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A Study to Assess the Knowledge Regarding Consanguineous Marriages and its Genetic Effects among Young Adults with a View to Develop an Information Booklet at Selected Degree Colleges in Tumkur, Karnataka

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Abstract

Consanguineous marriages are respected and practiced among more than one billion of the world's population with consanguinity rates reaching 20–50%. Consanguinity increases the risk of congenital anomalies, autosomal recessive disorders, perinatal and antenatal morbidities. This study determines the knowledge regarding consanguineous marriages and its genetic effects among young adults.

Objectives: 1. To assess the knowledge regarding the consanguineous marriage and its genetic effects among young adults. 2. To determine the association between knowledge of young adults with selected demographic variables.

Methodology: A descriptive survey research approach was considered the best to assess the knowledge on consanguineous marriage and its effects were used for the study. The convenience sampling technique was used to select 100 young adults as the sample. A structure knowledge questionnaire was used to assess the knowledge. The collected data was analyzed by using descriptive and inferential statistics.

Results: The mean percentage of knowledge score (39.3) and standard deviation was (1.34). Calculated χ 2 values are showed significant association between monthly family income and father's education, with their overall knowledge scores.

Keywords: Assess; knowledge; consanguineous marriage and its effects; young adults.

Introduction

Linguistically, consanguinity is a term that is derived from two Latin words "*con*" meaning common, or of the same and "*sanguineus*" meaning blood, hence, referring to a relationship between two people who share a common ancestor or blood. In other words, consanguineous marriage refers to unions contracted between biologically-related individuals.[1]

Although a high proportion of marriages in Asia are consanguineous (i.e. contracted between close biological relatives), with some notable exceptions, there is a death of demographic and anthropological literature on the association between consanguinity and fertility.[2]

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The incidence of consanguineous marriages is very high in the Pattusali population. First cousin marriages are preferred mostly. The consanguinity effects obtained in this population are also mostly confined to these marriages only. The inbreeding coefficient for the population is 0.02997. The consanguinity on fertility, mortality and morbidity.[3]

Consanguineous marriage is customary in many societies, but leads to an increased birth prevalence of infants with severe recessive disorders. It is therefore often proposed that consanguineous marriage should be discouraged on medical grounds. However, several expert groups have pointed out that this proposal is inconsistent with the ethical principles of genetic counseling, overlooks the social importance of consanguineous marriage and is ineffective.[4]

Approximately 4 million babies are born each year. About 3%-4% will be born with a genetic disease or major birth defect. Approximately 1% of all babies will be born with chromosomal abnormality, which can cause physical problems and mental problem retardation more than 20% of infant deaths are caused by birth defects or genetic condition (e .g congenital heart defects, abnormalities). Approximately 10%of all adult and 30%of children in hospital are due to genetically related problems.. There was no increased in autosomal dominant, x linked or chromosomal disorders. The high consanguinity rate reported of certain genetic disease, mainly autosomal recessive and polygenic disorder.[5]

Review of literature

A study was conducted with 65 Israeli subjects who received genetic counseling while considering marriage to a close relative, 40 subjects married to a close relative who did not receive pre-marital genetic counseling, and 125 controls married to a non-relative and never having considered marrying a relative. It was found that 72% of the consanguineous couples who received pre-marital genetic counseling proceeded with their plans and married their relative; 86% of them reported that the counseling influenced their final decision to some degree. Compared to the non-counseled consanguineous group, consanguineous couples who received pre-marital genetic counseling had fewer children, estimated their genetic risk as lower but its subjective significance as higher, and perceived genetic disorders as more severe. The implications of these results are discussed from both theoretical and practical standpoints.[6]

A study was conducted in Shindoli village of District Belgaum by interviewing 500 married women residing in the rural field practice area. As a result the prevalence of consanguinity was found to be 36%. Majority of the marriages were between first cousins (54.44%). Foetal loss was seen to be significantly higher in the consanguineous group as compared to non-consanguineous group ($p<0.001$). No significant effect of consanguinity was observed on the number of stillbirths, neonatal mortality, obstetrical complications and congenital malformations. Only 7.6% of the women were aware about the hazards of a consanguineous marriage.[7]

A study was done to define the specific categories of genetic disorders associated with consanguineous marriages. Etiological categories and consanguinity rates were studied among 623 families with genetic syndromes, congenital anomalies or mental retardation, or both, seen at the National Center for Diabetes, Endocrinology and Genetics for the period August 2002 to August 2006. Comparisons were made for first cousin marriage rates in the study group and that for the general population. As a result First cousin marriages constituted 69%, 22% and 41.7% of marriages among families with autosomal recessive conditions, dominant, X-linked and chromosomal conditions and sporadic undiagnosed conditions respectively. The differences in rates of first cousin mattings versus non-consanguineous matings were highly significant when comparing known figures in the general population with group 1 and 3, but not significant with group 2. Two messages to the public and health care personnel regarding consanguinity can be derived from this study. The first message is that among genetic disorders, only autosomal recessive disorders are strongly associated with consanguinity. The second message is that approximately 30% of sporadic undiagnosed cases of mental retardation, congenital anomalies and dysmorphism may have an autosomal recessive etiology with risks of recurrence in future pregnancies.[8]

Statement of Problem

A study to assess the knowledge regarding consanguineous marriages and its genetic effects among young adults with a view to develop an information booklet at selected degree colleges in tumkur, Karnataka

Objectives

1. To assess the knowledge regarding the consanguineous marriage and its genetic effectsamong young adults.
2. To determine the association between knowledge of young adults with selected demographic variables

Methodology

Research Design:

The research design used in this study is descriptive design.

Setting of the Study:

This study was conducted in Seshadripuram degree college, Tumkur.

Population:

Population in the present study was all the young adults of Seshadripuram degree college Tumkur, Karnataka.

Sample and Sampling Technique:

Convenience sampling technique was used to draw the samples, which is the type of non-probability sampling technique.

Criteria for Selection of Sample:

a) Inclusion criteria

The study includes

- Young adults between the age of 20-25 years.
- Young adults who are present in the college at the time of study
- Young adults who are willing to participate in the study.

b) Exclusion criteria:

The study excludes;

- Young adults who are not willing to participate in the students

Development of the Information booklet

The steps adopted for the development of information guide sheet are

- **First draft:** First draft of information guide sheet regarding consanguineous marriage and its effects was developed based on objectives, extensive review of literature and suggestions obtained after consulting with experts.
- **Development of Criteria Checklist to evaluate the information booklet**
  - ✓ Identification and stating of objectives in behavioral terms depending on needs of learner.
  - ✓ Selection of the content. The content on selected knowledge on consanguineous marriage and its effects was selected through literature search and in consultation with the guide and experts.
- **Content Validity for information booklet**

  The initial draft of information guide sheet was given to experts who include experts in the field of OBG department along with the tool. The necessary modifications were incorporated in the self-instructional module based on suggestions of experts.
- **Preparation of final draft of information booklet**

Selection and Development of Tool:

An instrument is a written device that a researcher uses to collect data. The instrument selected in the research should be as far as possible the vehicle which would be the best for obtaining the data to draw conclusions pertaining to the study.

