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RESEARCH ARTICLE

A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF ISOMETRIC EXERCISES ON QUALITY OF LIFE AMONG THE INMATES OF ELDERLY PERSONS WITH JOINT PAIN AT SELECTED HOSPITAL, DEHRADUN, UTTARAKHAND

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Abstract

Problem Statement: “A Quasi Experimental study to assess the effectiveness of isometric exercises on quality of life among the inmates of elderly persons with joint pain at selected hospital, Dehradun, Uttarakhand”

Objectives: To assess the level of joint pain among elderly persons in experimental group and control group before and after intervention. To compare the effectiveness of isometric exercises on level of pain among osteoarthritis patients in experimental group and control group before and after intervention. To associate the quality of life among elderly persons with joint pain in experimental group and control group with their selected demographic variables.

Hypothesis:

H₁: There will be a significant difference between the quality of life of experimental and control group after intervention and no significant difference before intervention.

H₂: There will be a significant difference in the quality of life of experimental group before and after intervention and no significant difference of quality of life in control group after and before intervention.

H₃: There will be a significant difference between the pain score of experimental and controlled group after intervention and no significant difference of pain before intervention.

H₄: There will be a significant difference in the pain score of experimental group before and after intervention and no significant difference of pain score in control group after and before intervention.

Methodology: The nature of the study was quasi experimental. This was conducted in selected hospitals at Dehradun. The conceptual framework used for this study is based on Roy's Adaptation Model. The demographic variables for the study were age, gender, qualification, occupation, diet pattern, Body Mass Index, duration of illness, duration of treatment. The research design used for this study

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i.e., one group pre-test and post-test design. Non probability purposive sampling technique was used to select for 30 experimental group and 30 control group samples for the study. A numerical pain intensity rating scale and quality of life scale was used as a tool for data collection. The questionnaire consists of three sections i.e. Section A had demographic items: Section B had numerical pain intensity rating scale and Section C had quality of life scale regarding joint pain. The content validity was done by expert. The feasibility was ensured through a pilot study (n=6). The reliability of pilot study is $r=0.82$ for Numerical Pain Intensity Rating Scale and $r = 0.87$ for quality of life scale. The data was collected to assess the pre-test and post-test effectiveness of isometric exercises to reduce the joint pain among elderly persons. The data collected were analyzed and interpreted through descriptive and inferential statistics.

Major findings of the study were: Highest 53% were in the age group of 60 – 70 years in experimental group, whereas in control group majority of elderly persons 57% were in the age group of 71 - 80 years. With respect to gender, majority of elderly persons were females in the experimental group and control group. Based on the qualification, majority of elderly persons 47% were belong to secondary education in experimental group, whereas in control group majority of elderly persons 53% were secondary education. With respect to occupation, the highest percentage of elderly persons 43% were belong to others in experimental group and in control group the majority of elderly persons 50% were in non professional. With regard to diet pattern the majority of elderly persons 43% were belong mixed in the experimental group, whereas in control group majority of elderly persons 37% were non vegetarian. With regard to body Mass Index (BMI), majority of the elderly persons 37% were belong to overweight, whereas in control group, majority of elderly persons 60% were belongs to Overweight category. With regard to duration of illness, majority of elderly persons in experimental group and control group were more than 1 year to 2 years of illness. With regard to duration of treatment, majority i.e., 70% were taking treatment from 6months to 1year in the experimental group and in control group 60% were taking treatment from 6months to 1year. The reliability score was $r = 0.82$ for Numerical Pain Intensity Rating Scale and $r = 0.87$ for quality of life scale. That indicated acceptable degree of reliability. Hence the revealing the tool is feasible for administration for the main study. The tool was found to be reliable and feasible. The obtained level of joint pain of elderly persons in experimental group and control group out of 30. Experimental group majority i.e., 80% of them moderate pain. In control group majority i.e., 47% of them moderate pain. The finding shows that pre-test level of pain in experimental group were having moderate pain and the post-test level of pain had decreased in the experimental group whereas in control group were having moderate pain, whereas the post-test level of pain had no significant decrease in the control group. The paired 't' test value to compare with the pre – test and post – test on level of pain among elderly persons in the experimental group, it was found that the mean pre – test of the numerical pain scale was 5.5 with standard deviation of 1.11 and the post – test mean 2.5 with standard deviation of 1.1 and in the calculated 't' value was 10.40 at 29 degrees of freedom where more than the tabulated 't' value was 2.05 and were found to be significant at 0.05 level of significance. Hence, the research hypothesis (H3) was accepted and null hypothesis (H0) was rejected. The paired 't' test value to compare with the pre – test and post

