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A study to assess the effectiveness of aromatherapy on pain reduction in orthopedic patients admitted in selected hospital at Gonda

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Abstract
Aromatherapy is the treatment or prevention of disease by use of essential oils. Other stated uses include pain and anxiety reduction, enhancement of energy and short- term memory, relaxation, hair loss prevention, and reduction of eczema-induced itching. **4** Two basic mechanisms are offered to explain the purported effects. One is the influence of aroma on the brain, especially the limbic system through the olfactory system. The other is the direct pharmacological effects of the essential oils. **5**. The findings of this study have proved that the orthopedic patients have a remarkable reduction in the pain after aroma therapy. Thus, for the future outlook there is a need to implement aroma therapy as a part of pain management strategies.

Keywords: evaluate, effectiveness, aroma therapy, orthopedic patients

Introduction

Aromatherapy uses plant materials and aromatic plant oils, including essential oils, and other aroma compounds, with claims for improving psychological or physical well-being. It is offered as a complementary therapy or as a form of alternative medicine, the first meaning alongside standard treatments, the second instead of conventional, evidence-based treatments [3]. Aroma therapists, people who specialize in the practice of aromatherapy, utilize blends of therapeutic essential oils that can be used as topical application, massage, inhalation or water immersion. There is no good medical evidence that aromatherapy can either prevent or cure any disease. Placebo-controlled trials are difficult to design, as the point of aromatherapy is the smell of the products. There is some evidence that it is effective in combating postoperative nausea and vomiting [3].

Objectives of the study

1. To assess the pre aromatherapy pain level.
2. To assess the post aromatherapy pain level.
3. To compare the effectiveness of aromatherapy.
4. To find a significant difference between pre and post aromatherapy values.
5. To find a significant association between pretest aroma therapy with their socio demographic variables.

Hypothesis

H1: There is a significant difference between pre and post aromatherapy values.
H2: There is a significant association between pretest aromatherapy with their socio demographic variables.

Operational definition

1. **Effectiveness:** In this study it referred, the extent to which aromatherapy plays a role pain relief in clients of general orthopedic and trauma care wards, as ascertained by the changes observed when compared between pre and post aromatherapy.
2. **Aromatherapy:** It referred to the treatment using dry inhalation of the fragrance of lavender angustifolia essential oil on orthopedic clients.
3. **Orthopedic patients:** it referred to the persons who have been admitted in hospital with any type of fracture.

Research methodology

Research methodology is a systematic procedure in which the researcher states the initial identification of the problem to its final conclusions. It refers to the investigations and the way of obtaining, organizing and analyzing data. Methodology studies address the development, validation and evaluation of research tools or methods. This chapter includes research approach, research design, setting of the study, population sample, sample size, sampling technique, sampling criteria, instrument, validity and reliability, pilot study, method of data collection, plan for data analysis and interpretation and ethical implications in the study.

Research approach

Research approach is the basic procedure for conducting the study. In the analysis of data, the difference of the initial and the terminal measurement represents the effect of the independent

Variables. In view of the nature of the problem selected for the study and the objectives to be accomplished, an evaluative research approach was used for the present study.

Research design
Research design is an investigators overall plan for collecting and analyzing data, including specifications for enhancing the internal and external validity of the study. For the present study "one group pre-test post-test study design" is adopted.

Variables under study
A variable is a characteristic or attribute of a person or object that varies within the population under study.

Independent variable
The independent variable in this study is the Aroma therapy.

Dependent variable
The dependent variable in this study is the pain of orthopaedic patient.

Demographic variable/ Attribute variables
The demographic variables of this study include age, gender, and religion, and education, type of family and area of residence.

Settings of the study
The setting is a location where a study is conducted. The investigator selected S.C.P.M Hospital in Gonda as the setting for the present study. Because of feasibility the investigator has selected this area to conduct research study.

Population
The population refers to the entire set of individuals or objects having some common characteristics. Population of present study comprises of all orthopaedic patients visiting S.C.P.M Hospital of Gonda.

Sample and sample size
Sample is a subset of a population selected to participate in a research study. The samples for this research study are orthopaedic patients in S.C.P.M Hospital of Gonda. The sample size taken for this study is 50 orthopaedic patients.

Sampling technique
Sampling defines the process of selecting a group of people or other elements with which to conduct a study. In this study, non-probability purposive sampling technique is used for selecting the samples.

