experience to the investigator. On the basis of the study it can also be concluded that a systematically planned and implemented intervention program has a positive effect on the knowledge and practice of the parents and as well as the attention, scholastic achievement and behavior of children with Attention Deficit Hyperactivity Disorder (ADHD). Success in school is like a three-legged stool in which the parent, teacher and student each play a vital role.

And the most valuable reward in teaching is hearing a student say," Thank you for understanding me".

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Indian Journal of Forensic Odontology	Semiannual	5500	5000	430	391
Indian Journal of Genetics and Molecular Research	Semiannual	7000	6500	547	508
Indian Journal of Hospital Administration	Semiannual	7000	6500	547	508
Indian Journal of Hospital Infection	Semiannual	12500	12000	938	901
Indian Journal of Law and Human Behavior	Semiannual	6000	5500	469	430
Indian Journal of Legal Medicine	Semiannual	8500	8000	607	550
Indian Journal of Library and Information Science	Triannual	9500	9000	742	703
Indian Journal of Maternal-Fetal & Neonatal Medicine	Semiannual	9500	9000	742	703
Indian Journal of Medical & Health Sciences	Semiannual	7000	6500	547	508
Indian Journal of Obstetrics and Gynecology	Bi-monthly	9500	9000	742	703
Indian Journal of Pathology: Research and Practice	Monthly	12000	11500	938	898
Indian Journal of Plant and Soil	Semiannual	6500	6000	508	469
Indian Journal of Preventive Medicine	Semiannual	7000	6500	547	508
Indian Journal of Research in Anthropology	Semiannual	12500	12000	977	938
Indian Journal of Surgical Nursing	Triannual	5500	5000	430	391
Indian Journal of Trauma and Emergency Pediatrics	Quarterly	9500	9000	742	703
Indian Journal of Waste Management	Semiannual	9500	8500	742	664
International Journal of Food, Nutrition & Dietetics	Triannual	5500	5000	430	391
International Journal of Neurology and Neurosurgery	Quarterly	10500	10000	820	781
International Journal of Pediatric Nursing	Triannual	5500	5000	430	391
International Journal of Political Science	Semiannual	6000	5500	450	413
International Journal of Practical Nursing	Triannual	5500	5000	430	391
International Physiology	Triannual	7500	7000	586	547
Journal of Animal Feed Science and Technology	Semiannual	7800	7300	609	570
Journal of Cardiovascular Medicine and Surgery	Quarterly	10000	9500	781	742
Journal of Forensic Chemistry and Toxicology	Semiannual	9500	9000	742	703
Journal of Global Medical Education and Research	Semiannual	5900	5500	440	410
Journal of Global Public Health	Semiannual	12000	11500	896	858
Journal of Microbiology and Related Research	Semiannual	8500	8000	664	625
Journal of Nurse Midwifery and Maternal Health	Triannual	5500	5000	430	391
Journal of Orthopedic Education	Triannual	5500	5000	430	391
Journal of Pharmaceutical and Medicinal Chemistry	Semiannual	16500	16000	1289	1250
Journal of Plastic Surgery and Transplantation	Semiannual	26400	25900	2063	2023
Journal of Practical Biochemistry and Biophysics	Semiannual	7000	6500	547	508
Journal of Psychiatric Nursing	Triannual	5500	5000	430	391
Journal of Social Welfare and Management	Triannual	7500	7000	586	547
Medical Drugs and Devices Research	Semiannual	2000	1800	156.25	140.63
New Indian Journal of Surgery	Bi-monthly	8000	7500	625	586
Ophthalmology and Allied Sciences	Triannual	6000	5500	469	430
Otolaryngology International	Semiannual	5500	5000	430	391
Pediatric Education and Research	Triannual	7500	7000	586	547
Physiotherapy and Occupational Therapy Journal	Quarterly	9000	8500	703	664
RFP Indian Journal of Medical Psychiatry	Semiannual	8000	7500	625	586
RFP Journal of Gerontology and Geriatric Nursing	Semiannual	5500	5000	430	391
Urology, Nephrology and Andrology International	Semiannual	7500	7000	586	547

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Incidence of Superficial Thrombophlebitis and its Determinants among Hospitalised Children

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Abstract

Background and Objective: The purpose of the study was to assess the incidence of superficial thrombophlebitis among Pediatric patients and to identify the determinants associated with the development of superficial thrombophlebitis among pediatric patients. *Material and Methods:* The research design used in this study was a descriptive cross – sectional study. Population of the study comprised of all the children who are on intravenous therapy. Four hundred samples were selected by convenient sampling. Data collection proforma included subjective data sheet, visual infusion phlebitis (VIP) scale and questionnaire to determine the determinants of superficial thrombophlebitis. *Results:* The incidence of thromboplebitis was 80 .75 %. There was a significant association ($p<0.05$) between the incidence of thromboplebitis and site of cannulation, cannula size and cannulation duration. *Conclusion*: It was detected that the incidence of superficial thrombophlebitis was higher among hospitalised children receiving intravenous therapy in pediatric ward. Nurses need to be trained in skills required for cannulation. Early identification and prompt treatments are required to reduce the complications related to peripheral intravenous cannulation.

Keywords: Visual Infusion Phlebitis (VIP); Thrombophlebitis.

Introduction

Sarah (2008) expressed that Children are the valuable asset to the society. Illness and hospitalization gives a significant stress to both child and family. Every year millions of children are admitted to the hospital, and most of them required IV cannulation. The practice of using peripheral venous catheter is a general procedure in health care settings [1].

Macklin (2003) stated that For the introduction of medications, solutions and blood products, the peripheral venous catheters inserted into veins of the forearm and hands [2]. Ahlquist (2006) quoted that Systemic complications of IV therapy included fluid overload, emboli, fever and sepsis whereas local complications are infiltration and extravasation, thrombophlebitis, hematoma and clotting and obstruction [3]. The prevalent complication is thrombophlebitis; that occurs with a peripheral venous catheter. It requires eviction of the catheter and placing of a new catheter at another site. Grune (2004) stated that Phlebitis is the inflammation of a vein associated with mechanical or chemical irritation or both. It is characterized by redness, warmth, pain and swelling [4].

Materials & Methods

A descriptive cross - sectional study design was used for this study.

Inclusion Criteria

Children who are on intravenous therapy in the age group of 1 month - 12 years.

Exclusion Criteria

- Children with central venous catheter on the same limb.
- Children with scalp vein cannulation.
- Children with dermatological disorder.
- Children diagnosed with a primary vasculitis.
- Children diagnosed with malignancy.
- Children receiving chemotherapeutic agents.

Method of sample selection

Non–probability sampling (convenient sampling) technique was used.

Description of a Tool

The tool consists of three sections:

Section A: Proforma for data collection consisting of 4 items seeking information about hospital number; age; gender and diagnosis of the patient.

Section B: Jackson's Visual infusion Phlebitis scale (Jackson; 1998) to assess and grade the signs of superficial thrombophlebitis at the peripheral intravenous catheter site. The scale included five signs and symptoms of superficial thrombophlebitis such as pain, erythema, swelling, palpable venous cord and pyrexia and grades were assigned based on the signs and symptoms. The scale also contained the management of each grade of phlebitis.

