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Evaluate the Effect of Self-Foot Reflexology on Stress among School Children at Selected Schools in Thalassery, Kerala

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Abstract

The study attempts to evaluate the effect of Self Foot Reflexology on stress among school children at selected schools in Thalassery. *Aiims:* The objectives of the study are to assess the level of stress among school children, evaluate the effect of self foot reflexology on stress among school children and to find the association between Stress and Selected Variables. *Settings and Design:* Quasi experimental approach with Non-equivalent Pretest Post design was used in the study. The study was carried out in selected Schools at Thalassery. The sample comprised of 128 school children studying in eighth and nineth classes, selected by Multi stage sampling. Pilot study was conducted in16 sample and the tools were found to be feasible. *Methods and Meterial*: The reliability of the rating scale to assess the level of stress was 0.845. Data collection was done from 22nd January to 20th of February 2013. Data was collected by administering a Questionnaire and rating scale before and after self foot reflexology. *Statistical analysis used:* Data were analyzed by descriptive and inferential statistics. *Results:* The results of this study showed that most of sample (51.56%) has mild stress whereas only 6.25 % have severe stress. About 42.18% of sample has moderate stress. The study reveals that there is significant reduction in stress after self foot reflexology (t_{126}=5.258 and t_{63}=4.841). A relationship between stress and selected variables like Income of family and stress Management Programs were noticed. *Conclusion*: The findings of this study support the need of self foot reflexology to help the school children to combat various stress situations in their daily life which will help them to be a healthy citizen.

Keywords: Stress; School Children; Self Foot Reflexology.

Introduction

It is easier to build strong children than to repair broken men.

Frederick Douglass

Stress is unavoidable situation can occur in all facets of life. Similarly stress is having an importance in natural part of development and adaptation to a changing environment. So the implications of stress among children can be far reaching and they learn to adjust with daily activities. Stress has a negative effect on physical, mental, and cognitive outcomes for children based on the severity. Stress is the situation where the individuals cannot cope with their own ability. In the present world stress among children are dangerously rising in alarming proportions due to pressure on their daily activities. All children cannot put up with the high levels of expectation of parents and the parents do not realize or accept that their children are under severe pressure.

Material and Methods

Research Approach

The research approach used in the study is quasi

experimental approach.

Research Design

Research design is the overall plan for addressing a research question, including specifications for enhancing the study's integrity [25]. The research design selected for the study is Nonequivalentpretestposttest experimental design.

O_1 X O_2

O O

Fig. 2: Schematic representation of study design

Key

O_1: Assessment of level of stress of experimental group.

O_2: Re assessment of level of stress of experimental group.

X: Self foot reflexology for 4 weeks.

O: Assessment of level of stress of control group.

Variables

Variables are quantities, properties or characteristics of persons, things or situations that can change or vary and are manipulated or measured in research [25].

In this study,

Independent Variable: Self foot reflexology.

Dependent Variable: Stress

Demographic Variables: Gender, Religion, Type of Family, Income of Family, Leisure time activities, Exposure to stress management programs.

Setting of the Study

The schools selected for the study are Vadakumbad Government Higher secondary school at Thalassery, Kavumbagham Government Higher secondary school at Thalassery, New Mahe MMHS, and AKG Higher School Pinarayi.

Population

Population is a group who possess specific attributes that a researcher is interested in studying[25]. In present study population was school children.

Sample and Sampling Technique

A finite subset of the population selected with the objective of investigating its properties is called a sample [25]. The sample of the study are 128 school children of selected schools at Thalassery who meet the inclusion criteria.

Sample Selection Criteria

The inclusion criteria of subjects in the study were:

- Children studying in 8th and 9th standards of High school classes.
- Children who are willing to participate in the study.
- Children who are available at the time of data collection procedure.

The Exclusion criterions of the subjects in the study were:

- Children with physical and mental disabilities.

