

EFFECTIVENESS OF HEAL NURSING STRATEGIES ON FUNCTIONAL ABILITY, PAIN AND QUALITY OF LIFE (QOL) OF ADULTS WITH KNEE OSTEOARTHRITIS: A GENDER BASED DIFFERENCE

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ABSTRACT

A quasi experimental study was conducted to assess the “EFFECTIVENESS OF HEAL NURSING STRATEGY ON FUNCTIONAL ABILITY, PAIN AND QUALITY OF LIFE OF ADULTS WITH KNEE OSTEOARTHRITIS” with 440 samples with 77 males in each group, 139 females and 141 females in experimental and control group respectively. The samples selected with convenience sampling technique at Sri Venkateshwaraa Medical College Hospital and Research Centre, Puducherry. The samples were allocated to experimental and control group after obtained written consent from each participants, the samples were assured confidentiality of data. Ethical clearance obtained from Institutional Ethical committee. The HEAL nursing strategy was implemented to the experimental group and routine hospital treatment was followed for the control group. Each samples demographic and clinical data collected using questionnaires and the level of pain, functional ability and quality of life was assessed with numerical pain scale, modified WOMAC functional ability scale and modified WHO quality of life scale respectively. The pretest was conducted after recruited the samples. The post test done at three points that is immediately after intervention, after one month and after 3 months. The results proved that the intervention is effective among both genders in experimental group.

Keywords:HEAL nursing strategy,Knee Osteoarthritis,Functional Ability, Pain, Quality of Life

INTRODUCTION

Osteoarthritis is a progressive degenerative disease of the bone affecting weight bearing joints, causing inflammation and edema which results in pain and restriction of movements in the affected joints. Limited use of affected joints worsens the disease progression causing total loss of joint function. Globally approximately 250 million people have osteoarthritis of the knee (3.6% of the population). It is estimated that 80% of the population have radiographic evidence of OA by age 65, although only 60% of those will have symptoms. In India osteoarthritis affects over 15 million Indians each year. About 20 years ago, osteoarthritis was known as a disease of the elderly affecting those above the age of 65 years. However, recently the Orthopedicians are increasingly diagnosing osteoarthritis among younger people in the age group of 35 – 55 years.

Osteoarthritis (OA) is a degenerative disease that affects 27 million American women. OA is more prevalent in women than men. Most women, with a diagnosis of OA reports discomfort in the knee, hip, back and wrist joints (Kodadek M, 2015).

STATEMENT OF THE PROBLEM

A study to evaluate the effectiveness of HEAL Nursing strategies on functional ability, pain and Quality Of Life (QOL) of adults with Knee osteoarthritis: Gender based analysis.

OBJECTIVES

- To assess the level of pain among control and experimental group based on gender
- To assess the level of functional ability among control and experimental group based on gender
- To assess the level of quality of life of adults with knee osteoarthritis among control and experimental group based on gender
- To evaluate the effect of HEAL Nursing strategies on functional ability among experimental group based on gender
- To evaluate the effectiveness of HEAL nursing strategies on pain among experimental group based on gender
- To evaluate the effectiveness of HEAL nursing strategies on Quality of life (QOL) of adults with knee osteoarthritis based on gender

METHODOLOGY

Research Approach: Quantitative approach was used to evaluate the effect of HEAL Nursing strategies.

Research Design: Quasi Experimental research design was used .One group manipulated with HEAL nursing strategy with One control group .

Research Setting: The study was conducted in the orthopedic wards of various hospitals at Puducherry.

Research Population: Patients diagnosed as knee osteoarthritis by clinical evidence or with radiological confirmation

Samples: Patients with clinical symptoms of knee osteoarthritis between 55-65 years attending SVMCH &RC.

Sample size: The sample size is 440. In that total samples, 216 samples for experimental group and 218 samples for control group excluded the dropouts.

Sampling techniques: Samples selected by non probability **convenience sampling** technique after obtaining the consent.