Selection of the Tool

Structured knowledge questionnaire was used to assess the knowledge of young adults regarding consanguineous marriage and its effects.

Description of the Tool

The tool was constructed based on the research objectives, review of related literature, suggestions and guidance of experts in the field of OBG nursing. The tool consists of two sections namely, Socio demographic data and structured knowledge questionnaire.

Section I: It consists of 9 items related to demographic data of the subjects such as age, religion, father's occupation, mother's occupation, monthly family income, father's education, mother's education, area of residence and source of information regarding consanguineousmarriage and its effects.

Section II: Structured Knowledge questionnaire consisted 30 items on Knowledge regarding consanguineous marriage and its effects.

Method of Data Analysis:

The data was analyzed by using Descriptive & Inferential statistics.

Descriptive statistics:

1. Organization of data in master sheet. Frequency and percentage distribution are used to analyze demographic data of students. Mean percentage and standard deviation are used to assess the level of knowledge of students**.**

2. Inferential statistics:

Chi square test was used to find association with the knowledge score and thedemographic variables.

Results

The data organized and presented in four sections

Section- I:

Description of selected socio-demographic variables of young adults studying in selected sheshadripuram Degree College, Tumkur, Karnataka.

Section- II:

Finding related association between knowledge scores of young adult s regarding consanguineous marriage and its effects with socio demographic variables

Section-I: Frequency And Percentage Distribution Of Selected Socio Demographic Variables Of Young Adults

The study finding demonstrated that among 100 young adults majority 78%(78) of them were between 18-25 years, 22%(22) of them were above 25 years of age.

With regard to the religion of young adults, most of them 45%(45) were Hindus, 28%(28) of them were Christians and rest of them 27%(27) were Muslims.

It was observed that majority of young adults fathers occupation 52%(52) were daily wages, 23%(23) of them were self-employees, 14%(14) of them were Government employees and 11%(11) of them were private employees.

According to the Mothers occupation of young adults majority of them 49%(49) were house wife, 28%(28) of them were self-employees, 16.0%(8) of them were private employees and 7%(7) of them were Government employees.

In relation to monthly income of family, majority of the young adults 52%(52) had Rs. 10000-20000, of monthly income , 21%(21) of them had monthly income of Rs.20001-30000, 15%(15) of them had below Rs.10000, and 12%(12) of them had above Rs.30000 of monthly family income.

Majority of the fathers of young adults had 34%(34) primary education, 25%(25) of them had degree or above education, 22%(22) of them had high school and rest of them 19%(19) had informal education.

It was recorded that, mothers education of young adults were found to be more 31%(31) in degree or above education, x 28%(28) of them had high school, 24%(24) of them had primary education and 17%(17) of them had informal education.

Among 100 young adults, majority of them 49%(49) were from suburban area, 27%(27) of them

were from urban area, and least of them 24%(24) were from rural area.

The socio demographic history of source of information shows that among 100 young adults majority of them 42%(42) were getting information from mass media, 27%(27) of them were getting from relatives, 20%(20) of them getting information from friends and least of them 11%(11) access the information from parents regarding consanguineous marriage and its genetic effects

Section-II

Knowledge Scores Of Young Adults Regarding Consanguineous Marriage And Its Effects

Table 1: knowledge scores of young adults regarding consanguineousmarriage and its effects

n=100

Level of knowledge	Score	No of Respondents	
		No	%
Inadequate	< 50%	99	99
Moderate	50--75%	1	1
Adequate	>75%	0	0.00
Total		100	100

Table 1 depicts that knowledge score of young adults regarding consanguineous marriage and its effects. In this study majority of the young adults 99%(99) had inadequate level of knowledge regarding consanguineous marriage and its effects and 1%(1) of them had moderate level of knowledge and none of them had adequate knowledge.

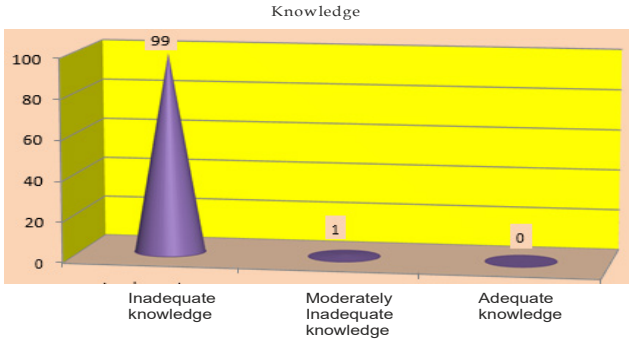


Figure 1: knowledge scores of young adults regarding consanguineous marriage and its effects

Section-II

Association Between Knowledge Scores Of Young Adults With Their Selected Socio Demographic Variables : The chi-squire value of the knowledge of young adults were significant at P<0.05 level. It showed that there was significant association between monthly family income and father's education knowledge scores of young adults regarding consanguineous marriage and its effects. Hence hypothesis H_1 is accepted.

Discussion

Section 1 finding:

The overall knowledge score of young adults regarding consanguineous marriage and its effects. In this study majority of the students 99%(99) had inadequate level of knowledge regarding consanguineous marriage and its effects and 1%(1) of them had moderate level of knowledge and none of them had adequate knowledge. The findings of the present study shows that the knowledge of young adults were inadequate and measures have to be undertaken to improve their knowledge level.

Section 2 finding:

The chi-squire value of the overall knowledge scores of young adults were significant at P<0.05 level. It showed that there was significant association between monthly family income, father's education, regarding consanguineous marriage and its effects with the overall knowledge scores of young adults regarding consanguineous marriage and its effects. Hence hypothesis H_1 is accepted.

The present study showes that there was significant association between knowledge of young adults with their selected socio demographic variables.

Conclusion

In this study majority of the students 99%(99) had inadequate level of knowledge regarding consanguineous marriage and its effects and 1%(1) of them had moderate level of knowledge and none of them had adequate knowledge.

The chi-squire values of the knowledge scores of young adults were significant at P<0.05 level with their selected socio demographic variables of monthly family income and father's education.