Sampling Technique

In the study Multi stage sampling is used. In the present study investigator randomly selects schools in Thalassery and then select school children from selected schools. The school children are made into different strata's based on gender and the final selection of samples performed by simple random sampling from following schools namely GHSS Kavumbagham, AKG Pinarayi, Vadakumbad HSS, and New Mahe MMHSS.

Tools/Instruments

Development/Selection of Tool

Technique

The means of gathering data with the use of specific tools that are used in given methods are known as techniques of data collection.

In present study the technique is – self reporting. Self Reporting were used to assess personal variables and level of stress by using questionnaire and rating scale respectively.

The following steps were taken for the selection of items and preparation of tool.

- The investigator reviewed the research and non-research literature related to stress and various tools to assess stress among children and adults .Investigator visited schools and analyzed the

stress areas in school children .Formal discussions were conducted with nursing experts and suggestions were obtained from school teachers and Nursing experts.

Description of Tools

Tool 1- Questionnaire to Assess Personal Variables

This tool used to collect base line information. It consist of five items namely Gender, Type of family, income of family and leisure time activities.

Tool 2: Rating Scale to Assess Level of Stress

A blueprint is prepared based on two domains and distribution of items based on content areas. It included two domains interpretation and application. It had 7 interpretation items, 1 application.

Preparation of Rating Scale

The blueprint of items in the tool featuring the two domains, interpretation and application were formed. According to content area the items were spread in these two domains. The content areas included were; stress at home, school atmosphere/ infrastructure, stress related to academics, teacher-pupil relationship, peer relationship, physique, self-assessment, and stress related to future. Each response was scored 0, 1, 2, 3, and 4. It consists of total 40 items. It is a five point rating scale. Stress is categorized as No stress, mild stress, and moderate stress, severe and very severe stress.

Score

No stress - 0

Mild stress - 1-40

Moderate stress- 41-80

Severe stress - 81-120

Very severe stress- 121-160

Content Validity

The content validity of tool was obtained from seven experts, six from nursing field, one from teaching field and one from statistician. The modifications were made according to suggestions and instructions given by experts

Reliability

Reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to be measuring [25].

Reliability of the tool was calculated by using Test retest method and was conducted in 30 samples .The reliability was calculated by Karl Pearson correlation coefficient and the value is 0.845.

Intervention

Self foot reflexology was used as an intervention in this study. Self foot reflexology was taught to samples in experimental group. It is the technique of Self massage through the application of finger pressure on feet's for 15 -20 min for 3 days in a week for 4 weeks.

Pilot Study

Pilot study is defined as a small-scale version or trail run of the major study [25]. Pilot Study is conducted from 2nd to 18th December in selected High Schools in Thalassery. After obtaining written permission from the head of the institution and informed consent from parents, the tool will be administered to 16 school children who fulfilled the sampling criteria. The purpose of the study was explained to the Parents and assured the confidentiality of their son/daughters identity and responses. On the first day, pre-test was conducted by a questionnaire and rating scale followed by Self foot reflexology. The post-test was conducted on the 14th day using the rating scale. The study was found feasible and practicable. No modifications were made after pilot study. Data analysis was done using descriptive and inferential statistics. There difficulty of reaching the schools were the problems faced by the investigator during the pilot study. The investigator then proceeded for the main study.

Data Collection Process

The data will be collected from 21-1-13 to 20-2-13. Before data collection a formal written permission will be obtained from principal of selected high schools for conducting the research study. The purpose of the study will be explained to the parents and assures the confidentiality of their child to ensure their co-operation and prompt response. An informed consent will be taken from the Parents. The pretest will be conducted in students followed by self foot reflexology which will be performed by students for 15 -20 min for 3 days in a week for 4 weeks. Post-test will be administered to the school children using the same tool after 4 weeks.

Data collection process will be concluded by

thanking each child for his/her participation and co-operation. The data collected will be then compiled for data analysis.