Criteria for sample selection
Inclusion criteria
1. The orthopedic patients who are interested to participate in this study.
2. The orthopedic patients who knows English and Hindi language.
3. The orthopedic patients who can attend the pre and post aromatherapy sections.

Exclusion criteria
1. The orthopedic patients who are all attended the same type of study earlier.
2. The orthopedic patients who are all not able to follow instructions.

Development of the tool
After an extensive review of literature, discussion with the guide and various experts in the field of Medical Surgical Nursing and based on investigators personal experience, the demographic profile was developed and to assess the pain Stanford Pain scale was used.

Description of the tool
In the present study the tool consist of two parts.

Tool consists of two parts.
Part-1: Demographic Profile
Part-2: Stanford pain scale

Part 1: Demographic data
This part consists of structured questionnaire to collect the demographic data. It consists of 06 items which includes age, gender, religion, education, area of residence and type of family.

Part 2: Pain scale
This part consists of Stanford pain scale to assess the pain level of orthopaedic patients before and after the aroma therapy.
Based the on the pain score rated by the patient, pan is classified into
- Minor pain (Scores 1-3)
- Moderate pain (Scores 4-6)
- Severe pain (Scores 7-10)

Content validity
Content validity refers to the degree to which an instrument measures what it is intended to measure.
The tool along with the statement of the problem, objectives, scoring key and criteria rating scale were submitted for validation to experts from the department of medical surgical nursing, physicians and statistician. Based on the expert's opinion, some of the items in demographic variables were modified and some of the questions have been deleted. Arrangement of the options was done in a proper way according to the suggestions given by the experts. The tool was presented and finalized by the research committee of S.C.P.M College of Nursing.

Reliability of the tool
Reliability is defined as the degree of consistency or dependability with which an instrument measures the attribute it is designed to measure. As the pain scale adopted for the study is a standard scale, the reliability of the scale is established and can be used for the assessment of pain.

Pilot study
After obtaining formal permission from the authorities, the pilot study was conducted.

The investigator selected 5 orthopaedic patients from the total population using purposive sampling technique. The pre-test was conducted by using demographic profile and pain scale followed by the administration of Aroma therapy. The post test was conducted after administering the aroma therapy, by using the same pain scale for evaluating the effectiveness of the aroma therapy in pain reduction.
The time taken for conducting pre-test and post-test was 10 minutes.

Data collection procedure
After obtaining formal permission from the concerned authorities, the pre-test was conducted by purposive sampling technique, the investigator gave self-introduction, explained the purpose of the study and the subjects willingness to participate in the study was ascertained.
The subjects were assured anonymity and confidentiality of information provided by them and a written informed consent was obtained. The data collection procedure was carried out for a period of one month.

Plan for data analysis
The data analysis and interpretation was planned to include descriptive and inferential statistics.

Descriptive Statistics
Description of demographic variables in terms of frequency and frequency percentage

Inferential Statistics
Non-parametric test: Chi-square (χ^2) test was used to study the association between pre-test pain level with selected demographic variable

Results
"Analysis is the process of organizing and synthesizing data in such a way that research questions can be answered and hypothesis tested".
The pain level assessed through Stanford pain scale of 50 orthopedic patients in S.C.P.M Hospital at Gonda. The present study was designed to assess the effectiveness of aroma therapy on pain reduction in orthopedic patients. The collected data were coded, tabulated, organized, analyzed and interpreted using descriptive and inferential statistics. The data has been analyzed and interpreted in the light of objectives and hypothesis of the study.

Organizations of findings
The data collected from the samples were organized, analyzed and presented under the following headings:
Section I: Description of sample characteristics
Section II: Assessment of pain level before and after administering aroma therapy.
Section III: Evaluating effectiveness of aroma therapy in pain reduction
Section IV: Association of Pre-test pain scores with selected demographic variables.

The result undoubtedly confirms that the Aroma therapy significantly was effective in reducing the pain among orthopaedic patients.