Recommendations for further research

Based on the findings of the present study and keeping in mind the limitations of the study, the following suggestions are offered to conduct studies on

- A similar study can be undertaken by utilizing other domains like attitude and practice.
- A similar study can be conducted by using different teaching methods.
- Similar study can be conducted for health care personals to identify their knowledge and attitudes of consanguineous marriage and its effects.
- Similar study can be conducted in different community to find out the significant difference between urban and rural community.

Limitation of the study

The study is delimited to:

- Young adults at selected degree college, in Tumkur.
- Selected degree colleges of Tumkur

Ethical Committee

Name of the Faculty : Devimaya R

Designation : Associate professor

Subject : OBG Nursing

Title Of The Topic : "A Study To Assess The Knowledge Regarding Consanguineous Marriages And Its Genetic Effects Among Young Adults With A View To Develop An Information Booklet At Selected Degree Colleges In Tumkur".

Ethical Committee Member Approval

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3. Dr O P Gupta (Director)

4. Dr Ranganath mg (Principal ,nursing)

faculty adviso : Dr Ranaganath Mg (Principal)

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A Study to Assess the Effectiveness of local Application of Fenugreek Seeds Paste on Knee Joint Pain among older People living in Selected Villages of Tapi, Gujarat

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Abstract

Background: Ageing is a lifetime process that comprises physical, psychological, social, and spiritual changes that occurs from the time of birth until the moment of death. Knee pain is a major musculoskeletal condition among the elderly, and its incidence rises with age.

Objectives: The study's objectives were to identify the level of knee joint pain, to assess the effectiveness of local application of fenugreek seeds paste on knee joint pain, to compare the effectiveness of local application of fenugreek seeds paste on knee joint pain among older people between experimental and control group and to find the association of knee joint pain with selected demographic variables.

Method: Using quasi experimental research design and purposive sampling technique 66 older people for experimental and control group were recruited in the selected villages of Tapi District. After obtaining consent from older people numerical pain scale was used to determine the level of knee joint pain in experimental before and after intervention. In the control group, the same tool was used without intervention. A fenugreek seed paste was applied on and around knee for 15 days in experimental group.

Results: In the experimental group, 48% of the samples had moderate pain, while in the control group, 72% of the samples had moderate pain. The mean pre-test pain score in the experimental group was 6.27, while the mean post-test pain score was 3.21. The mean pre-test pain score in the control group was 5.57, while the mean post-test pain score was 5.78. Age and occupation of older people had an influence on knee joint pain.

Conclusion: Fenugreek seeds paste is an effective home remedy for knee joint pain relief.

Keywords: Knee joint pain; older people; fenugreek seeds paste.

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Introduction

Aging is a lifelong process that involves physical, psychological, social and a spiritual change that occurs from birth to death.[1] Common problems in older age include cataracts and refractive errors, hearing loss, osteoarthritis, back and neck pain, diabetes, chronic obstructive pulmonary disease, dementia and depression,[2] People who are older are more likely to suffer from multiple problems at the same time.[3] Knee pain is a major musculoskeletal condition among the elderly, and its incidence rises with age. Knee pain reduces physical activity and impairs one's quality of life.[4]

According to the World Health Organization (WHO), symptomatic osteoarthritis affects 9.6% of men and 18% of women over the age of 60. 80% of persons with osteoarthritis have movement impairment, and 25% of people are unable to perform their daily activities.[5]

According to study conducted in united state about 18% of men 60 years and older complained knee pain and the prevalence rises steadily with age. Incidence of knee pain was highest, at about 24% in elderly above 85 to 90 years. 23% of women 60 years and above reported knee pain.[6]

By Age, India (2017-18) self reported prevalence of joint or bone diseases among old age people was found to be 76.3%.[7]

Among elderly age 60 and above, the prevalence of any bone/joint disease is higher among women (22%) than men (16%) and higher in the person who lives in urban areas (22%) than in rural areas (17%) among those residing in urban areas (22%) than in rural areas (17%). India reported 11% arthritis in the elderly 60 years and above.[8]

According to the findings of a study on knee pain and osteoarthritis in older adults: Review on community load and primary care services current uses in the UK, 25% of men over the age of 55 experience a continuous episode of knee pain over the period of a year, with almost one in six in the UK.[9]

Though there is more research done on older people with knee joint pain and activities of daily living with various interventions in India. There has been no research done on older people with local application of fenugreek seeds paste. As fenugreek seeds have anti inflammatory, anti arthritis and antioxidant, properties[10], this study aims to evaluate how efficient fenugreek seeds paste is in reducing knee joint pain.

Material and Methods

The present research was carried by using a quantitative approach. A quasi experimental research design was used to assess the effectiveness of local application of fenugreek seeds paste on knee joint pain in older people. The research was carried out in selected villages of Tapi District. The participants in the study were older people who suffered from knee joint pain. The sample was chosen from the target population based on sample selection criteria using a non-probability purposive sampling technique.

Inclusion Criteria were: older people who are willing to participate in the study, and older people who can read and understand English and Gujarati language.

Exclusion Criteria: Severe co-morbid conditions with older people were excluded from the study. The current study's tool was divided into two part.

Part-A tool consists of socio-demographic data of older people such as, Age, sex, education, employment, income of the family, dietary pattern, types of family, co-morbid conditions, history of habits and exercise, pain medication, anthropometric parameters, history of hospitalization.

Part-B included standardized numerical pain scale. Pain score ordering with 0-10. 0 point means-no pain, 1-3 means mild pain, 4-6 means moderate pain, 7-9 means extreme pain and 10 points means most severe pain. Five experts evaluated the socio-demographic tool's content validity. The internal Reliability coefficient is 0.90. The plan for data analysis were included Frequency and percentage distribution of socio-demographic data of the older people, Mean, standard deviation and T –test to assess the effectiveness of local application of fenugreek seeds paste on knee joint pain among older people and Chi-square for the association of knee joint pain with the selected demographic variables.

Results

Demographic details of the samples: In the experimental group, 50% of the samples were 60-65 years old, while in the control group, 55% of the samples were 60-65 years old. In the experimental group, 55% of the samples were female, while in the control group, only 48% of the samples were female. The experimental group had 52 percent of the sample with primary education, while the control group had 36 percent. In the experimental group, 50% of the sample was performing housework, while in the control group, 60% of the sample was doing it. 60% of the sample in both the experimental and control groups income between 5000 and 10,000 rupees per month. The experimental and control groups both had 100% of the sample with a mixed dietary pattern. In the experimental group, 64% of the sample lived in a joint family, while 50% of the sample in the control group lived in a nuclear family. The experimental group had 85 percent of the sample without a history of bad habits, while the control group had 76 percent. The experimental group had 73 percent of the sample while the control group had 82 percent of the sample not performing exercises. 15% of them had co-morbid condition in the experimental group and 21% of them had co-morbid condition in the control group and they were receiving medical treatment. Both in the experimental and control groups, 100% of the participants were not taking any pain medication. 12% of the experimental group and six percent of the control group were admitted to the hospital. In the experimental group, 84 percent of the sample had a BMI of 18.5 to 24.5, while in the control group, 73 percent of the sample had a BMI of 18.5 to 24.5. In both legs, 82 percent of the experimental group and 76 percent of the control group had knee joint pain. 100% of the samples in both the experimental and the control groups were not having swelling on knee.