Plan for Data Analysis

Analysis is defined as the process of organizing and synthesizing data in such a way that research questions can be answered and hypothesis tested [22]. The plan for data analysis includes both descriptive and inferential statistics. The analysis will be planned on the basis of objective and hypothesis.

Descriptive Statistics

Frequency and percentage will be computed for analyzing sample characteristics. Mean, Median, standard deviation computed will be computed for level of stress among school children

Inferential Statistics

Chi-square test will be used for finding association between stress and selected variables like gender, religion, and type of family, Income of family and leisure time activities. The paired t test will be computed for comparing pretest-posttest mean stress scores of high school children.

Results

Findings of the Study

Major findings of the study are presented under the following headings:

Section I: Description of Personal variables of sample.

- Majority (51.5%) of sample belongs to Hindu religion.
- Regarding monthly income of family most (54.68%) of sample have monthly income less than 5000.
- Most of the sample (57.03%) belongs to nuclear family.
- Highest percentage of sample (82.81%) participated in leisure time activities.
- 50% of samples were not exposed to stress management programs.

Table 1: Distribution of sample based on Personal Variable N=128

Personal Variable	Frequency (F)	Percentage (%)
Gender		
Male	64	50
Female	64	50
Religion		
Hindu	66	51.5
Muslim	62	48.43
Christian	0	0
Others	0	0
Monthly Income of Family		
<5000	70	54.68
5001-10,000	35	27.34
>10,001	23	17.96
Type of Family		
Joint family	55	42.96
Nuclear family	73	57.03
Participation in Leisure		
Yes	106	82.81
No	22	17.18
Exposure to stress management Programs		
Yoga	13	10.15
Exercise	44	34.37
Stress Management Classes	7	5.46
· None of these	64	50

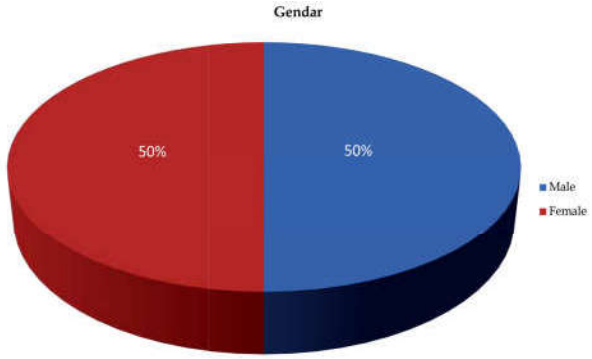

Fig. 1: Distribution of sample based on Gender

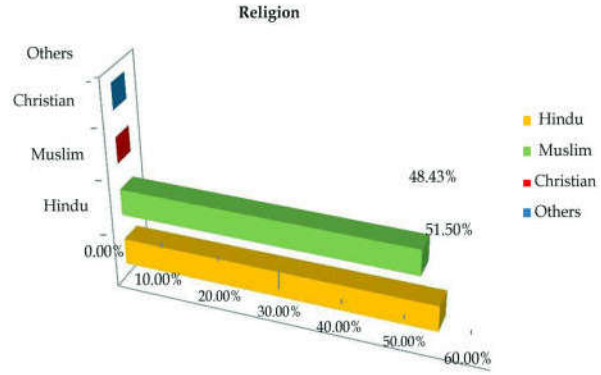

Fig. 2: Distribution of sample based on Religion.