Section C: 14 questionnaires to determine the determinants of superficial thrombophlebitis. It consists of data and time of insertion of cannula, limb used for insertion of cannula, site used for the insertion of the cannula, cannulation size, duration of cannula in situ, material used for cannula fixation, dressing condition, restraint use, intravenous solution received, intravenous drug received, type of intravenous administration, number of cannulation at the same site prior to thrombophlebitis development, the person who cannulated and in which shift the cannula has been inserted.

Data Collection Proccedure

Approval was obtained from the scientific committee and ethical committee. The study objective was explained to the subjects and their parents. Written informed consent got.

Every day patient s who had intravenous cannula was observed for phlebitis using visual infusion phelbitis scale and data was collected based on the questionnaire.

Data Analysis:

The data on categorical variable was expressed as frequency and percentage. Incidence of thrombo phlebitis was expressed in percentage. The association of incidence of phlebitis with the demographic variables was carried out by chi – square test.

Results

Majority of the study participants (37%) were less than one year. Regarding gender 61.8% were males. Pertaining to diagnosis, majority (24%) of patients had respiratory conditions. Majority of cannulation (45.4%) was done on right upper limb. The most prevalent site (59 %) was on the dorsum of upper limb. The majority (60.7%) of the cannulations were of 24G size. Regarding duration in situ, (33.5%) patients cannula was changed on the second day. In majority (95.7%) patients, elastoplasts was used for fixation of cannula. Majority (95.5%) of patients did not have any restraint for stabilizing the site of cannulation. Regarding personnel, 88.5% cannulations were done by doctors. Pertaining to shift in which cannulation was done, 214 (53.5%) of cannulation was done during the morning shift.

The incidence of thrombophlebitis among hospitalized children receiving intravenous therapy in paediatric wards was 80.75% in which 3.5% (14) developed grade 1, 29% (116) developed grade 2, 41.3% (165) developed grade 3 and 7% (28) developed grade 4 thrombophlebitis.

The findings of the study showed that diagnosis, site for cannulation, cannula size, cannulation duration, material for fixation of cannula and number of drugs infused were associated with the development of superficial thrombophlebitis.

Discussion

The incidence of thrombophlebitis among hospitalized children receiving intravenous therapy in pediatric wards was 80.75 % in which 3.5%(14) developed grade 1, 29%(116) developed

grade 2, 41.3% (165) developed grade 3 and 7% (28) developed grade 4 thrombophlebitis.

The above findings were supported by the following studies:

Salgueiro oliveira et al. carried out a prospective observational study of the patient s in Portugal to identify the phlebitis incidence and the associated risk factors responsible for its development in medical ward of a central hospital. A total of 1,244 catheters were assessed, and 317 were reinserted or removed. According to his study, phlebitis incidence was found to be 11.09% [4]. Singh et al. carried out a study on the use of peripheral IV catheters related thrombophlebitis and its risk factors in an adult study population belonging to a teaching hospital. The objective of the study was to assess the thrombophlebitis occurrence in relation with peripheral IV catheters and to bring to light the probability factors associated with its development. Two hundred and thirty clients were selected for the study who were given first time IV therapy during the period of last two months. Every day the site was assessed for thrombophlebitis. Jackson standard VIP scale was used to determine the severity of phlebitis in their study. It was seen that thrombophlebitis developed in 136 individuals (59.1%) and the incidence was high with male gender, insertion at the sites of forearm and small catheter size.

Conclusion

The present study showed a higher incidence of superficial thrombophlebitis. Nurses can take particular attention in the selection of site, cannula size and material used for fixation of cannula. Nurses can take a significant role in screening the cannula site for superficial thrombophlebitis thereby reducing the extent of complications.

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Original Research Article

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Knowledge on Facility Based Newborn Care (FBNC) among Staff Nurses of Pediatric Hospitals

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Abstract

Neonatal Mortality Rate Is Substantially High In India. Every year nearly 45% of all under 5 child deaths are among Newborn infants, babies in their first 28 days of life or the neonatal period. The main causes of newborn deaths are prematurity and low-birth-weight, infections, asphyxia (lack of oxygen at birth) and birth trauma. Under NRHM scheme GOI has introduced training for all health professionals of facility based newborn care in 2012. To support this training session present research work is thought of to be introduced among Staff nurses of newborn care unit. "A Study to Assess the Knowledge of Staff Nurses on FBNC (facility based new born care) by The Standardized Tool in selected hospitals of Gwalior, with a view to develop information booklet." The Objectives of The study are To assess the knowledge of Staff nurses on certain selected aspects of FBNC (facility based new born care), To find out the association between demographic variables of staff nurses such as work experience in paediatricunit, age of staff nurse, educational qualification, training attended of FBNC, type of working institute, workshops attended, additional diploma in newborn care and their knowledge score in certain selected aspects of FBNC (facility based new born care), To compare the knowledge score of participants on FBNC during child birth and just after child birth. A descriptive research approach was used in the current study. The population compromised of StaffNurses working in governmental and non govt. Paediatric hospitals in Gwalior city of M.P. Purposive sampling technique was used to select a sample of 60 Staff Nurses. the findings of the study revealed that the Mean knowledge of participants about Newborn care during birth is found to be less than mean knowledge score of participants about Newborn care just after birth which is 6.867 and 8.983 resp. with a standard deviation of 1.589 and 1.01. Calculated Median of knowledge score 7 and 9. The information booklet is also provided to all selected participants after the assessment of knowledge deficit areas.

Keywords: FBNC: Facility Based Newborn Care; SNCU: Sick Newborn Care Unit.

Introduction

The trained nurse has become one of the great blessings of humanity, taking a place beside the physician and the priest"-William Osler.

In India 26 million babies are born every year, and 940,000 babies die before one month of life. The neonatal period is only 28 days, and yet at 35/1000 lives births SRS 2008), neonatal mortality contributes about two-thirds of all infant deaths (IMR 50, SRS 2009) and about half of all deaths (U5MR 69, SRS 2008) in children younger than age 5 years. Preventable morbidities such as hypothermia, asphyxia, infections and respiratory distress continue to be the main causes of mortality in the neonatal period. Infant mortality rate in India has steadily declined from 58 per thousand live births

in 2004 to 50 per thousand live births in 2009. However, there is slow progress in reducing neonatal mortality which declined from 37 in 2004 to 35 in 2008. Deaths in the first week of life have shown the least progress. There is a growing rec ognition that in order to mee t the national and Millennium Development Goals (MDGs), a substantial reduction in Neonatal Mortality Rate is needed, and reducing deaths in the first week of life is essential to make progress. Rapidly increasing numbers of newborns are being delivered inhospitals after the launch of JSY scheme. The roll out of IMNCI also leads to increased contact ofnewborns at their households and improved detection and referral of sick newborns to health facilities. Bringing these two together has resulted in an increased number of sick newborns presenting in referral hospitals. Provision and delivery of services for both essential newborn care and care of sick newborns inthe existing health facilities at the district and sub-district level has been found lacking. Facility-basednewborn care has a significant potential for improving newborn survival. It has been estimated that health-facility based interventions can reduce neonatal mortality by as much as 25-30%. Newborn care is strongly influenced by women's social and health status and by home care and practices for mother and newborn, as well as by maternal and newborn cares services (Rodolfo et al. 2000). Traditional care practices at home and in the community inevitably affect maternal and newborn health. In the countries of South Asia women often have many children who are closely spaced; women maintain their full workload during pregnancy and restrict their diet due to fear of delivering a big baby. Women are valued less than men. This attitude may manifest through female infanticide, limited access to food, lack of educational opportunities, restricted mobility, lack of participation in decision-making, early marriage, dominance of mothers in law, expectation to bear many children, heavy workloads, physical and emotional abuse and inadequate access to health services. Lack of understanding of the urgency attached to newborn illnesses or obstetric emergencies, traditions of seclusion of mother and newborn, fatalistic outlook, belief in evil sprits, and lack of family finances to pay for care and transport also cause delay in deciding to seek care.