Table 1: Level of knee joint pain.

	Experimental Group		Control Group	
	Pre test	**Post test**	**Pre test**	**Post test**
No pain	0%	0%	0%	0%
Mild	9.0%	75.7%	12.12%	9.09%
Moderate	48.4%	21.2%	72.7%	66.6%
Severe	36.3%	3.03%	15.15%	24.2%
Extreme	6.06%	0%	0%	0%

In the experimental group, Nine % had mild, 48.4% had moderate, 36.3% had severe and 6.06% had an extreme level of knee joint pain whereas in post-test 75.7% had mild, 21.2% had moderate, 3.03 % had a severe level of knee joint pain. While in the control group, 12.12% had mild, 72.7% had moderate, 15.15% severe level of knee joint pain whereas in post-test 9.09% had mild, 66.6% had moderate, and 24.2% had a severe level of knee joint pain.

Table 2: Effect of local application of fenugreek seeds paste on knee joint pain among older people.

N_1=33, N_2=33

	Pre-test				Post-test			
	Range	**Mean**	**SD**	**Median**	**Range**	**Mean**	**SD**	**Median**
Experimental group	8	6.27	1.97	6	7	3.21	1.21	3
Control group	6	5.57	1.43	6	6	5.78	1.34	6

df=64,P=0.05

The data shown in the table presented that in the experimental group pre-test range was 8, mean was 6.27, SD was 1.97 and median was 6 whereas in post-test range was 7, mean was 3.21, SD was 1.21 and the median was 3. However in the control group pretest range was 6, mean was 5.57, SD was 1.43 and median was 6 whereas in post-test range was 6, mean was 5.78, SD was 1.34 and median was 6.

According to the data in the table, the experimental group's pre-test range was 8, with a mean of 6.27, SD of 1.97, and a median of 6, whereas the post-test range was 7, with a mean of 3.21, SD of 1.21, and a median of 3. However, in the control group, the pretest range was 6, with a mean of 5.57, SD of 1.43, and a median of 6, whereas the post-test range was 6, with a mean of 5.78, SD of 1.34, and a median of 6.

Table 3: Effect of local application of fenugreek seeds paste on knee joint pain among older people in experimental group.

N=33

	Mean	Standard deviation	Mean difference	Value calculated	Table value	Inference
Pre-test	6.27	1.97	3.06	9.6048	2.02	Significant
Post-test	3.21	1.43				

df = 32, P = 0.05

In the pre-test and post-test, the effectiveness of the local application of fenugreek seeds paste was shown to be statistically significant at (p=0.05 *).

Table 4: Comparison of the effectiveness of local application of fenugreek seeds paste on knee joint pain among older people between experimental and control group

N_1= 33, N_2= 33

	Mean	Standard deviation	Mean difference	t value	P value	Inference
Experimental group	3.21	1.21	2.57	8.5828	<0.05	Significant
Control group	5.78	1.34				

t(64)= 1.98

In both the experimental and control groups, the effectiveness of the local application of fenugreek seeds paste was found to be statistically significant at (p=0.05 *).

Association of knee joint pain with selected demographic variables.

Association of knee joint pain with selected demographic variables showed that age (X^2=6 at $p < 0.05$) and occupation (X^2=8 at $p < 0.05$) of older people was positively associated with knee joint pain.

Discussion

According to the findings of this study, the majority (48.4%) of older people in the experimental experienced moderate level of knee joint pain, 36.3 percent experienced severe level of knee joint pain, 9% experienced mild level of pain, and 6% experienced extreme level of pain. Whereas in control group, a majority of an older people (72.7%) experienced moderate level of knee joint pain, 15.15% experienced severe level of knee joint pain, and 12% experienced mild level of knee joint pain.

The prevalence of knee discomfort among independent community-dwelling elderly individuals in Japan was investigated by a survey method. Knee discomfort was observed to affect 33.4 percent of the elderly in the study. Knee pain was found to be more common in elderly women than men and it worsened with age.[11]

The paired t test was done to compare the pre-test and post-test pain mean score. The mean pre -test score was 6.27, while post test mean score was 3.21. Mean difference was shown to be 3.06.It was found statistically significant.

The mean post-test knee joint pain score was compared between the experimental and control groups using the paired t-test, and the experimental group's mean score was 3.21, while the control group's mean score was 5.78, with a mean difference of 2.57.

The chi-square test revealed that there was a significant relationship between knee joint pain with age and occupation in the present study. This means

that education and occupation can have an impact on knee joint pain.

The above finding is supported by diabetes and knee pain severity and distribution in persons with knee osteoarthritis a cross-sectional study. The study result showed that there were a significant associations found between diabetes mellitus with increased knee pain with severity over 7 days and over 30 days.[12]

Conclusion

According to the findings, the majority of older people are in a lot of pain. Knee joint pain is extremely frequent as people become older. It required medical attention. Otherwise it leads to impaired quality of life and interfere with daily lifestyle. Fenugreek seeds paste is the effective home remedy to reduce knee joint pain and improve the quality of life among older people. It is simple to use and easily available.

Ethical Consideration:

This study got permission from the chief district health officer, health, and family welfare department, Tapi, Gujarat and also got approval from an ethical committee of the college. The older people who met the inclusion criteria gave their consent to the study.

Recommendations:

1. The investigation can be carried out with a large sample size.
2. A variety of research designs can be used to carry out the study.
3. Knee joint discomfort and everyday activities can be studied.
4. Factors associated with knee joint pain can be studied.

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This is a completely self-funded project.

Conflicts of Interest:

There was no conflict of interest reported.

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A Study to Assess the Effectiveness of Video Assisted Teaching Programme on Knowledge and Beginning Skills Regarding the First Aid Management of Selected Minor Injuries in Children Among the School Teachers Working in the Selected Primary Schools of Narmada, Gujarat

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Abstract

Background: School age children are active youngster, have more interest in playing, attempt to get mastery over new motor skills and these age group children can be naughty, deficient and impulsive from time to time which is perfectly normal. So, occurrences of unexpected injuries are more common especially among primary school children. It is important for the school teachers to have knowledge and equipped with relevant skills of first aid management to deal with any emergency situation occur in school premises.