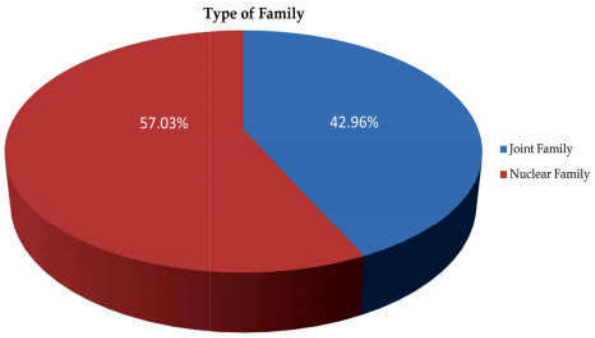

Fig. 3: Distribution of sample based on Type of Family

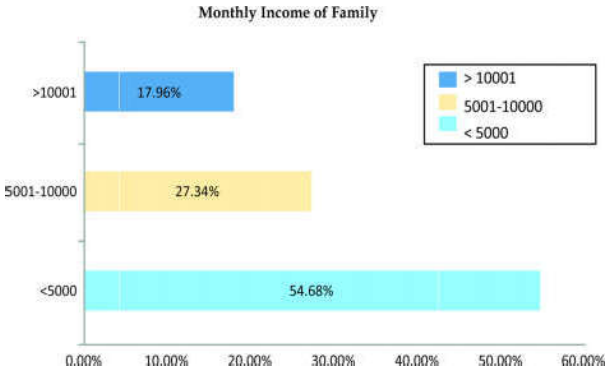

Fig. 4: Distribution of sample based on Income of the Family

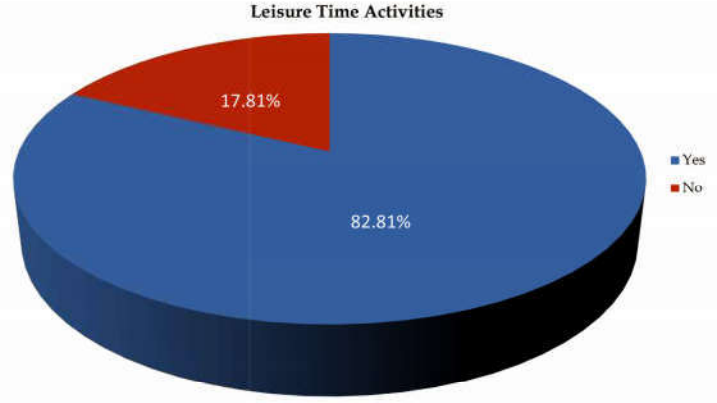

Fig. 5: Distribution of sample based on Income of the Family

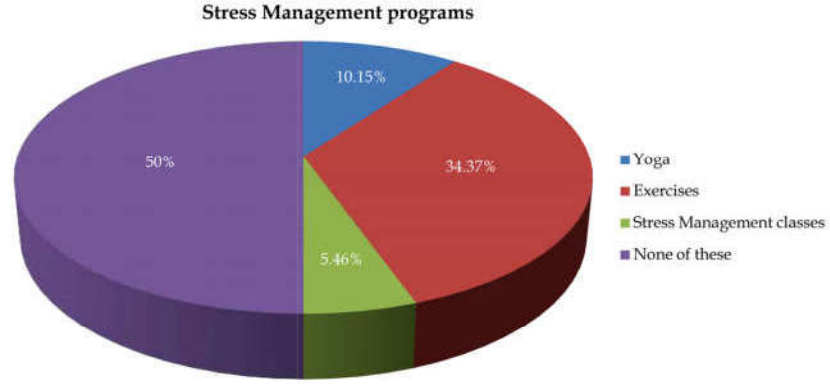

Fig. 6: Distribution of Sample based on exposure to stress management programs

Section II: Description of Level of Stress among School Children

Most of samples (51.56%) were having mild stress whereas only 6.25 % have severe stress. About 42.18% of sample has moderate stress.

Section III: Effect of Self Foot Reflexology on Stress among School Children.

Comparison of Pretest sores of experimental and control group showed significant difference

Comparison of pretest and post test scores of experimental group showed that there is reduction in stress after self foot reflexology.

Comparison of post test scores of experimental and control group shows significant difference at 0.05 level and thus

significant reduction in stress after self foot reflexology in the experimental group so the hypothesis is accepted.

Comparison of Pretest and posttest scores of control group shows significant difference at 0.05 level.

Gain scores of experimental and control group using ANCOVA shows sample is heterogeneous and thus difference between the mean of experimental and control group is present which indicates the self foot reflexology was effective in reducing stress level of school children.