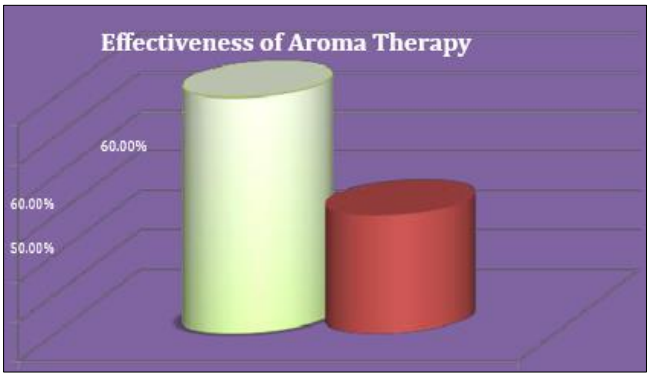

Fig 1: Effectiveness of aroma therapy

Discussion
The discussion brings the research report to closure. A well-developed discussion section "makes sense" of the research results. This is the most important section of any research report. The findings of the study have been discussed with reference to the objectives and hypothesis stated in the information and findings of the other studies.

The findings of the study have been discussed with reference to the objective and hypothesis.
Here this study evaluates the effectiveness of aroma therapy in pain reduction among orthopaedic patients in selected Hospitals of Gonda. A one group pre-test, post-test design was used to assess the effectiveness of aroma therapy in reducing pain among orthopaedic patients. The investigator utilized the purposive sampling technique to select the subjects. Pre-test was conducted prior to implementation of aroma therapy and post- test was conducted after aroma therapy, using a same pain scale as employed for pre- test.

The first objective of the study was to assess the pain level among orthopaedic patients.
The mean pain in the post test is 30% whereas the mean in the pre-test is 60%. The pain decreased in post-test when compared to pre-test.

The second objective was to evaluate the effectiveness of aroma therapy in reducing pain among orthopaedic patients.
The mean pain score is reduced in the post test. The mean in the post test is 30% whereas the mean in the pre-test is 60%. The mean reduction is 30%.
The standard deviation in pre-test is 2.145 and in reduced to 1.684 in post-test. Though it was seen that the post-test pain score was less than the pre-test pain score, it is essential to put it under statistical significance. So suitably the paired „t"-test was chosen and worked out. The calculated t-value is 21.56 which are highly significant.

The result undoubtedly confirms that the aroma therapy significantly was effective in reducing pain among orthopaedic patients.

The third objective was to determine the association between pre-test pains among orthopaedic patients with selected demographic variables.

The result of association between pre-test pain of orthopaedic patients and selected demographic variables are, the chi- square test was resulted to be significant at $p<0.05$, so there is a statistical association between age, gender and pre- test pain scores.

Conclusion

The study was conducted with the objective of assessing the effectiveness of aroma therapy in reducing pain among orthopaedic patients.

The following conclusions were drawn on the basis of the findings of the study.

1. Present study did found level of pain reduced among orthopaedic patients.
2. Present study did found no significant association between the p a i n scores among the orthopaedic patients and the demographic variables.

Nursing Implications

The findings of the study have implications in the field of nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice

Nursing service has a direct, significant impact on human health. The findings implies the need for clinical nurse to keep abreast with the pain by undergoing continuing education and in-service education and training to upgrade skills and learning and be well versed with newer advancements in diagnosis and management skills. The expanded role of a nurse emphasizes on those activities which promote health. Health promotion without the active involvement of community's doesn‟t bring about sustainable pain changes. Nurses in their educative role are in a better position to mould the health related behaviours. Health education can be imparted in wards, OPDs and in community settings through various methods like lectures, mass media, pamphlets, information booklet, self-instructional module etc. Any strategy which is simple, clear and attractive provides interest to the learner to follow the instructions safely. Nurses have to involve themselves in all areas of health care practices to help people lead a healthy lifestyle.

Nursing Education

To impact the pain of people, the nursing personal need to be equipped with adequate pain regarding Aroma therapy

Nursing Administration

Nurse administrators are the back bone for providing facilities to improve pain on health aspects. Post graduate nurses should take part in health administration. Nurse administrators can organize continuing nursing education and in service education programs to update the pain regarding Aroma therapy among orthopaedic patients.

The nursing administrator should take an initiative in creating health policy and developing protocols in providing education in promotion of health.

Nursing Research

It is essential to identify the need for assessing the pain to know the need for quality of health care services needed. Extensive research must be conducted in this area to assess the pain and use effective methods to reduce it. This study also brings about the fact that more studies used to be done at different setting, with culturally accepted education strategies.

Recommendation

On the basis of present study, the following recommendations are formed for future study:

1. A study can be replicated on a large population.
2. A future study can be conducted with more variables.
3. A study can be conducted by using experimental and control group.
4. A comparative study can be carried out on sample‟s pain.

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