Need for the Study

The neonatal mortality rate in India is amongst the highest in the world and skewed towards Rural Areas. No availability of trained manpower one of the major hurdles in ensuring quality neonatal care. Low and middle income countries documented alternative strategies that have proved to be favorable in improving neonatal health. Recruiting and retaining trained manpower in rural areas by all means is essential to improve the quality of neonatal care services. Robin, L. (2012) the transition from fetus to newborn requires intervention by a skilled individual or team in approximately 10% of all deliveries. Perinatal asphyxia and extreme prematurity are the 2 complications of pregnancy that most frequently necessitate complex resuscitation by skilled personnel. Approximately 80% of low birth-weight infants require resuscitation and stabilization at delivery. For the surviving infants, effective management of asphyxia in the first few minutes of life may influence long-term outcome. *For this reason, all personnel involved in delivery room care of the newborn should be trained adequately in all aspects newborn care,* Thukral, A, .et al. (2012) .online training and teaching in essential newborn care is feasible and acceptable for in-service nursing professionals and serves as a useful tool for professional development of their practical skills and knowledge to improve the nursing practice and to prevent newborn mortality rate in developing countries. Kangaroo mother care may help growth and development in premature infants. Premature are prone to get medical problems. Kangaroo mother care based on skin to skin contact between mother and infant. It improves the nurturing of premature infants. With the growing complexity of health science, the health professional require knowledge and skills on essential newborn care and to assess newborn to prevent future complications in the newborns life. The investigator's personal experience of working in hospital felt that nurses need training module on essential newborn care according to current guidelines which will help nurses to perform newborn care, so that early neonatal complications can be prevented. Statement of The Problem-A descriptive Study to Assess the Knowledge of Staff Nurses on FBNC (facility based new born care) in selected hospitals of Gwalior, with a view to develop an information booklet.

Objectives

1. To assess the knowledge of Staff nurses on certain selected aspects of FBNC (facility based new born care).
2. To find out the association between

demographic variables of staff nurses and their knowledge score in certain selected aspects of FBNC (facility based new born care).

3. To compare the knowledge score of participants on FBNC during child birth and just after child birth.
4. To develop information booklet for Staff nurses for up gradation of their knowledge and skills for new born care.

Assumptions

1. Staff nurses will have basic knowledge about newborn care.
2. Demographic variables like educational status, workingarea, age, training attended, source of knowledge will influence the knowledge on FBNC (facility based new born care).

Conceptual frame Work

The conceptual framework for this study is based on Ida jean Orlando's dynamic nurse–patient relationship.

Research Methodology

A Quantitative research approach selected to present the study.

Research Design:

The Research Design Selected For The Present Study Is Non Experimental Descriptive Design**.**

Settings of the Study:

Selected Governmental And Non Governmental Paediatric Hospital, Gwalior, M.P.

Population:

Staff Nurses

Target Population:

Staff nurses working in pediatric hospital

Sample Size:

60 staff nurses working in pediatric hospital.

Sampling Technique:

Subjects Are Selected Through Non Probability Purposive Sampling.

Criteria for Sample Selection:

Inclusion Criteria

1. Staff Nurses who were willing to participate in the study.
2. Staff nurses who are working in Newborn care unit.

Exclusion Criteria

1. Staff Nurses who are not willing to participate in the study.
2. Those who did not read or understand either English.

Data Collection Method:

Self-administered –structured questionnaire

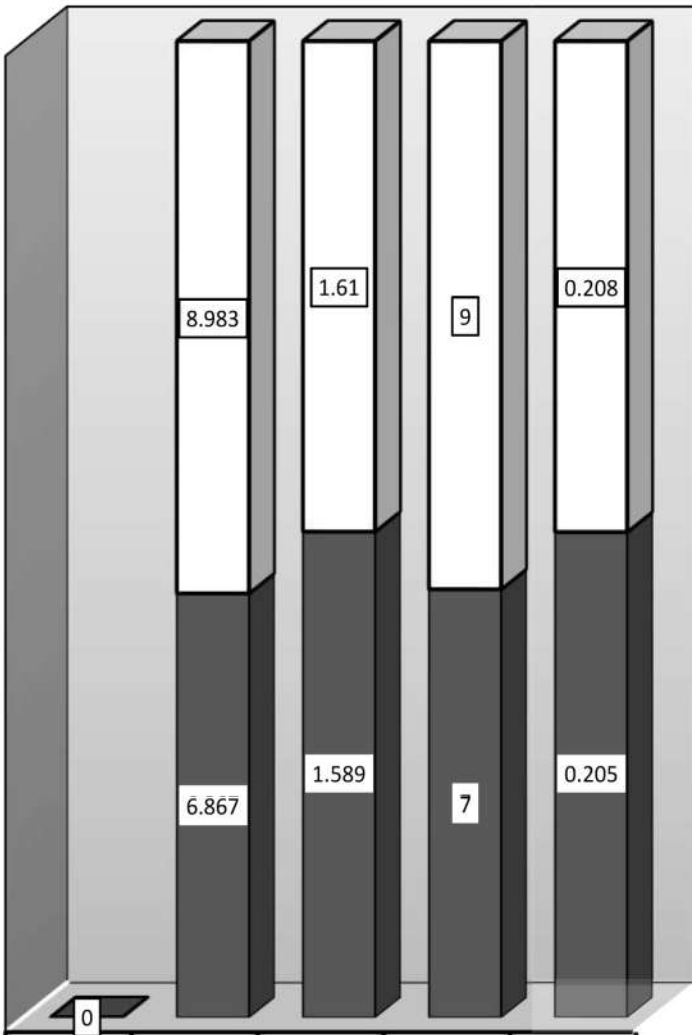
Results

1. Respondents Between The Age Group of 31-40 Show Major Proportion of 28.30%. Among Age Group Respondents Between the Age Group Of 41-50 Years Show Significance With Knowledge Score in Both Areas i.e During And just after child birth.
2. Respondents were majorly belonging to Hindu category and having proportion of 75%.
3. Respondents in the present study were majorly diploma holder Staff Nurses of GNM and having proportion of 51.6%. This variable does not show any significance with knowledge score obtained by staffnurses.
4. Respondents in this study majorly were in the category of 1-2 years of experience in newborn care unit and were holding 41.6%. In these study respondents who were having 5-10 years of experience show a significant co-relation with knowledge score obtained.
5. In the present study mostly respondents were married and having a percentage of 83.3%.
6. 73.3% respondents were belonging to nuclear family and this variable has no significance with the knowledge of staffnurses.
7. 50% respondents were having only 1 child and those who were having 3 or more than 3 children they showed a significant relationship with the obtained knowledge score.