Aim: To assess the effectiveness of Video assisted teaching programme on knowledge and beginning skills regarding FAM of selected common conditions in children among school teachers.

Methods: Pre-experimental one group pre-test post-test design was used for the study. Population of the study was school teachers of two selected schools. Sample comprises of 40 school teachers convenient sampling technique was used to select the sample. Structured knowledge questionnaire, observation checklist and lesson plan were used an instruments.

Results: In the pre-test regarding knowledge score out of 40 primary school teachers 35(87.5%) had inadequate knowledge, 5(12.5%) of them had moderate knowledge and none of them had adequate knowledge on the other hand for the beginning skills 33(87.5%) of school teachers had poor beginning skills, 5(12.5%) had moderate beginning skills and none of them had good beginning skills. In the post-test majority 33(82.5%) of school teachers had adequate knowledge, 7(17.5%) had moderate knowledge and none of them had inadequate knowledge. With regards to beginning skills 33(82.5%) of the school teachers had good beginning skills and 7 (17.5%) had moderate beginning skills and none of them had poor beginning skills after the administration of video assisted teaching programme.

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Conclusion: VATP was found to be an effective teaching strategy in improving knowledge and beginning skills of school teachers regarding first aid management of selected minor injuries in children.

Keywords: First aid management, Effectiveness, Video assisted teaching programme, knowledge and beginning skills, naughty, deficient and impulsive, Selected minor injuries, school premises.

Introduction

School age children are active youngsters, have more interest in playing, attempt to get mastery over new motor skills and these age group children can be naughty, deficient and impulsive from time to time which is perfectly normal. So, occurrences of unexpected injuries are more common especially among primary school children. It is important for the school teachers to have knowledge and equipped with relevant skills of first aid management to deal with any emergency situation occur in school premises.[3]

Objectives

1. To assess the knowledge regarding the first aid management of selected minor injuries in children among the school teachers before and after Video Assisted Teaching Programme.
2. To assess the beginning skills of school teachers regarding first aid management of selected minor injuries in children before and after Video Assisted Teaching Programme.
3. To compare the pre-test and post-test knowledge and beginning skills of school teachers regarding first aid management of selected minor injuries in children.
4. To correlate the knowledge and beginning skills scores of school teachers regarding first aid management of selected minor injuries in children.
5. To find out the association between the post-test knowledge and beginning skills score with selected socio-demographic variable of school teachers such as age, gender, marital status, educational qualification etc.

Hypothesis

H_1– There will be a significant difference between pre-test and post- test knowledge scores of school teachers regarding the first aid management of selected minor injuries in the selected primary schools of Narmada District, Gujarat.

H_2– There will be a significant difference between pre-test and post- test beginning skills scores of school teachers regarding the first aid management of selected minor injuries in the selected primary schools of Narmada District, Gujarat.

H_3– There will be a significant correlation between pretest and post test knowledge and beginning skill scores of the school teachers regarding first aid management of selected minor injuries in children.

H_4– There will be a significant association between the post test knowledge and beginning skill scores of school teachers regarding first aid management of selected minor injuries in children with selected socio-demographic variables.

Background Of Study

(A) Studies related to incidence and prevalence of injuries in children.

A study to assess child school injury incidence, severity and risk factor in Lebanon (2020). Chi-square comparisons were conducted to determine the significance of any differences in injury rates between boys and girls for each category of school. Boys demonstrated a significantly higher injury rate for all mechanisms of injuries. Bumps/hits and bruises were most common—almost 3 times more likely than all other injury types. Injuries were mainly minor or moderate in severity—severe injuries were about 10 times less likely. Most injuries were unintentional, with rates nearly 5 times higher than those with unclear intent and 12 times higher than intentional injuries[11].

(B) Studies related to knowledge and skill or practice regarding first aid management.

A Descriptive Study to Assess the Level of Knowledge Regarding the First Aid Management among School Teachers in Selected Schools of District Mohali, Punjab (2017). The results of the study

showed that most of the teachers (77.5%) were having average knowledge regarding First Aid Management and 12.5% were having good knowledge and 10% were having poor knowledge.[12]

2. A study to assess knowledge and attitudes to first aid among school children of dehradun 2017.

In this study Fifty primary school teachers were selected by non-probability convenient sampling. This concludes that the training program was effective in significant improvement of knowledge and practice score regarding first aid management of selected minor injuries among study participants. Data were collected by knowledge questionnaire (maximum possible score (42) and self-reporting checklist (maximum possible score 23). Majority (94%) of the teachers were female. Paired sample t-test revealed that the mean posttest knowledge score regarding first aid management of selected minor injuries was significantly higher (34.76 ± 4.35) than that of mean pretest knowledge score (27.32 ± 5.73) ($P < 0.005$); mean posttest practice score was significantly higher (18.52 ± 2.63) then mean pretest practice score (14.52 ± 2.39) ($P < 0.005$).[13]

(C) Studies related to effectiveness of intervention on knowledge and beginning skill regarding first aid management

A study to assess the effectiveness of programmed teaching on levels of knowledge and expressed practice regarding first aid management among primary school teachers at selected schools vellore (2016). The study adopted quantity approach and the research design preexperimental one group pre and post test design. Nonprobability convenient sampling technique was used to selected 30 primary school teachers in Anaicut. It reveals that resides, sex, teaching experience, are statistically significant at $p<0.05$ level .The finding of the study concluded that there was significant increase in the level of knowledge and good expressed practice of primary school teachers. After programmed teaching using video on first aid management among primary school teachers. The level knowledge increased and expressed practices improved due to effectiveness of programmed teaching.[30]

Material and Methods

A research design selected was one group pre-test and post-test design which belongs to the pre-experimental design. The main focus of the study was to assess the effectiveness of Video Assisted Teaching Programme on knowledge and beginning regarding the first aid management of selected minor injuries in children among the school teachers through one group pre-test and post-test method which were depicted as $0_{1(pretest)}$ and $0_{2(post\ test)}$ respectively and the independent variables was Video Assisted Teaching Programme regarding first aid management of selected minor injuries.[5]

Sampling Technique

The sampling techniques adopted for the study was non probability convenient sampling technique.[5]

Findings:

1. Data were analyzed and hypothesis were tested using descriptive (frequency, percentage, mean, median, mode, standard deviation) and inferential statistics (paired "t" test and chi square).
2. In the pre-test regarding knowledge score out of 40 primary school teachers 35(87.5%) had inadequate knowledge, 5(12.5%) of them had moderate knowledge and none of them had adequate knowledge on the other hand for the beginning skills 33(87.5%) of school teachers had poor beginning skills, 5(12.5%) had moderate beginning skills and none of them had good beginning skills.
3. In the post-test majority 33(82.5%) of school teachers had adequate knowledge, 7(17.5%) had moderate knowledge and none of them had inadequate knowledge. With regards to beginning skills 33(82.5%) of the school teachers had good beginning skills and 7 (17.5%) had moderate beginning skills and none of them had poor beginning skills after the administration of video assisted teaching programme.
4. The knowledge mean score of pre-test was 13.85, standard deviation was 2.61 and post-test knowledge mean score was 33.95 and standard deviation was 2.18. Whereas for

the beginning skills pre-test mean scores was found 9.275 and standard deviation was 1.88. In the post-test mean beginning skills score was 34.275 and standard deviation was 2.044.