Table 2: Frequency and percentage distribution of school children/ sample based on level of stress N=128

Level of stress	Frequency (f)	Percentage(%)
No stress	0	0
Mild Stress	66	51.56
Moderate Stress	54	42.18
Severe Stress	8	6.25
Very severe Stress	0	0

Table 3: Comparison of pretest scores of experimental group and control group N=128

Group	Mean	S.D.	DF	t
Experimental	36.67	18.07	1.26	3.266**
Control	48.85	23.75		

** Significant at 0.05 level [.t(126)=1.631,Pd"0.05]

Table 4: Comparison of Pretest and post test score of Experimental Group N=64

Tests	Mean	S.D.	DF	t
Pre test	36.67	18.47	63	4.841**
Post test	22.85	15.62		

**Significant [t(63)=1.669,Pd"0.05]

Table 5: Comparison of Post test scores of experimental and control group N=128

Group	Mean	S.D.	DF	t
Experimental	22.85	15.62	126	5.258**
Control	39.59	20.1		

**Significant [t (126) =1.631, Pd"0.05]

Table 6: Comparison of Pretest and Post test scores of control group N=64

Tests	Mean	S.D.	DF	t
Pretest	48.85	23.75	63	2.26**
Post test	39.59	20.1		

**Significant [t(63)=1.669,Pd"0.05]

Table 7: Gain scores of experimental and control group N=128

Source	Type III sum of squares	DF	Mean Square	F	P
Pretest	20729.010	1	20729.010	104.67	0.456
Group	946.864	1	946.864	4.782	0.037

Group	Mean	Standard error
Experimental	24.102	1.794
Control	18.445	1.794

Section IV: Association between Stress and Selected Variables

There is significant association between stress among school children and Income of Family (df=2, ü² =22.42,Pd"0.05) and exposure to stress management programs (df=3, ü² = 15.55,Pd"0.05) where as there is no significant association between stress among school children and gender (df=1, ü²= 0.03) ,Religion (df=2, ü²=0.28),Type of Family and Participation in leisure time activities.

Table 8: Association between stress and selected variables N=128

Personal Variable	Stress Score		DF	χ^2
	<median	≥median		
Gender				
Male	29	33	1	0.03*
Female	32	34		
Religion				
Hindu	33	33	3	0.28*
Muslim	28	34		
Christian	0	0		
Others	0	0		
Type of Family				
Joint family	31	24	1	2.42*
Nuclear family	31	42		
Monthly Income of Family				
<5000	32	18	2	22.4**
5001-10,000	18	17		
>10,001	12	11		
Participation in Leisure time activities				
Yes	54	52	1	0.73*
No	9	13		
Exposure to stress Management programs				
Yoga	2	11	3	15.55**
Exercise	20	24		
Stress Management Classes	4	3		
None of these	35	29		

*Not Significant at pd"0.05 level, ** Significant at pd"0.05 level

Discussion

The Present study was an attempt to evaluate the effect of self foot reflexology on stress among school children .The study was conducted among school children at selected schools in Thalassery.

The findings of the study were discussed in terms of objectives and hypothesis and comparison made with other study findings. The discussion is divided into follow headings:

- Description of level of stress among school children.
- Effect of self foot reflexology on stress among school children.
- Association between stress and selected variables.

Description of Level of Stress among School Children

In Present study findings revealed that most of school children (51.56%) experienced mild stress where as 42.18% of school children experienced moderate stress. 6.25% of school children have severe stress.

These findings are supported by a study to understand the prevalence of stress in school children of Kerala which reveals that 93 to 100% of the children aged 4-17 years showed medium to moderate stress and 1.9% had severe stress [3].

Effect of Self Foot Reflexology on Stress among School Children

Findings revealed that calculated t value (4.841) is greater than table value (1.669). So there is significant reduction in stress after self foot reflexology.