8. Major respondents were working in the hospital where admission was more than 50 patients monthly.
9. 43.3% respondents were having attended more than 3 workshops and CNE and those who have attended more than 6 workshops were significantly more knowledge.

Table 1: Knowledge Score of Participants- Descriptive Statistics

Aspects	Mean	Standard Deviation	Median	Standard Error
Knowledge of Staff nurses on newborn care during birth	6.867	1.589	7	0.205
Knowledge of Staff nurses on newborn care after birth	8.983	1.610	9	0.208



		MEAN	STANDARD DEVIATION	MEDIAN	STANDARD ERROR
KNOWLEDGE ON NEWBORN CARE JUST AFTER BIRTH	0	8.983	1.61	9	0.208
KNOWLEDGE ON NEWBORN CARE DURING BIRTH	0	6.867	1.589	7	0.205

Fig. 1:

Mean knowledge of participants about Newborn care during birth is found to be less than mean knowledge score of participants about Newborn care just after birth which is 6.867 and 8.983 resp. with a standard deviation of 1.589 and 1.01. Calculated Median of knowledge score 7 and 9.standard error observed in the study is negligible with a value of 0.205 and 0.208.

Implications of The Study

Findings of the study have implications in following areas-

Nursing Education

1. Guidelines given by neonatology forum can formulated in nursing curriculum.
2. Evidence based practice can be generated through more researches.
3. Competency based approach for teaching the students can be utilized for integration of newborn care knowledge and practices.
4. Nursing students should impart the knowledge on facility based newborn care to trained dais, skilled birth attendants.

Maternity and Child Care Nursing

- Competency based knowledge development of caregiver.
- Training on FBNC can be a major step towards decreasing MMR, IMR.
- Economic loss during hospital emergency can be overcome by FBNC workshop, seminar etc.
- Adequate scientific knowledge can be disseminated.

Nursing Research

1. Extensive research studies can be undertaken in different fields to quantify the magnitude of deficiency of knowledge on FBNC.
2. Participative research regarding FBNC will ensure direct involvement in MCH program.
3. Research can address the 'at risk' issues causes and management of sick newborns.
4. Evidence based practices can be identified while research on FBNC.

Nursing Administration

a. Set up of NICU can be managed by keeping in mind FBNC.
b. Equipment supply and material management can be extensively improved in newborn care units.
c. Simulation lab. Can be setup in hospital and educational institutes.

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Effectiveness of Coconut Oil Massage on Gain in Weight among Low Birth Weight Babies

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Abstract

WHO estimated that globally about 17 % of all live births are low birth weight babies. The incidence of low birth weight in India is 30-40% of all births [3]. Out of this 8-10 % are preterm and 20-30% is small for date. Low birth weight & prematurity are major contributor to infant mortality rate in India. These babies have major physiological handicaps and, therefore, are ill equipped for normal life Expert and skilled care is required for these babies to have hope for normal life (Singh, Meharban. 2004). *Aim:* "A study to assess the effectiveness of coconut oil massage in Low birth weight babies in terms of gain in weight in selected areas of Bhilai, Chhattisgarh". *Results:* The mean Post test weight score (3317) was apparently higher than the Pre test weight score (3087). The mean difference (230), S.D. (±77.15) and computed "t" value (13.30) at the level of 0.001 showed that highly significant difference between the pre test and post test weight scores of experimental group. Findings of unpaired t test reveals that 't' value for mean gain score of experimental and control group for weight (t =1.05) at the level of 0.001 shows that there is no significant difference between experimental and control group in terms of gain in weight. *Conclusion*: The present study shows significant increase in weight of low birth weight babies after coconut oil massage in experimental group than control group. Thus it is concluded that the coconut oil massage was an effective intervention in improving the weight of low birth weight babies.

Keywords: Coconut Oil Massage; Weight.

Introduction

Preterm Babies are those who are born before the end of 37 weeks of gestation and whose rate of intrauterine growth was normal. They are small only because labour began the end of 37 weeks. They weighs between 10^{th}-90^{th} percentiles of the mean weight for age (Parthasarathy A. 2006).

WHO estimated that globally about 17% of all live births are low birth weight babies. The incidence of low birth weight in India is 30-40% of all births [3]. Out of this 8-10% are preterm and 20-30% is small for date. Low birth weight & prematurity are major contributor to infant mortality rate in India. These babies have major physiological handicaps and, therefore, are ill equipped for normal life Expert and skilled care is required for these babies to have hope for normal life (Singh, Meharban. 2004).

Oakley (1996) conducted a 7 years follow up study to find out the frequency of low birth weight baby in small mothers and low weight mothers she found that maximum women have a history of at least one low birth weight baby (Oakley, A. Hickey.1996) .There is emerging evidence that low birth weight or growth retarded neonates are more prone to manifested diabetes mellitus hypertension and coronary artery disease in later life. Low birth weight is a major determinant or perinatal illness, disability & death. It accounts for the vast majority & more than

50%of long term neurologic morbidity such as cerebral palsy (Zimmer Gembuck M. & Hefland, m. 1996).

Tiffany Field, Miguel Diego–and Maria Hernandez-Reif (2009) conducted study on Preterm infant massage therapy research: A review. Massage therapy has led to weight gain in preterm infants when moderate pressure massage was provided. The use of oils including coconut oil and safflower oil enhanced the average weight gain, and the transcutaneous absorption of oil also increased triglycerides. The weight gain was associated with shorter hospital stays and, thereby, significant hospital cost savings. Hence infant massage therapy helps in improving the weight of preterm babies.

Statement of Problem

A study to assess the effectiveness of coconut oil massage in Low birth weight babies in terms of gain in weight in selected areas of Bhilai, Chhattisgarh.

Objectives

1. To assess the pre-test score in terms of weight of preterm, low birth weight babies.
2. To implement coconut oil massage to the preterm Low birth weight babies of experimental group.
3. To assess the post-test score in terms of weight of preterm, low birth weight babies.
4. To assess the effectiveness of coconut oil massages in terms of weight in babies of experimental group.
5. To assess the effectiveness of coconut oil massages by comparing pre-test and post-test score in terms of weight in preterm Low birth weight babies of both experimental and control group.

Hypotheses

- H1: there will be significant difference between the pre and post mean score of gain in weight among Low birth weight babies of experimental group.
- H2: there will be significant difference between mean gain score in terms of weight among Low birth weight babies of experimental group and control group.

Methodology

Quantitative approach with quasi experimental design with non randomized control group design was for this study. The conceptual framework of the present study is based on Faye Glenn Abedellah's theory. An observation checklist was developed and weighing machine was used by the investigator for data collection. 20 samples for experimental group and 20 samples for control group were selected by convenience sampling. Data was collected from selected urban areas in Bhilai, Chhattisgarh.

Method of Data Collection

The subjects were collected from the prefixed setting. The weight was assessed by the weighing machine and rating scale. The coconut oil massage was given to the low birth babies for seven days and the frequency was two times a day i.e.; morning and evening. On the eighth day, again the low birth weight babies were assessed with the same tool to assess the gain in weight. One subject was assessed at a time.