Sampling criteria:

Inclusion criteria:

- Patients with clinical symptoms of knee osteoarthritis
- Patients with Mild and Moderate Knee osteoarthritis
- Both male and female with clinical symptoms of knee osteoarthritis
- Patients who are willing to participate in this study

Exclusion criteria:

- Critically ill patients
- Patients admitted in ICU
- Patients with Septic Knee Osteoarthritis
- Patients with Acute Knee Injury
- Patients with Severe Osteoarthritis
- Patients posted for osteoarthritis corrective surgeries

TOOLS AND DESCRIPTIONS

PART I : Structured Questionnaire: It consisted of questions related to demographic and clinical information.

PART II: Visual Analogue Scale: It consist of 0-10 numerical value to measure the level of pain. The pain was categorized as mild, moderate and severe.

PART III: Modified WOMAC scale index: It Consists of 27 questions based on the modified Western Ontario-Mc Master University index scale (WOMAC). It consisting of 3 components designed to measure pain, stiffness and physical functions associated with osteoarthritis of the lower extremities by assessing 20 questions related to functional activities, 5 questions related to pain, 2 questions to stiffness of the joint. For each question the score ranges from 0-4. Highest score was given for extreme disability. The functional disability was categorized as mild, moderate, severe and extreme.

PART IV: Modified WHO QUALITY OF LIFE SCALE: It consist of 20 questions related to four domains like physical, psychological, social and environmental.

RELIABILITY OF THE TOOL:

- The test retest method was used to assess the reliability of the tools. The reliability score was 0.92 which shows that the tool is highly reliable

ETHICAL CONSIDERATION

- Prior to the collection of data written permission was obtained from the Institutional Ethical Committee. The selection of sample was based on inclusion criteria. Each individual subject was informed about the purpose of the study. Informed consent was obtained from the sample both orally and in written form. The subject had the freedom to withdraw the study at any time. No physical or psychological harm involved in this study.

RESULTS AND DISCUSSION

The data were tabulated and analyzed based on objectives using descriptive and inferential statistics. The results were discussed under five sections as detailed below.

SECTION I: FREQUENCY DISTRIBUTION OF DEMOGRAPHIC AND CLINICAL VARIABLES

Table no.1: Gender based frequency distribution of demographic variables

DEMOGRAPHIC VARIABLES		GROUPS			
		EXPERIMENT(216)		CONTROL(218)	
		MALE (77)	FEMALE (139)	MALE (77)	FEMALE (141)
Age (in years)	55 - 60	31	71	32	79
	61 - 65	46	68	45	62
Education	Illiterate	15	58	24	60
	Secondary	27	36	18	36
	Higher secondary	16	17	10	25
	Graduate	16	14	16	11
	Postgraduate	3	14	9	9
Occupation	Occupation with knee strain	58	95	50	99
	Occupation without knee strain	19	44	27	42
Socio Economic Status	Upper	14	8	10	16
	Middle	15	121	44	82
	Lower	48	10	23	43
Area of Residence	Urban	30	39	30	27
	Rural	47	100	47	114
Family history of osteo arthritis	Yes	16	24	25	18
	No	51	125	52	123

The above table shows that homogeneity of the both experimental and control group. It was confirmed using chi square.

Table no.2: Gender based frequency distribution of clinical variables

CLINICAL VARIABLES		GROUPS			
		EXPERIMENT(216)		CONTROL(218)	
		MALE (77)	FEMALE (139)	MALE (77)	FEMALE (141)
Type of Knee osteoarthritis	Mild	18	7	20	12
	Moderate	59	132	57	129
Knee affected	Right	46	44	59	38
	Left	31	95	18	103
Pain in knee joint	Yes	76	138	75	139
	No	1	1	2	0
Swelling over joints	Yes	70	128	78	132
	No	7	11	9	9
Stiffness in joints	Yes	72	130	73	130
	No	5	9	4	11
BMI	Normal (18-24.9)	29	14	20	15
	Over weight(25-29.9)	29	115	38	114
	Obese (>30)	19	10	19	12