5. The video assisted teaching programme improved knowledge and beginning skills score on an average of 13.40 and 15.31 respectively. The calculated "t" value for the knowledge was found to be 40.83 which were higher than the tabulated value 2 and for the beginning skills "t" value was 52.33 which was also greater than the tabulated value at 0.05 level of significance. There was poor correlation between knowledge and beginning skills score of school teachers in pre-test and it was found to be fair correlation between knowledge and beginning skills score after the administration of video assisted teaching programme. There was significant association between post-test knowledge and beginning skills score with demographic variables (age in years and working experience in school) at $p<0.05$ level of significant.

Conclusion

In pre-test lack of adequate knowledge and beginning skills of school teachers regarding first aid management but after the administration of video assisted teaching programme there was significant improvement in knowledge and beginning skills of school teachers. So, it can be concluded that structured teaching programme is found to be an effective and feasible method of teaching strategy to improve knowledge and beginning skills of school teachers.

Conflict Of Interest: NIL

Source of Funding: By myself

Ethical clearance: It is ethically approved by our college faculties working under ethical committee for research.

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A Study to Assess the Effectiveness of Buerger Allen Exercise on Lower Extremity Perfusion Among Diabetes Mellitus Patients Admitted in Selected Hospitals

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Abstract

Introduction: Healthy life is the valuable gift of an individual, if a person is healthy enough he is the richest person in his own world. But there are certain disease condition which affect many people in our world, such as heart problem, neurological problem, orthopedic problem, metabolic disorder especially diabetes mellitus, among which diabetes mellitus is the one of the important health concerns in today's world. Diabetes mellitus is a global public health problem; growing as an epidemic in both developed and developing countries.

Objectives Of The Study:

1. To assess existing lower extremity perfusion among diabetes mellitus patients.
2. To evaluate the effectiveness of Buerger- Allen exercise on lower extremity perfusion among the experimental group.
3. To find out the association between pre-interventional scores of Buerger Allen exercise with selected demographic variables, among diabetes mellitus patients.

Methodology: In the present study Experimental one group pre-test post-test design was used to determine the effectiveness Buerger Allen exercise on lower extremity perfusion among diabetes mellitus admitted in selected hospitals. Samples were selected using consecutive sampling technique.

Result: The subjects enrolled in the studies were 30 participation of diabetes mellitus type 2 patients. In present study 30 patients with diabetes mellitus type 2 were enrolled in hospital setting.

Age group: The majority of the subjects 12 (40%) belonged to the age group of 51-60.

Gender: Majority of subjects were 19 (63.3%) were male and 11(36.7) minimum were female.

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Specific habits: 15 (50%) majority of subjects had specific habits of tobacco chewing subjects while minimum 5 (16.7%) are smoking.

Diet: Majority of the subjects 21(70%) belonged to the mixed diet, while minimum 9(30%) subjects belonged to vegetarian diet.

Conclusion: The above interventional study was a good learning experience for, investigator. The result of this study showed that, Buerger Allen exercise was effective. As per subjects response on lower extremity perfusion among Diabetes Mellitus type 2, thus null hypothesis (H0) is rejected and alternative hypothesis (H1) is accepted. This study proved that the Buerger Allen exercise were effective and will help in the reduction of risk of lower extremity perfusion among Diabetes Mellitus type 2 subjects.

Keywords: Buerger Allen Exercise; Lower extremity perfusion; Diabetes Mellitus Patients; Selected Hospitals.

Introduction

"Beat Diabetes; Action needed to halt rise in Diabetes."(WORLD HEALTH DAY 2016).[1]

Diabetes mellitus is a group of metabolism diseases characterized by increasing level of glucose in the blood (hyperglycemia) resulting from defect in insulin secretion, or both (American Diabetes Association, 2004).[2] In type 2 diabetes mellitus, people have decreased sensitivity to insulin and impaired beta cell functioning resulting in decreased insulin production.[3] Type 2 diabetes mellitus affects approximately 90% to 95% of people with the disease.[4] It occurs more commonly among people who are over 30 years of age and obese, although its incidence is rapidly increasing in younger people because of the growing epidemic of obesity in children, adolescents and young adults.[5] Initially, type 2 diabetes mellitus is treated with diet and exercise and supplemented with oral anti diabetic agents.[6] Diabetes mellitus is a group of metabolic disorder of multiple etiologies characterized by hyperglycemia and micro vascular, macro vascular and neuropathic complications with disturbance of carbohydrate, fat and protein metabolism resulting from defect in insulin secretion, insulin action or both.[7]

Background Of The Study:

Peripheral arterial disease of the lower extremity may affect the aortoiliac, femoral, popliteal arteries, or any combination of these areas.[8] The patient with diabetes mellitus tends to develop disease in the arteries below the knee, especially the anterior tibial, posterior tibial and peroneal arteries.[9] In advanced stages, multiple levels of occlusions are found. Peripheral arterial disease is more frequent in those with diabetes mellitus.[10] Epidemiological evidence confirms the association between diabetes mellitus and the increased prevalence of peripheral arterial disease.[11] The prevalence of micro and macro vascular complications are more in Asian population i.e 66.4% and it is 44.2% in European populations. Among these, macro vascular complications accounts for 27.8%.[12]

Need For The Study:

Arterial (ischemic) ulcers most commonly occurs over bony prominences on the toes, feet and lower leg.[13] Nonhealing arterial ulcers and gangrene are most serious complication of end stage of peripheral arterial disease and may result in lower extremity amputation if blood flow is not restored adequately or if severe infection occurs.[14] If atherosclerosis has been present for an extended period, collateral circulation may prevent gangrene of the extremity.[15] Nearly 90% of diabetes related lower limb amputations were preceded by foot ulcers.[16] Some medical genius at that time developed postural treatment to improve circulation in the lower extremities. Buerger-Allen exercises were proposed by Leo Buerger and modified by Arthur Allen. The value of these exercises had frequently been emphasized by Allen, and many medical experts considered them as important adjuvant treatment and postoperative care for circulatory disturbances in the extremities.[17]

Review of Literature

A cross-sectional descriptive study was conducted in south-west Nigeria to assess the prevalence of peripheral arterial disease in diabetic subject in south-west Nigeria. Peripheral arterial disease (PAD) is rarely sought for and generally under-diagnosed

even in diabetics in developing countries like Nigeria. PAD is easily detected and diagnosed by the ankle-brachial index, a simple and reliable test. A total of 219 diabetic subjects aged 50–89 years was carried out. The participants were administered a pre-tested questionnaire and measurement of ankle-brachial index (ABI) was done. The ankle-brachial index < 0.90 was considered equivalent to peripheral arterial disease. The overall prevalence of PAD was 52.5%. The prevalence of symptomatic PAD was 28.7% whilst that of asymptomatic PAD was 71.3%. There were a number of associations with PAD which included, age ($p < 0.05$), sex ($p < 0.05$). The use of the ankle-brachial index in the detection of PAD was clearly more reliable than the clinical methods like history of intermittent claudication and absence or presence of pedal pulses. The prevalence of PAD is relatively high in diabetic subjects in the south-western region of Nigeria. Also the use of ABI is of great value in the detection of PAD as evidenced by a clearly more objective assessment of PAD compared to both intermittent claudication and absent pedal pulses.[18]

A study was conducted in Central Africa to assess the epidemiology of lower extremities peripheral artery disease. In the western countries, a high prevalence of lower-extremities peripheral artery disease (LE-PAD) is reported in the elderly. They sought to determine the prevalence and risk factors for LE-PAD in the general elder population in 2 Sub-Saharan African countries. They performed 2 cross-sectional studies in the populations aged >65 years in two representative districts of Brazzaville, Congo and Bangui, Central African Republic. The ankle-brachial index (ABI) was used to define LE-PAD, when ABI <0.90. An ABI >1.40 was considered to define medial calcinosis (MC). They study are concluded the first population study in Central Africa, we found a very high prevalence of LE-PAD in the elderly, and highlight particularities regarding the associated risk factors, different from data published in western countries.[19]

Title Of The Study

A study to assess the effectiveness of Buerger Allen exercise on lower extremity perfusion among Diabetes Mellitus patients admitted in selected hospitals.

Objectives Of The Study

- To assess existing lower extremity perfusion among diabetes mellitus patients.
- To evaluate the effectiveness of Buerger-Allen exercise on lower extremity perfusion among the experimental group.
- To find out the association between pre-interventional scores of Buerger Allen exercise with selected demographic variables, among Diabetes Mellitus patients.

Hypothesis:

H_0: There will be no significant effect of Buerger Allen exercise on lower extremities perfusion among diabetes mellitus patients.

H_1: There will be a significant effect of Buerger Allen exercise on lower extremities perfusion among diabetes mellitus patients.

H_2: There will be significant association between pre-interventional scores on Buerger Allen exercise with selected demographic variables.

Operational Definition

1. **Effectiveness:** In this study it refers to significant difference in interventional scores on Buerger Allen exercise on lower extremity perfusion among the Diabetes Mellitus patients.
2. **Lower extremity perfusion:** In this study it refers to assessing the blood circulation of brachial and dorsal pedis arteries before and after intervention as measured by Ankle brachial Index scale among diabetes mellitus patients.
3. **Buerger Allen exercise:** In this study it refers to active postural exercise, in which three steps (elevation, dependency, horizontal) active postural exercise to improve the collateral circulations of the lower extremities among diabetes mellitus patients.

Step 1 – Elevation:

The lower extremities are elevated to a 45 to 90 degree angle and supported in this position until the skin blanches for about 2 to 3 minutes.

Step 2 – Dependency:

The feet and legs are then lowered below the level of the rest of the body until redness appears (care should be taken that there is no pressure against the back of the knees) for about 3-5 minutes.

Step 3 – Horizontal:

The legs are placed flat on the bed in a horizontal position for 3-5 minutes.

The length of time for each position varies with the patient's tolerance and the speed with which colour change occurs. Usually the exercises are prescribed for about 12-13 minutes. Three series of steps can be repeated for a frequency of 2 times a day.

1. **Diabetes Mellitus patients:** In this study it refers to patients who are diagnosed as type 2 diabetes mellitus, since 5 years or more.
2. **Selected demographic variables:** In this study it refers to demographic variables gender, diet.

Assumption:

The assumptions of the study were that Buerger Allen exercise may improve lower extremity perfusion in diabetes mellitus patients.

Research Methodology:

Research Approach: A Quantitative experimental approach was found appropriate.

Research Design: One group, pre-test & post-test experimental design.

Setting of the study: The study was conducted in the Medical wards of selected hospitals.

Population: Diagnosed and with type 2 diabetes mellitus admitted at selected hospitals. Population distinguished as target and accessible population.

Target Population: In this study, the target population were subjects diagnosed with type 2 diabetes mellitus for more than 5 years with ABI (Ankle brachial index) score between 0.6–0.9.

Accessible Population: Subjects diagnosed and admitted with type 2 diabetes mellitus admitted in Medical wards of selected hospitals.

Sample: In this present study the sample were subjects diagnosed with type 2 diabetes mellitus for more than 5 years with ABI (Ankle brachial index) score between 0.6–0.9 with reduced lower extremity perfusion in selected hospitals.

Sample size: 30 subjects diagnosed and admitted with type 2 diabetes mellitus admitted in Medical wards of selected hospitals.

Sampling Technique: Consecutive sampling is a non-probability sampling technique.

Variables:

Independent Variables: In this study, independent variable was Buerger Allen Exercise.

Attribute Variables:

It includes

- Age.
- Gender.
- Specific habits.
- Diet.
- Duration of Diabetes Mellitus in years.

Dependent Variables: In this study, dependent variable was on lower extremity perfusion.

Criteria for Selection of the Sample:

Inclusion Criteria

- The subjects those who are diagnosed with type 2 Diabetes Mellitus, more than 5 years and admitted in selected medical ward.
- The subjects those who are diagnosed with type 2 Diabetes Mellitus and have ABI score between 0.6 -0.9.
- The subjects with the age group of above 30 years.
- The subjects who are available during the study.
- The subjects who can follow the instructions.