Result and Discussion

1. Findings of the paired t test reveals that 't' value of pre test and post test weight score of experimental group is (t 19 = 13.30, $p<0.001$) which shows that there is highly significant difference between pre test and post test weight score of experimental group in terms of gain in weight (Table 1).
2. Findings of unpaired "t" test reveals the 't' value for mean gain score of experimental and control group for weight (t=1.05) at $p<0.001$ which shows that there is no significant difference between experimental and control group in terms of gain in weight.

Table 1: Mean, Mean difference, Standard Deviation (S.D.) and "t" value of pre and Post test weight scores

Weight scores	Mean Score	Mean difference	S.D.	DF	't' value
Pre test	3087	230	±77.15	19	13.30***
Post test	3317				HS

Conclusion

The study result concluded that,

- Coconut oil massage was an effective intervention in improving the weight, of low birth weight babies.
- There was a significant increase in weight of low birth weight babies after coconut oil massage in experimental group than control group.

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Original Research Article

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Knowledge Regarding Care of Children with Primary Tuberculosis among Mothers of Underfive Children

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Abstract

Primary tuberculosis is a bacterial infection caused by mycobacterium tuberculosis, one of the factors contributing to child mortality. Mother is an important primary care provider and therefore her education and access to information on care of children with primary tuberculosis will help her to provide adequate care and prevent complications. *Aim:* The aim of the study was to evaluate the effectiveness of structured teaching programme on the care of children with primary tuberculosis among mothers of under five children. *Settings and Design:* The study was conducted at K.C. General Hospital at Bangalore. *Materials and Methods:* An evaluative research with pre-experimental design with pretest and posttest was used for the study. The sample comprised of 100 mothers of underfive children was selected by using convenient sampling technique. Data was collected by using a structured interview schedule and analyzed by using descriptive and inferential statistics. *Result:* Knowledge score of mothers regarding care of children with primary tuberculosis showed that in the pretest (34.67%), whereas post-test score (80.03%). The mean difference between the posttest and pretest knowledge score was found to be significant ($p< 0.001$) *Conclusion:* The structured teaching programme on care of children with primary tuberculosis was highly effective in improving the knowledge of mothers regarding care of primary tuberculosis.

Keywords: Primary Tuberculosis; Under Five Children; Teaching Programme.

Introduction

Children assured of their mother's care, nothing is more important for children than caring parents. But for one family, health problems coupled with a lack of insurance threatened a mother's ability to care for her children. "Primary TB sometimes called primary complex, may be defined as bacterial infection caused by Mycobacterium Tubercle bacilli characterized by granuloma formation in infected tissues and by cell-mediated hypersensitivity [1].

Natural history of TB is complex. Primary infection, the initial phase, occurs in people without specific immunity, generally normal children and adults who have not previously been exposed to mycobacterium tuberculosis. The initial infection can occur at any time during childhood. Primary TB develops within five years of the initial infection, which stimulates specific immunity [2]. Mothers play a vital role in keeping their children healthy by sustaining their physical needs, giving them sufficient care, emotional support and providing them time for learning. They need to think about their child's health all the time and not only when the time their child is ill or sick. This means that all facets of preventive care and medical treatment must be taken into consideration.

Tuberculosis infection and disease among children are much more prevalent in developing

countries. It is estimated that in developing countries the annual risk of TB infection in children is 2-5% about 5% of those infected are likely to develop disease in the 1st year after infection and the remaining 5% during life time, nearly 8-20% of the deaths caused by tuberculosis occur in children. Approximately 40% of infected children less than 1 year of age if left untreated develop radiologically significant lymphadenopathy compared with 24% of children between 1-10 years and 16% of children 11-15 years of age in Indian over 100,000 children die from TB every year [3].

India has 38 million TB children at any time it estimates 3% of new cases till date 6.7 million children in India have received DOTS treatment thus averting more than 1.22 million deaths occur over last 10 years, 26 million children have been placed on effective TB treatment globally. But the disease still kills 4400 people every day. Below 5 years the annual incidence of infection is .8% the prevalence of infection is 2.8% [4].

According to National tuberculosis control Centre report in India today 2 deaths occur every three minutes from TB. But these deaths can be prevented, with proper care and treatment [5]. The infants are higher risk. The risk drops but remains significantly high in second year. It reaches its lowest level in children infected between 5 and 10 years of age. The other factors which determine the progress is HIV infection and degree of malnutrition, 95% of children who progress from infection to disease do so within 12 months. Hence, it is prudent to categorize children less than 3 years as high risk category [6].

Annual National Conference of the Indian Academy of Pediatrics, there was a report on children in contact with adultspulmonary TB, among 100 such children, Mantoux test was positive in 27% and BCG test was positive in 72%, chest X-ray taken in those positive in either test showed signs of TB in 55 children, half among BCG-vaccinated and half in unvaccinated children [7]. Tuberculosis remains one of the major disease affecting children throughout the world. Although the exact number of annual cases of TB is unknown, the WHO has estimated approximately 1 million new cases and 400000 deaths per year in children due to TB. Many of these cases go undiagnosed and untreated, many of these children could be salvaged if there were improvements in diagnosis and treatment available for children [8].

Materials and Methods

Objectives:

- To assess the pretest and posttest knowledge of primary TB among mothers of under five children
- To assess the effectiveness of STP on knowledge regarding care of children with primary TB
- To associate the knowledge with demographic variables such as age, education etc.

Research Design:

In the present study, pre experimental one group pretest and posttest design was adopted to assess the effectiveness of STP on knowledge regarding care of children with primary TB among mothers of under five children.

Variables:

STP regarding primary TB is the independent variable and knowledge of mothers of under five children is the dependent variable.

Sample and Sampling Technique:

Hundred (100) mothers of under five children (who fulfill the inclusion criteria) whoever admitted their children in K.C general hospital at Bangalore. In this present study non-probability convenient sampling method was used to select the sample.

Criteria for Selection of the Sample:

Inclusion Criteria

The mothers of under five children

- Whoever admitted their children in K.C general hospital at Bangalore
- Who are willing to participate
- Who are available during data collection

Exclusion Criteria

- Mothers with children above 6 years of age
- Mothers who are not available at the time of data collection

Development of the Data Collection Instrument:

A structured closed ended questionnaire was used during data collection and developed based on the objectives of the study and also reviewed related literature for the preparation of tool.

Description of the Tool:

The instrument used for the data collection was structured questionnaire, which consists of 3 sections.

Section I: demographic profile

Section II: A questionnaire to assess the level of knowledge on primary TB

Section III: STP on primary TB

Score Interpretation for Knowledge:

50&below - Inadequate

51-75% - Moderately Adequate

76-100% - Adequate

Method of Data Collection:

Written permission was obtained from the significant hospital authority for conducting the study and also formal permission taken from the university. Informed consent was obtained from the subject of the study after explaining about the purpose of the study and assuring confidentiality of collected data. There was no ethical issue confronted while conducting study. Mothers were made to feel comfortable and relaxed, a separate place was selected for the interview and privacy was maintained. A pretest questionnaire on knowledge regarding primary TB was administered for 20- 30 minutes. The STP was given with using handmade flash cards. Teaching and discussion was lasts for a period of 50 minutes. Certain points were repeated for better understanding and doubts were cleared. The posttest was conducted by using the same tool to assess the effectiveness of STP.