– test on level of pain among elderly persons in the control group, it was found that the mean pre – test of the numerical pain scale was 5 with standard deviation of 2.04 and the post – test mean 5.2 with standard deviation of 2.19 and in the calculated ‘t’ value was -0.36 at 29 degrees of freedom where less than the tabulated ‘t’ value was 2.05 and were found to be significant at 0.05 level of significance. Hence, the research hypothesis (H4) was accepted and null hypothesis (H0) was rejected. The association between the pre test quality of life in experimental group and control group with the selected demographic variables like age, gender, qualification, occupation, diet pattern, body mass index, duration of illness, duration of treatment. While analyzing the statistical non significance at (P<0.05) level it shows that there was a no significant association between the pre-test quality of life in experimental group and control group with all the selected demographic variables of elderly persons. Hence, the research hypothesis (H1) was accepted and null hypothesis (H0) was rejected.

Conclusion: On the basis of study findings the investigator concluded that the effectiveness of Isometric exercises among elderly persons was effective in reduction of joint pain. Therefore the investigator felt that the importance of isometric exercise for the elderly persons to reduce the pain and improved the quality of life.

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Introduction:-

Problem Statement:

“A Quasi Experimental study to assess the effectiveness of isometric exercises on quality of life among the inmates of elderly persons with joint pain at selected hospital, Dehradun, Uttarakhand”

Objectives:-

1. To assess the level of joint pain among elderly persons in experimental group and control group before and after intervention.
2. To compare the effectiveness of isometric exercises on level of pain among osteoarthritis patients in experimental group and control group before and after intervention.
3. To associate the quality of life among elderly persons with joint pain in experimental group and control group with their selected demographic variables.

Hypothesis:

H₁: There will be a significant difference between the quality of life of experimental and control group after intervention and no significant difference before intervention.

H₂: There will be a significant difference in the quality of life of experimental group before and after intervention and no significant difference of quality of life in control group after and before intervention.

H₃: There will be a significant difference between the pain score of experimental and controlled group after intervention and no significant difference of pain before intervention.

H₄: There will be a significant difference in the pain score of experimental group before and after intervention and no significant difference of pain score in control group after and before intervention.

Methodology:-

The nature of the study was quasi experimental. This was conducted in selected hospitals at Dehradun. The conceptual framework used for this study is based on Roy’s Adaptation Model. The demographic variables for the study were age, gender, qualification, occupation, diet pattern, Body Mass Index, duration of illness, duration of treatment. The research design used for this study i.e., one group pre-test and post-test design. Non probability purposive sampling technique was used to select for 30 experimental group and 30 control group samples for the study. A numerical pain intensity rating scale and quality of life scale was used as a tool for data collection. The questionnaire consists of three sections i.e.

Section A: It consist of demographic data of the elderly persons with joint pain it includes - Age, Sex, Body mass index, Education, Occupation, Dietary pattern, Duration of illness and Duration of treatment

Section B had numerical pain intensity rating scale:

S.No.	Index Score	Description
1	0	No pain
2	1-3	Mild pain
3	4-6	Moderate pain
4	7-9	Severe pain
5	10	Worst pain

Section C had quality of life scale regarding joint pain.

S.No.	Index Score	Description
1	0-3	Fully functioning
2	4-7	Partially functioning
3	8-10	Functioning

The content validity was done by expert. The feasibility was ensured through a pilot study (n=6). The reliability of pilot study is $r=0.82$ for Numerical Pain Intensity Rating Scale and $r = 0.87$ for quality of life scale. The data was collected to assess the pre-test and post-test effectiveness of isometric exercises to reduce the joint pain among elderly persons. The data collected were analyzed and interpreted through descriptive and inferential statistics.

Results:-

Comparison of level of pain among elderly persons between experimental group and control group.

Major findings of the study were: n=60

S. No	Level of pain	Experimental Group		Control Group		Cal value	't' value
		Mean	Standard Deviation	Mean	Standard Deviation		
1.	Pain	2.5	1.11	5.2	2.19	1.84	2.05 (df = 29)

The post-test level of pain in experimental group was found that the mean value is 2.5 and the standard deviation is 1.11, whereas in control group mean value is 5.2, standard deviation is 2.19 and in the calculated 't' value was -0.36 at 29 degrees of freedom where less than the tabulated 't' value was 2.05 and were found to be non significant at 0.05 level of significance. 't' value was 2.05, it shows that there is significant reduction in post-test level of pain in experimental group than post-test level of pain in control group at $p<0.05$ level. Hence, the research hypothesis (H3) was accepted and null hypothesis (H0) was rejected.