History of Knee Injury	Yes	10	2	7	1
	No	67	137	70	140
Duration of illness	<1 year	24	15	21	12
	1-2 years	35	96	30	114
	2-3 years	12	16	18	12
	>3 years	6	12	8	3
Attained Menopause	Yes	0	139	0	141
	No	77	0	77	0

The above table shows that both the groups are homogeneous. It was confirmed using chi square test

SECTION II: FREQUENCY DISTRIBUTION BASED ON LEVEL OF PAIN, FUNCTIONAL ABILITY AND QUALITY OF LIFE

Table no.3: Gender based distribution of pain level among knee osteoarthritis patients

LEVEL OF PAIN	GROUPS			
	EXPERIMENTAL GROUP		CONTROL GROUP	
	MALE	FEMALE	MALE	FEMALE
MILD	0	0	0	0
MODERATE	2	2	3	2
SEVERE	65	128	62	134
WORST	10	9	12	5

The above table shows that majority of the females and males had severe level of pain in both the experimental and control groups. The homogeneity of the group was confirmed by the chi square test.

Table no.4: Gender based distribution of functional ability among knee osteoarthritis patients

FUNCTIONAL ABILITY SCORE	GROUPS			
	EXPERIMENTAL GROUP		CONTROL GROUP	
	MALE	FEMALE	MALE	FEMALE
MILD	0	0	0	0
MODERATE	0	0	0	0
SEVERE	8	5	6	9
EXTREME	69	134	71	132

The above table shows that majority of the females and males had extreme level of disability in both the experimental and control groups. The homogeneity of the group was confirmed by the chi square test.

Table no.5: Gender based distribution of quality of life score

QUALITY OF LIFE SCORE	GROUPS			
	EXPERIMENTAL GROUP		CONTROL GROUP	
	MALE	FEMALE	MALE	FEMALE
POOR	77	139	77	141
MODERATE	0	0	0	0
GOOD	0	0	0	0

The above table shows that majority of the females and males had poor quality of life in both the experimental and control groups. The homogeneity of the group was confirmed by the chi square test.

SECTION III: EFFECTIVENESS OF HEAL NURSING STRATEGY ON PAIN LEVEL, FUNCTIONAL ABILITY AND QUALITY OF LIFE

Table no.6: Gender based effectiveness of heal nursing strategy on pain level

CATEGORY	EXPERIMENTAL GROUP				CONTROL GROUP			
	MALE		FEMALE		MALE		FEMALE	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PRETEST	8.54	.87	8.43	.91	8.35	.91	8.34	.90
POST TEST	2.64	.92	2.88	.87	6.26	1.48	6.30	1.58
t – test	t=2.30 P=0.05* S				t=0.20 P=0.84 NS			

Table 6 shows that the HEAL nursing strategy was effective in reducing the level of pain among both genders in the experimental group.

Table no.7: Gender based effectiveness of heal nursing strategy on functional ability

CATEGORY	EXPERIMENTAL GROUP				CONTROL GROUP			
	MALE		FEMALE		MALE		FEMALE	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PRETEST	68.18	1.54	68.24	1.30	68.12	2.11	68.16	2.02
POST TEST	22.94	6.34	22.03	6.34	51.88	3.15	52.18	3.65
t – test	t=0.98 P=0.32 S				t=0.43 P=0.66 NS			

Table 7 shows that the HEAL nursing strategy was effective in improving the functional ability among both genders in the experimental group.

Table no.8: Gender based effectiveness of heal nursing strategy on quality of life score

CATEGORY	EXPERIMENTAL GROUP				CONTROL GROUP			
	MALE		FEMALE		MALE		FEMALE	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PRETEST	34.56	1.51	34.50	1.46	35.18	2.18	34.34	2.29
POST TEST	77.60	2.01	76.49	2.17	40.81	2.53	40.57	2.74
t – test	t=2.94 P=0.01** S				t=0.89 P=0.37NS			

Table 8 shows that the HEAL nursing strategy was effective in improving the quality of life among both genders in the experimental group.