Results and Discussion

In the pretest (73%) of mothers had inadequate knowledge and (27%) of mothers had moderately adequate knowledge on primary TB. Whereas in posttest (30%) of the mothers had moderately adequate knowledge and (70%) of mothers had adequate knowledge on care of children with primary TB. The overall mean percentage of pretest was (34.67%) whereas in posttest the mean percentage of score was (80.03%) and the difference between pre and posttest mean score was (45.36%) revealing the effectiveness of STP.

The highest difference in mean percentage between pre and posttest score effectiveness was (46.60%) for the area of signs and symptoms and the lowest mean difference of (44.07%) is observed for the area of management and preventive measures.

Group	N	Mean	SD	Mean change	t value	p value
Pretest	100	10.40	3.79	13.6	29.28	<0.001(s)
Posttest	100	24.01	3.59			

S-significant

In the posttest mothers scores high mean value (24.01) than in pretest (10.40). Thus the difference in the level of the knowledge was confirmed by the paired 't' test value (29.28), which was found significant (p- value < 0.001 levels). Hence the mothers in posttest had more knowledge regarding the primary TB after structured teaching programme. From the analysis the study concluded that there is significant relationship between the knowledge of mothers after the implementation of STP on primary TB and selected demographic variables such as age, education, occupation etc.

Conclusion

The present study assessed the knowledge of mothers regarding care of children with primary tuberculosis and found that there was significant improvement of knowledge among mothers on management and preventive aspects of primary TB. So the study concluded that the structured teaching programme was effective in improving the knowledge of mothers regarding primary tuberculosis.

Acknowledgement

Nil

Conflict of Interest

Nil

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Review Article

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Music Therapy in Caring for Children
Music can change the world because it can change the people - By Bono

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Abstract

Music Therapy is the clinical and evidence-based use of music to address the needs of patients and families within a therapeutic relationship. It is an established health profession in which music is used within a therapeutic relationship to address physical, emotional, cognitive, and social needs of individuals. After assessing the strengths and needs of each client, the qualified music therapist provides the indicated treatment including creating, singing, moving to, and/or listening to music. The review found some positive effects of music on anxiety, pain, mood, quality of life, heart rate, respiratory rate, and blood pressure and help patient with cancer. Music has mental, physical and emotional effect. Goal of music therapy is to calm a child's fear and anxiety, easing a parent's distress, allowing patients and families to express their feelings and reducing patient's level of pain etc. Conditions like grief, chronic Pain, Autism, Schizophrenia, Alzheimer's Disease, dementia and heart Disease can get benefit from music therapy. Music therapy is used in many settings, including schools, rehabilitation centers, hospitals, hospices, nursing homes, community centers, and sometimes even in the home. Music therapy is used in many settings, including schools, rehabilitation centers, hospitals, hospices, nursing homes, community centers, and sometimes even in the home. Music therapy has two types live and recorded music it can be implemented in active or passive form. Some of the techniques used to achieve this are singing, listening, instrumental music, composition, creative movement, guided imagery, and other methods as appropriate. Present review was undertaken to know the origin of visual imagery technique, existing practices/situation/knowledge/attitude, existing problems/ shortcoming, strategies to improve the situation/minimize or solve problems technique and nursing implications for music therapy.

Keywords: Music Therapy; ALzhemer's Disease; Schizophrenia; Dementia; Autism etc.

Introduction and Need of the Topic

Hospitalization can be frightening for children and families who may feel that they lack control in these unfamiliar surroundings [1,2]. Children facing terminal illness and other chronic illness, undergoing surgeries are supported with music therapy interventions that are both developmentally appropriate as well as age appropriate. Because music therapy is a powerful, nonthreatening and non-invasive approach, and unique outcomes are possible. Music therapy can help a child manage pain and stressful situations and provide opportunities for socialization, self-expression and communication. Music therapy supports siblings, parents and extended family members throughout the child's illness and during the grief journey [3].

- Music therapy is currently identified as an emerging intervention by the National Autism Center (2015). Music therapy services for young children with ASD (autism spectrum disorder) are very effective for improving communication, interpersonal skills, personal responsibility, and play (Whipple, 2012) [4].
- Music therapy interventions may elicit joint attention (Kalas, 2012) [5]; enhance auditory processing, other sensory-motor, perceptual/ motor, or gross/fine motor skills (LaGasse & Hardy, 2013); and identify and appropriately express emotions (Katagiri, 2009) [6].
- Music therapy interventions based on family centered practice may increase social engagement in the home environment and community (Thompson, McFerran, & Gold, 2013) [7].
- A RCT published in the Journal of the American Medical Association (2013) found that children admitted to the emergency department who listened to music during routine procedures showed less distress and reported lower pain scores than those who didn't listen to music. Half of them were Health care providers reported that it was easier to insert the IV line in children who were listening to the music; health providers also reported more satisfaction with the placement compared to those who did not listen to music [8].
- A 2011 review published in the Cochrane libraries found music therapy and music medicine interventions can help cancer patients. The review found some positive effects of music on anxiety, pain, mood, quality of life, heart rate, respiratory rate, and blood pressure [8].
- Another Cochrane review published in 2009 looked for five studies measuring whether music therapy is useful in treating depression. Four of them concluded that patients exposed to music therapy had a greater reduction in symptoms compared to those who didn't listen to music [8].

Review from Literature on Music Therapy

Music therapy is a technique of complementary medicine that uses music prescribed in a skilled manner by trained therapists. Programs are designed to help patients overcome physical, emotional, intellectual, and social challenges. Applications range from improving the well being of geriatric patients in nursing homes to lowering the stress level and pain of women in labor.

• *Origin of Music Therapy*

Music has been used throughout human history to express and affect human emotion. It can change mood, have stimulant or sedative effects, and alter physiologic processes such as heart rate and breathing. The ancient Greeks expressed thoughts about music having healing effects. Many cultures are steeped in musical traditions.

Music therapy formalized as a complementary healing practice in the 20th century, after musicians went to play for World War I and World War II veterans at hospitals across the United States. Musicians were hired to continue working in the hospitals. Degrees in music therapy became available in the late 1940s, and in 1950, the first professional association of music therapists was formed in the United States. The National Association of Music Therapy merged with the American Association of Music Therapy in 1998 to become the American Music Therapy Association [9].

• *Benefits of Music Therapy*

Music can be beneficial for anyone. Although it can be used therapeutically for people who have physical, emotional, social, or cognitive deficits, even those who are healthy can use music to relax, reduce stress, improve mood, or to accompany exercise. There are no potentially harmful or toxic effects.

a. *Physical Effects*: Brain function physically changes in response to music. The rhythm can guide the body into breathing in slower, deeper patterns that have a calming effect. Heart rate and blood pressure are also responsive to the types of music that are listened to. The speed of the heartbeat tends to speed or slow depending on the volume and speed of the auditory stimulus. Louder and faster noises tend to raise both heart rate and blood pressure; slower, softer, and more regular tones produce the opposite result. Music can also relieve muscle tension and improve motor skills. It is often used to help rebuild physical patterning skills in rehabilitation clinics. Levels of endorphins, natural pain relievers, are increased while listening to music, and levels of stress hormones are decreased. This latter effect may partially explain the ability of music to improve immune function. A 1993 study at Michigan State University showed that even 15 minutes of exposure to music could increase interleukin-1 levels, a consequence which also heightens immunity.

b. *Mental Effects*: Depending on the type and style of sound, music can either sharpen mental acuity or assist in relaxation. Memory and learning can be enhanced, and this used with good results in children with learning disabilities. This effect may also be partially due to increased concentration that many people have while listening to music. Better productivity is another outcome of an improved ability to concentrate. The term "Mozart effect" was coined after a study showed that college students performed better on math problems when listening to classical music.

c. *Emotional Effects*: The ability of music to influence human emotion is well known, and is used extensively by moviemakers. A variety of musical moods may be used to create feelings of calmness, tension, excitement, or romance. Lullabies have long been popular for soothing babies to sleep. Music can also be used to express emotion nonverbally, which can be a very valuable therapeutic tool in some settings [9].