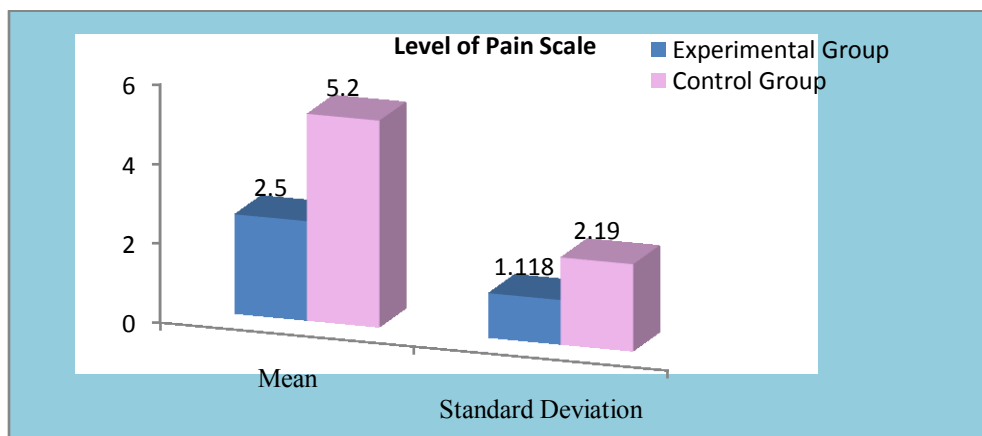


Fig:- Comparison of the post-test level of pain among elderly person in experimental group and control group.

Major findings of the study were:

Highest 53% were in the age group of 60 – 70 years in experimental group, whereas in control group majority of elderly persons 57% were in the age group of 71 - 80 years.

With respect to gender, majority of elderly persons were females in the experimental group and control group.

Based on the qualification, majority of elderly persons 47% were belong to secondary education in experimental group, whereas in control group majority of elderly persons 53% were secondary education.

With respect to occupation, the highest percentage of elderly persons 43% were belong to others in experimental group and in control group the majority of elderly persons 50% were in non professional.

With regard to diet pattern the majority of elderly persons 43% were belong mixed in the experimental group, whereas in control group majority of elderly persons 37% were non vegetarian.

With regard to body Mass Index (BMI), majority of the elderly persons 37% were belong to overweight, whereas in control group, majority of elderly persons 60% were belongs to Overweight category.

With regard to duration of illness, majority of elderly persons in experimental group and control group were more than 1 year to 2 years of illness.

With regard to duration of treatment, majority i.e., 70% were taking treatment from 6months to 1year in the experimental group and in control group 60% were taking treatment from 6months to 1year.

The reliability score was $r = 0.82$ for Numerical Pain Intensity Rating Scale and $r = 0.87$ for quality of life scale. That indicated acceptable degree of reliability. Hence the revealing the tool is feasible for administration for the main study. The tool was found to be reliable and feasible.

The obtained level of joint pain of elderly persons in experimental group and control group out of 30. Experimental group majority i.e., 80% of them moderate pain. In control group majority i.e., 47% of them moderate pain.

The finding shows that pre-test level of pain in experimental group were having moderate pain and the post-test level of pain had decreased in the experimental group whereas in control group were having moderate pain, whereas the post-test level of pain had no significant decrease in the control group.

The paired 't' test value to compare with the pre – test and post – test on level of pain among elderly persons in the experimental group, it was found that the mean pre – test of the numerical pain scale was 5.5 with standard deviation of 1.11 and the post – test mean 2.5 with standard deviation of 1.1 and in the calculated 't' value was 10.40 at 29 degrees of freedom where more than the tabulated 't' value was 2.05 and were found to be significant at 0.05 level of significance. Hence, the research hypothesis (H3) was accepted and null hypothesis (H0) was rejected.

The paired 't' test value to compare with the pre – test and post – test on level of pain among elderly persons in the control group, it was found that the mean pre – test of the numerical pain scale was 5 with standard deviation of 2.04 and the post – test mean 5.2 with standard deviation of 2.19 and in the calculated 't' value was -0.36 at 29 degrees of freedom where less than the tabulated 't' value was 2.05 and were found to be significant at 0.05 level of significance. Hence, the research hypothesis (H4) was accepted and null hypothesis (H0) was rejected.

The association between the pre test quality of life in experimental group and control group with the selected demographic variables like age, gender, qualification, occupation, diet pattern, body mass index, duration of illness, duration of treatment.

While analyzing the statistical non significance at ($P < 0.05$) level it shows that there was a no significant association between the pre-test quality of life in experimental group and control group with all the selected demographic variables of elderly persons. Hence, the research hypothesis (H1) was accepted and null hypothesis (H0) was rejected.