Exclusion Criteria

- The subjects who have chronic diabetes mellitus with foot ulcer, gangrene & amputation.
- The subjects who are critically ill and having secondary illness.
- The subjects who have the ABI score less than 0.5.

Description Of Data Collection Tool:

The tool for data collection consisted the following sections:-

Part I: Socio demographic variables.

Information on socio demographic variable of the subjects containing five items, which included age, gender, specific habits, diet and duration of diabetes mellitus in years.

Part II: Ankle Brachial Index Scale.

Assessment of lower extremity perfusion by using Ankle Brachial Index Scale.

>1.4	Indicates non compressible vessels.
≥1.0	Normal.
≤0.9	Lower Extremity Arterial Disease.
≤0.6 to 0.8	Borderline.
≤0.5	Sever Ischemia.

Pilot Study:

The pilot study was conducted in the in patients units of different hospital from 2nd December 2016 to 8th December 2016, to assess the practicability of the study and to decide a plan for statistical analysis. It was conducted on six subjects to assess the feasibility of the study. The investigator obtained formal permission from the concerned authority prior to the pilot study. Subjects were selected by consecutive sampling technique. Pre-test was conducted by the investigator assessment of lower extremity perfusion by using Ankle Brachial Index Scale. Buerger Allen exercise for 12-13 minutes was given to subjects and post test was conducted using same tool. This procedure was carried twice a day for 5 days. The participants were approached and were given an explanation of the objectives of the study and consent was obtained after assuring complete confidentiality of data. Ethical compliance was ensured. Pilot study revealed that there was significant difference in lower extremity perfusion after giving Buerger Allen exercise. So the investigator decided to follow pre and post-test design for the main study.

Method Of Data Collection:

Data collection tool are the procedures or instruments used by the investigator to observe or measure the key variables in the research problem. Data was collected by the investigator himself. The main study was conducted in the medical ward of the selected hospital from 24/12/2016 to 24/01/2017. The subjects were selected by the consecutive sampling technique. Each subject was given instructions regarding the purpose of the study. The study was conducted on 30 subjects admitted in Medical wards of selected hospitals to assess the effectiveness of Buerger Allen exercise on lower extremity perfusion among diabetes mellitus patients.

Data Analysis And Interpretation:

Table 1: Frequency and percentage distribution of lower extremity perfusion among diabetes mellitus type 2 subjects according to demographic variables.

n=30.

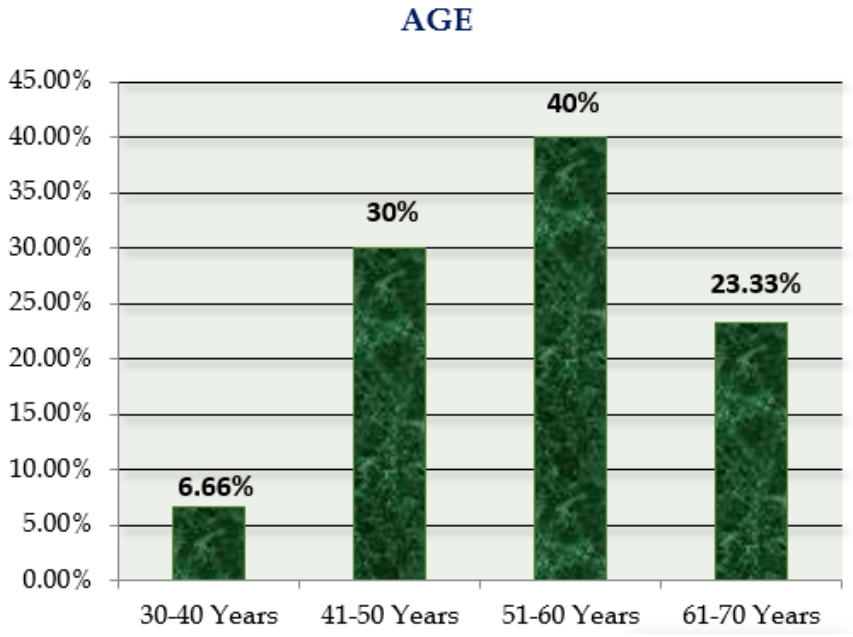


Table 2: Analysis and interpretation to the effectiveness of Buerger Allen exercise on lower extremity perfusion among the experimental group.

	Mean ± SD	(Wilcoxon signed ranks test).	
		z	p value
Pre-test ABI RL 1 Post-test ABI RL 2	0.9143 ± 0.04313 0.9853 ± 0.03608	-4.737	0.000
Pre-test ABI LL 1 Post-test ABI LL2	0.9137 ± 0.04351 0.9867 ± 0.03898	-4.629	0.000

Table 3: Analysis of data related to association between pre-interventional score and selected demographic variables, among diabetes mellitus patients.

n = 30

Demographic Variables			Ankle Brachial Index Scale.			Calculated Value	Tabulated Value	df	Remark
			LEA-D	Borderline	Normal				
Ge Gender	Male	RL	13	6	0	0.279	1.172	14	Not Significant
	Female		8	3	0				
	Male	LL	14	5	0	1.856	0.42	12	Not Significant
	Female		7	3	1				
diet	Vege-terian	RL	6	3	0	0.106	0.745	14	Significant
	Mixed		15	6	0				
	V e g e - terian.	LL	7	2	0	3.059	0.212	12	Not Significant
	Mixed		14	6	1				

The above finding showed that there was no significant association between pre-interventional score and selected demographic variables. Like gender, diet.

Conclusion

The above interventional study was a good learning experience for, investigator. The result of this study showed that Buerger Allen exercise effective on lower extremity perfusion among diabetes mellitus type 2, thus null hypothesis (**Ho**) is rejected and alternative hypothesis (**H1**) is accepted. Buerger Allen exercise used in clinical settings for subjects with Medical wards in selected hospitals.

Summary

Research analysis gives abroad view of the whole research and helps to know the result of study. This chapter dealt with the analysis of the data collected by the investigator to get better understanding about research problem and the objective of the study. Buerger Allen exercise was found to be effective on lower extremity perfusion among diabetes mellitus type 2 subjects.

Recommendations

On the basis of findings and the experiences while conducting the study the following recommendations are offered for future research.

- The study can be replicated for a larger number of subjects to validate and generalize the findings.
- A study may be conducted to find the effectiveness of Buerger Allen exercise on lower extremity perfusion among diabetes mellitus.

Conflict of Interest: I declare no conflict of interest.

Source of Funding: This study was self-funded.

Ethical Clearance: A written ethical approval permission was obtained from the institution authority prior to the study. Written consent from the subjects confidentially of the subjects was maintained.

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