• *Goals of Music Therapy*

Music is used to form a relationship between the therapist and the patient. The music therapist sets goals on an individual basis, depending on the reasons for treatment, and selects specific activities and exercises to help the patient progress. Music therapists help their patients achieve a number of goals through music, including

- Calming a child's fear and anxiety
- Easing a parent's distress
- Allowing patients and families to express their feelings
- Reducing patient's level of pain
- Providing sensory stimulation for patients
- Providing support for siblings
- Development of communication, cognitive, motor, emotional, and social skills.
- Improvement of communication, academic strengths, attention span, and motor skills [13].

• *Types of Music Therapy*

Roughly two types of music interventions are distinguished: live music therapy and recorded music.

a. *In Live Music Therapy* a trained music therapist plays music and applies various therapeutic techniques to reach a therapeutic goal. One of these techniques is known as music entrainment, in which the music therapist first uses music to match the patient's physiological and emotional states and then gradually changes the music to modify the patient's state.

b. Recorded Music on the other hand, implies listening to pre-recorded music selected by a music therapist, or by patients themselves provided they are old enough to do so.

In general, musical therapy utilizes the power of music to interact with human emotions and affect wellbeing, although there are several different types recognized in the world today.

• *Qualification and Training for Music Therapist.*

Like all therapists, becoming a music therapist requires schooling. A bachelor's degree in Music Therapy is needed, followed by a master's degree in Music Therapy. Although it is not required, it may also prudent to become certified as a recreational therapist or a rehabilitation nurse in order to increase your chances of employment in a wide range of facilities.

Music Therapists may be employed in the following milieus:

- Psychiatric hospitals
- Mental health facilities
- Rehabilitation facilities
- Retirement homes
- Senior centers
- Acute care hospitals [18].

• *Settings for Music Therapy*

Music therapy is used in many settings, including schools, rehabilitation centers, hospitals, hospices, nursing homes, community centers, and sometimes even in the home [9].

• *Music and Children*

The sensory stimulation and playful nature of music can help to develop a child's ability to express emotion, communicate, and develop rhythmic movement. There is also some evidence to show that speech and language skills can be improved through the stimulation of both hemispheres of the brain. Just as with adults, appropriately selected music can decrease stress, anxiety, and pain. Music therapy in a hospital

environment with those who are sick, preparing for surgery, or recovering postoperatively is appropriate and beneficial. Children can also experience improved self-esteem through musical activities that allow them to succeed.

Newborns may enjoy even greater benefits from music. Premature infants experience more rapid weight gain and an earlier discharge from the hospital than their peers who are not exposed to music. There is also anecdotal evidence of improved cognitive function in premature infants from listening to music.

Existing Practices / Situation/ Knowledge/ Attitude

Music is the universal language. It can set the tone, create an atmosphere, change anyone's mood, and be a helpful remedy and therapeutic intervention for certain diagnoses and conditions.

According to the American Music Therapy Association, music therapy is "the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program." In short, it is used to treat patients of all ages and numerous symptoms in relation to physical pain, emotional and spiritual well-being, and cognitive health.

• *Condition Requires Music Therapy*

Studies have shown that music therapy can reduce pain, depression, anxiety, and stress. While music therapy does treat these conditions, it can also be a helpful adjunct therapy for:

- Grief
- Chronic Pain
- Autism
- Schizophrenia
- Alzheimer's Disease
- Dementia
- Heart Disease

• *Techniques used for Music Therapy*

Some of the techniques used to achieve this are singing, listening, instrumental music, composition, creative movement, guided imagery, and other methods as appropriate. Other disciplines may be integrated as well, such as dance, art, and psychology. Patients may develop musical abilities as a result of therapy, but this is not a major concern. The primary aim is to improve the patient's ability to function.

a. Singing develops articulation, rhythm, and breath control. Remembering lyrics and melody is an exercise in sequencing for stroke victims and others who may be intellectually impaired.
b. Singing and discussion is a similar method, which is used with some patient populations to encourage dialogue.
c. Listening is an excellent way to practice attending and remembering. It may also make the patient aware of memories and emotions that need to be acknowledged and perhaps talked about.
d. Learning to play an instrument is an excellent musical activity to develop motor skills in individuals with developmental delays, brain injuries, or other motor impairment. It is also an exercise in impulse control and group cooperation.
e. Composition of words and music is one avenue available to assist the patient in working through fears and negative feelings.
f. Creative movement is another activity that can help to improve coordination, as well as strength, balance, and gait.
g. Guided Imagery and Music (GIM) is a very popular technique developed by music therapist Helen Bonny.
h. Improvisation facilitates the nonverbal expression of emotion. It encourages socialization and communication about feelings as well.
i. Listening to music is used as a path to invoke emotions, picture, and symbols from the patient. This is a bridge to the exploration and expression of feelings [9].

• *Implementation of Music Therapy*

Music therapy can be implemented as an active or passive intervention.

a. Active Music Therapy involves the patient and the music therapist engaging in an interactive process through playing, singing and listening to music. The therapist creates a dynamic environment and encourages the patient to actively participate in the intervention session.

b. Passive Music Therapy involves having the patient listen to self-selected or prescribed pieces of music. Passive music therapy can be

initiated by health care professionals independently, that is, without the assistance of accredited music therapists. The use of passive music therapy is most often investigated in the healthcare context, and it has been established as an intervention that can be effectively implemented by different health care professionals, including nurses, in clinical practice or by patients in various settings.

• *Duration and Method of Delivering Music*

Studies shows that the duration of the music intervention varied between 5 minutes to unspecified time intervals when the intervention was applied during the entire time of the surgical procedure. However, The timing for delivering music therapy differed across studies and the most common time interval was 15-30 minutes per session. The majority of studies administered the intervention using headphones whereas few studies reported the use of a loudspeaker [10].

• *How Music Can Address Anxiety*

Studies have shown that music not only engages us on an emotional level, but also on a physical level. Music therapy has been used successfully with autistic children as well as adults with communication disorders, offering them alternative methods to communicate. Additionally, music can provide life-long skills for stress and anger management, and personal coping skills for feelings of aggression or frustration. But it isn't necessary for we to have an advanced degree or years of study to be able to apply some simple principles to reduce the stress and anxiety that may be present in your child. We can use music to:

a. Encourage muscle relaxation by using harmony, tempo, and rhythm to recognize and relieve tension.
b. Teach deep breathing techniques using music as a tool or background.
c. Use positive self-talk statements enhanced with rhythmic or melodic patterns to reinforce positive self image.

The point of all these exercises is to help child adapt and internalize strategies so they can cope, whether they are dealing with anger, fear, depression, inappropriate behavior, or a poor self image. Giving them tools to use in their youth will help them grow into confident and capable adults who will be able to handle the inevitable stress and anxiety that is a by-product of life.