Conclusion:-

On the basis of study findings the investigator concluded that the effectiveness of Isometric exercises among elderly persons was effective in reduction of joint pain. Therefore the investigator felt that the importance of isometric exercise for the elderly persons to reduce the pain and improved the quality of life.

Nursing Implication:-

The result of this study proves that among elderly person joint pain had a significant effect, by increasing their knowledge regarding the use of isometric exercises in the management of joint pain. Hence it becomes the responsibility of health care person to instruct isometric exercise among elderly persons.

The finding of the study has several implications in the following fields. Like nursing education, nursing practice, nursing administration and nursing research.

Nursing Education:

1. The findings of the study emphasize the effect of isometric exercise on quality of life and pain.
2. The importance of exercise during the old age period can be taught to the nursing students and graduate nurses and this can be incorporated in the care of elderly persons.
3. This will help the peoples to cope with functional mobility pain and anxiety.

Nursing Practice:

1. Nurses play an important role in providing care to the elderly persons. The finding of the study indicates the benefit of exercise to old age people with joint pain.
2. The health team members should be encouraged to teach the exercise to the elderly persons.
3. To emphasize the present study to findings the elderly persons at hospitals and encourage there management to teach the exercise to the elderly persons.
4. Isometric exercise is cost – effective. So it can be implemented in nursing practice in all the settings.

Nursing Administration:

1. The nurse administrator should arrange for education programmer to nursing student regarding use and significance of isometric exercises in the management of joint pain and decrease their joint pain.
2. Nurse administrator should emphasis and encourages the nurse to contribute to the evolution of isometric exercises and services.
3. Nurse administrator can prepare the skilled nurses who can spend time with elderly persons in solving to reducing the joint pain.
4. Nurse administrator should arrange for regular continues nursing education programme for nurses regarding use and significance of isometric excecrics in the management of joint pain.

Nursing Research:

1. The investigator found unawareness of people about use of isometric excretes in the management joint pain hence the investigator felt need for doing research in this area to improve the knowledge of elderly persons in order to reduce joint pain.
2. Nursing Research should be continued on the need of the practice and effectiveness of isometric exercises among other setup also.
3. A similar study can be conducted with the community people.

Referances:-

Book Reference:

1. Adrienne Dill Linton, (2007), Introduction to Medical Surgical Nursing, (5th ed) New Delhi : Elsevier publication.
2. Basavanhappa, B.T. (2003). Medical Surgical Nursing, (1st ed). New Delhi : (3rd ed). London : Mosby Publications.
3. Brunner & Suddarth (2004) Text Book of Medical Surgical Nursing 10thEdition, Phladelphia Lippincott Williams & Wilkins P.No.1627.1628
4. Black. M & Hawks. J, (2005), Medical Surgical Nursing, clinical management for positive outcomes. (7th edition), Missouri: Saunders Publishers.

5. Brunner and Siddarth's (2011), Text book of medical and Surgical Nursing. (12th ed), New Delhi, Wolter and Kluwer Pvt Ltd.
6. F.A.Davis (1992) "Knee pain & Disability" 3rd Edition New Delhi Jaypee Brothers Publications P.No.149-154
7. John Crawford Adams, Davis L.Hamblen (2001) "Outlive of Orthopaedics, 13th edition, P.No.126.128. Churchill Livingstone, Harcourt Publishers Limited.
8. John Ebenezer (2000) Text Book of orthopedics 2nd edition, New Delhi, Jaypee Brothers, P.No.393.
9. Joyce M.Black (2009), Medical-Surgical Nursing, 8th edition, Missouri Elsevier Publications.
10. Jones A. Dorathy (1978), Medical Surgical Nursing, 1st edition, Mumbai: Gramhill

Internet Reference:-

1. Paulo June 2013 text book for osteoarthritis <http://www.interscience.urtey.com/ogi.bis>
2. Shahnawaz 2014 osteoarthritis guidelines <http://www.emedicine.ehealth.com/osteoarthritis>
3. Chaitow 2011 online content for osteoarthritis http://www.osteoarthritis.research_today.net William 2011 incidence report on osteoarthritis
4. Baker, Kristin et al., 2005 isometric exercise for osteoarthritis <http://www.clinicaltrials.gov>
5. Christopher M. Powers online reference of osteoarthritis <http://www.sportsmed.theclinics.com>
6. Ronald Melzack alternative treatment for knee pain <http://www.emedicine.medscape.com>
7. Ashraf 2011, arthritis treatment <http://www.arthritis-treatment-advice.com>
8. <http://www.pubmed.gov>
9. <http://www.mayoclinic.com/health/osteoarthritis>.