Findings are supported with the study done in Korea to evaluate the effect of self foot reflexology on perceived stress, immune response and fatigue in middle aged women in rural areas shows that self-foot reflexology massage is an effective intervention for perceived stress, systolic blood pressure, diastolic blood pressure and fatigue in middle-aged woman [21].

Association between Stress and Selected Variables

Findings revealed that there is significant association between stress and variables such as Income of Family and exposure to Stress management programs where as there is no

significant association between stress and variables such as gender, Religion, Type of family and leisure time activities.

This finding is supported by a study conducted in Dharwad, Karnataka among 150 students to identify stressors showed that there exists a non-significant association between selected demographic variables (Age, Number of siblings, Type of family, Occupation and Qualification of Father and mother) and stress [13].

Conclusion

In conclusion, practicing self foot reflexology for 4 weeks was associated with significant reduction in Level of stress. Self foot reflexology is inexpensive and easy way of selfcare at home and school, can have increased benefits in academic and other daily activities. Such Self treatment modalities should be expanded, as an integral part of School health Program to reduce level of stress among school children.

Nursing Implications

The findings in the study have implications in Nursing Practice, Nursing Administration and Nursing Research.

Nursing Practice

The ultimate aim of our nursing care is to reduce level of stress among school children.

- The findings of present study confirm that Self foot reflexology is an effective The study highlights the positive role of non – pharmacological nursing intervention to reduce the stress among school children
- The investigator recommends the teachers of schools to practice self foot reflexology in schools and also educate parents about the advantage of self Foot reflexology.

Nursing Education

- The nurse educator should give importance for these evidenced measures in school curriculum and should encourage teachers to include these measures in reduction of stress level in school children.
- In service education programs should be organized for teachers to reinforce the need of developing and practicing effective management techniques for management of level of stress among school children.

Nursing Administration

- Nursing administrator should initiate measures about the importance of evidence based non-pharmacological measure that would uplift the children to be a good citizen
- The responsibility of a nurse administrator is to inculcate self foot reflexology as a cost effective, safe and evidence based treatment modalities which will promote enthusiasm in adopting innovative stratergies for reduction of stress
- The administration of nursing service and education should arrange in service training and continuing education to train teachers in use of treatment modalities like self foot reflexology so that they can be incorporated in their daily life.
- Measure in reduction of stress without much money, time and material resources

Nursing Research

The research studies related to stress management in school children are very limited. In present world very few studies were carried out to assess the effect of self foot reflexology on stress among school children.More studies needed to be conducted regarding the effect of self foot reflexology on stress and thus this area has to be explored further.

The nurse researcher should take initiative to conduct research in this area. Research in this area should be promoted by providing funds, scholarship, personnel and materials needed to improve evidence based practice.

Limitations

The study has few limitations

- The study was limited to Government schools.
- No attempt was made to follow-up to measure the retention of knowledge after the post-test in control group.
- The study was intended to find out level of stress among High school children. Due to lack of time the study has been limited to high school students and was not extended to other sections like primary, upper primary and college level students
- The study has been limited to Thalassery mainly due to lack of time.

The tool was not administered to large sample due

to lack of time hence administered only to 128 samples

- The samples were School children of eighth and ninth standard, so the data obtained for every item in the tool may not be reliable and opinions of each child may not be their own.
- The investigator does not consider all the acceptable variables such as medium of instruction.

Recommendations

- A True experimental approach can be used to evaluate the effect of Self Foot reflexology.
- Studies can be done in large samples to assess the effect of the self Foot reflexology
- A Self-instructional module can be developed regarding the daily practice of Self foot reflexology
- Studies can be done in management of other psychological symptoms with self foot reflexology in children
- More studies can be done to assess level of stress in school children
- Large studies preferably involving large public and private schools
- Studies can be done to assess the level of stress in children studying in X and Higher secondary classes.

Acknowledgement

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The researcher expresses his respectful thanks to all the experts who had agreed to do the content validation of tools.

With overwhelming hearty thanks, he submit this effort to his loving Dad and mom.

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