DISCUSSION

The first objective of the study was to assess the level of pain among the male and female samples in both the groups. The study results proved that in pretest majority of the samples that is in experimental group 65 males, 128 females had severe pain with the mean and SD of 8.54 ± 0.87 and 8.43 ± 0.91 respectively. In

control group 62 males and 134 females had severe pain with the mean and SD of 8.35 ± 0.91 and 8.34 ± 0.90 respectively. After 3rd month the post test mean pain score was 2.64 ± 0.92 and 2.88 ± 0.87 among experimental group males and females respectively. Similarly the post test mean pain score was 6.26 ± 1.48 and 6.30 ± 1.58 among males and females in control group. The result is consistent with the **Elboim-Gabyzon M**, in their research proved that Female subjects had higher levels of knee pain and lower functional performance. In contrast, no significant gender-related differences were determined in any of the performance-based measures. Similarly **Zobel I** (2016) stated in the study that the pain is the main symptom that drives individuals with knee OA to seek medical care and a recognized antecedent to disability and eventually joint replacement. Evidence shows that patients with symptomatic OA experience fluctuations in pain severity. Mechanical insults to the knee such as injury and buckling may contribute to pain exacerbation.

The second objective of the study was to assess the level of functional ability among the male and female samples in both the groups. The study results proved that in pretest majority of the samples that is in experimental group 69 males, 134 females had extreme disability with the mean and SD of 68.18 ± 1.54 and 68.24 ± 1.30 respectively. In control group 71 males and 132 females had extreme disability with the mean and SD of 68.12 ± 2.11 and 68.16 ± 02.02 respectively. After 3rd month the post test mean functional ability score was 22.994 ± 6.34 and 22.03 ± 6.34 among experimental group males and females respectively. Similarly the post test mean functional ability score was 51.88 ± 3.15 and 52.18 ± 3.65 among males and females in control group.

The third objective of the study was to assess the Quality of Life among the male and female samples in both the groups. The study results proved that in pretest majority of the samples that is in experimental group 77 males, 139 females had poor Quality of Life with the mean and SD of 34.56 ± 1.51 and 34.50 ± 1.46 respectively. In control group 77 males and 141 females had extreme disability with the mean and SD of 35.18 ± 2.18 and 34.34 ± 02.29 respectively. After 3rd month the post test mean Quality of Life score was 77.60 ± 2.01 and 76.49 ± 2.17 among experimental group males and females respectively. Similarly the post test mean Quality of Life score was 40.81 ± 2.53 and 40.57 ± 2.74 among males and females in control group.

The fourth objective of the study was to assess the effectiveness of HEAL nursing strategy on level of pain among experimental group based on gender. The t – value **2.30** which was greater than tabulated value at **P<0.05** indicates that the intervention was effective for both the gender in reducing the level of pain. Similarly Majid N(2015) stated that orthopedic Educational intervention .Kappetijn O similarly stated that the combined protocol is effective in reducing the pain.

The fifth objective of the study was to assess the effectiveness of HEAL nursing strategy on level of functional ability among experimental group based on gender. The t – value 0.98 which was greater than tabulated value at **P<0.05** indicates that the intervention was effective for both the gender in promoting the functional ability. Laufer Y research supported that exercise programme in improving the functional movement among knee osteoarthritis patients with 3 months followup. Similarly Lee FI supported that individual made exercises can improve the functional ability.

The sixth objective of the study was to assess the effectiveness of HEAL nursing strategy on quality of life among experimental group based on gender. The t – value **2.94** which was greater than tabulated value at **P < 0.01** indicates that the intervention was effective for both the gender in promoting the quality of life.

CONCLUSION

The study concludes that the HEAL nursing strategy was effective in reducing the level of pain, improves functional ability and quality of life among both gender with knee osteoarthritis.

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