• *Response to Music Therapy*

Music affects the body in a number of ways. A person's response to music is dependent on a unique combination of physiological and psychological reactions.

a. Physiologically, music has been shown to have significant effects on listeners by decreasing respiratory rate, heart rate and blood pressure.
b. Psychologically, music can reduce anxiety, agitation and stress.

Letting child listen to their favorite music has measurable physical effects. It encourages the production of dopamine, which is also know as the "feel good" hormone [11].

• *Functional Mechanism of Music Therapy*

- There is scientific research to back up the idea that music has healing properties.
- One study showed music's anti-anxiety properties, another found music was associated with higher levels of immunoglobin A, an antibody linked to immunity [12].
- The brain's reward center responds to music — a brain structure called the striatum releases the chemical dopamine, associated with pleasure.
- Music therapy can activate the prefrontal and limbic areas of the brain, the same areas that are involved in pain perception, thereby modulating the emotional component of pain perception.
- Music therapy is proposed to function through CNS modulation, whereby music stimulates descending nerve impulses traveling from the brain to the spinal cord, closes the neural gate and inhibits the effects of nociceptive fibers. Music therapy can modify pain perception at the neural gate through its effect on mental state and emotion [13].

• *Music Therapist and ASD Children*

Music therapists accept referrals & provide assessments and interventions to individuals with ASD & their families in public schools, family's homes, private practice settings, preschools/ daycares, music therapy agencies, early intervention programs, treatment centers, support groups, hospitals, & various venues within the community. The role of the music therapist may be as a provider of direct services (i.e., via individual & group

sessions), as a coach to parents, or as a consultant to family members/caregivers, educators, or team members [14].

"Music Therapy does many things to improve the quality of end-of-life care. Music is a universal bridge between people and their experiences and it is such a tender, healing moment person can be embraced by music. Music therapy provides refreshment along the way that has the power to revitalize, remind and recover. The employees and volunteers who are called to do hospice work are uniquely talented and challenged. We are always seeking inventive resources so that there is never a time when we have to say that there is nothing more that we can do. It is a great resource for our employees and volunteers to have the option of music therapy to offer patients and families. No matter how difficult that case is or how far away the sick person seems to be, music therapy is almost always a resource that helps our staff and volunteers appreciate the dignity and story of the person we're caring for [15]."

Existing Problems/ Shortcomings on Music Therapy

- Unfortunately, music can also cause some serious harm in the form of tinnitus or other permanent hearing loss/damage. Tinnitus can result from listening to music at high volumes or amplitudes. Tinnitus is a buzzing in the ears that ranges from slight to severe. Tinnitus is a highly subjective condition; some patients claim to perceive sounds of animals or even popular songs. Music has also been known to cause epileptic seizures, often resulting in psychiatric complications. In a book devoted to the studying of these rare cases, Oliver Sacks, a professor of clinical neurology at Columbia University, writes of a woman who could not listen to a certain popular song for more than half a minute without succumbing to violent convulsions.
- The science of music therapy, with its roots in the first half of the twentieth century, is still relatively young. With the proliferation of case studies, music is starting to make a comeback in the world of medicine, an area that has been relatively uncaring towards music therapy because of its seemingly mystical beginnings [17].
- There is little disagreement among physicians that music can be of some benefit for patients, although the extent of its effects on physical well-being is not as well acknowledged in the medical community. Acceptance of music therapy as an adjunctive treatment modality is increasing, however, due to the growing diversity of patient populations receiving music therapy. Research has shown that listening to music can decrease anxiety, pain, and recovery time.
- Despite its documented benefits, there is limited knowledge of the extent to which music therapy is implemented in day-to-day practice. Empirical evidence supports the effectiveness of music therapy in alleviating anxiety and pain in different patient populations. However, it remains unclear if and to what extent health care professionals are using this intervention in practice for the management of anxiety and pain, which is an issue of knowledge translation. Specifically, it is unknown if nurses are aware of the beneficial effects of music therapy and provide it to manage anxiety and pain experienced by patients in different settings.
- Many people believe that music therapy can only help those with musical ability; this is a common misconception. Music therapy has been shown to stimulate many of the same parts of the brain in musical as well as in nonmusical patients. Another common misconception is that the only style of music used in therapy is classical music. The music a therapist uses with a patient is highly dependent on the patient's preferences, circumstances and goals.
- Music therapy has been shown to be efficacious in experimental studies. However, there is little empirical research knowledge about what elements of music therapy influence its effectiveness in clinical practice [16-17].
- A number of studies have examined evidence or research use in nursing and have found that a significant gap exists between the implications of research evidence and its adoption into clinical practice as may be the case for music therapy. Although research supports the effectiveness of music therapy as an effective intervention in managing pain and anxiety, it remains unclear if nurses use music therapy in clinical practice. Thus, the use of music [18].

Strategies to Improve the Situation / Minimize or Solve Problems

- Clients with active hallucinations or psychosis should not be presented with highly evocative music (songs that may stimulate imaginable or sensory-based responses).

- Some clients in high arousal states or acutely depressed may be sound sensitive – with or without aggravated tinnitus symptoms. Therefore, volume levels should be relatively low.
- Clients with difficulty in self-regulation and/ or experiencing some level of dissociative symptomology may be easily aroused by highly evocative music. While this may be useful in a controlled therapeutic setting, caution is advised in unsupervised settings (AMTA).
- Continued research and advocacy efforts, as well as collaborations with lobbyists, business consultants, and credentialing/licensure experts to develop progressive strategies, will be crucial for global development and sustainability of the field (music therapy).

Nursing Implications for Music Therapy

- Nurses must learn about how to apply music therapy in clinical practice for the management of physical and psychological (e.g. pain and anxiety) symptoms.
- The client must have access to the relevant information about the risks, benefits and effects of the treatment, and other available options, to make an informed choice.
- Nurses have the authority to perform procedures that fall within one of the controlled acts authorized to nursing, or procedures that are not considered controlled acts. When considering the appropriateness of performing an intervention, nurses should keep in mind the following factors:
    - Not all procedures that may cause harm are included in the controlled acts; and each nurse is accountable for her/his actions and for acting within the scope of nursing practice.
    - Consent from the client is required regardless if the therapy is requested by the client or proposed by a health care practitioner.
- Nursing and administrative authorities would make this decision. If the complementary therapy is not a recognized intervention, nurses may wish to advocate for it to be recognized.
- Nurses need the necessary assessment skills to carry out the ongoing assessment and evaluation of the effects of the therapy. The entire nursing process must be used as a basis for incorporating music therapy and visual imaginary technique into a plan of care.
- Nurses must be able to evaluate the effect of the complementary therapy on the overall health status of the client, and to recognize when additional skill, knowledge and expertise are required [19].

Conclusion

There is plenty of evidence to show that music therapy used in health care settings can help calm patients. And given there are no side effects associated to these therapy, it's certainly a treatment worth trying. Music therapy when combined with other modalities may be more effective than when presented alone, and that both can reduce the amount of pharmacological agents needed to control other physiological and psychological symptoms (e.g. pain and anxiety.). Greater understandings of the role these therapies in clinical disorders will help drive forward advances in both theory and treatment.

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