Research Article **ISSN: 2581-8015**

International Journal of Nursing and Healthcare Research

Journal home page: www.ijnhr.com

https://doi.org/10.36673/IJNHR.2024.v08.i02.A08

EFFECTIVENESS OF GINGER COMPRESS IN REDUCING LOW BACK PAIN AMONG ADULT WOMEN IN URBAN CHOOLAI – CHENNAI

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ABSTRACT

A quantitative, randomized control trial was conducted to assess the effectiveness of ginger compress in alleviating low back pain among adult women in Urban Choolai, Chennai. Sixty participants with low back pain were randomly selected and divided into two groups: an experimental group receiving ginger compress and a control group continuing routine interventions. Pain levels were assessed pre- and post-intervention using the numerical pain rating scale. A significant mean difference in pain reduction was observed: 41.6% in the experimental group compared to 10% in the control group. Findings demonstrated the potential of ginger compress as a cost-effective, natural remedy for low back pain.

KEYWORDS

Ginger compress, Low back pain, Adult women and Randomized control trial.

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INTRODUCTION

Low back pain is a pervasive condition affecting individuals across all age groups, significantly impacting quality of life and functionality[1]. Low back pain (LBP) is a pervasive issue among women, with prevalence rates significantly higher than in men across various age groups. During the reproductive years, musculoskeletal disorders are a primary cause of LBP in women, often related to hormonal fluctuations, physical strain, and lifestyle factors[2]. A study conducted in a secondary care hospital in Bangladesh highlighted that occupational stress, inadequate ergonomic practices and lack of

physical activity are key contributors to the development of LBP among women[3].

Moreover, the transition into menopause is another critical period when the prevalence of LBP increases among women, surpassing that of age-matched men. This heightened susceptibility is attributed to hormonal changes, particularly the decline in estrogen levels, which negatively affects bone density and musculoskeletal health[4]. Gender-based analyses further reveal that psychosocial factors and caregiving responsibilities also play a significant role in the higher incidence of LBP in women[5]. This multifactorial etiology underscores the need for gender-sensitive approaches to LBP management, integrating both pharmacological and non-pharmacological interventions tailored to women's unique physiological and lifestyle needs. Among the myriad of pain management strategies, ginger compresses have emerged as a notable alternative for pain relief, particularly in elderly populations suffering from conditions like rheumatoid arthritis and osteoarthritis[6].

Research indicates that ginger compresses not only alleviate musculoskeletal pain but can also achieve results comparable to traditional pharmacological treatments. For instance, one study demonstrated a remarkable decrease in pain scores from an average of 6.07 to 2.79 in elderly patients with rheumatic pain following ginger compress therapy[7]. When compared to other natural methods such as heated compresses, ginger compresses consistently deliver superior outcomes, as evidenced by studies conducted in Gaura Village, West Sumba District, Indonesia, in 2023.

The mechanism of action behind ginger compresses lies in their ability to provide warmth, which dilates blood vessels, relaxes muscles, and potentially blocks pain signals from reaching the brain[8]. Moreover, these compresses are often integrated with complementary therapies such as kinescoping to enhance their efficacy, as shown in osteoarthritis management[9].

While ginger compresses demonstrate substantial potential in reducing pain, their effectiveness may vary among individuals[10]. Factors such as personal preference for pharmacological interventions, which offer rapid action and convenience, also play a role in treatment decisions. Nonetheless, ginger compresses remain a promising, culturally embedded, and cost-effective option that warrants further exploration to establish standardized treatment protocols.

This study investigates the effectiveness of ginger compress in alleviating low back pain among adult women in Urban Choolai, Chennai, providing insight into its role as a natural alternative in contemporary pain management practices.

Statement of the Problem

A study to evaluate the effectiveness of ginger compress in reducing low back pain among adult women in Urban Choolai, Chennai.

Objectives

To assess the prevalence of low back pain among adult women.

To evaluate the degree of low back pain before and after the administration of ginger compress.

To explore the association between demographic variables and the degree of low back pain.

Hypotheses

H1: There is a significant reduction in pain levels post-ginger compress administration compared to pre-intervention.

H2: There is a significant association between selected demographic variables and the degree of low back pain pre- and post-intervention.

MATERIAL AND METHODS

Research design

The research design selected for the present study is experimental research design. Pre-test, post-test only design. In this study the subjects are randomly assigned to either the experimental or the control group. The effect of the dependent variable on both the groups is seen before the treatment. Later, the treatment is carried out on experimental group only, and after treatment observation of dependent variable is made on both the groups to examine the effect of the manipulation of independent variable on the dependent variable.

Variables

Independent Variable - Ginger Compresses

Dependent Variable - Pain perception

Extraneous Variable - Age, Occupation, number of childbirth and other treatments.

Setting of the study

This study was conducted in urban area (Choolai) which belongs to the north Zone of Chennai Corporation and it is very near to urban health post. It has got four wards covering total population of 56,744. Totally there are 16 streets in choolai area. Among these 16 streets, 2 streets were selected by simple random technique, using lottery method to conduct the present study. The 2 streets which were selected to conduct the present study are T K Mudhali Street and Aryamuthu Mesthri Street.

Study population

Population is the entire aggregation of cases that meet a designed set of criteria. In this present study population are subjects who are having low back pain. The accessible population for the present study is clients having low back pain residing at Choolai. The total clients with low back pain from the selected streets in Choolai were 402.

Sample

In this present study the sample consisted of 60 subjects who were having non-specific low back pain. Simple random sampling technique was adopted to select the subjects.

Sample size

Sample consist a total number of 60 subjects with non-specific low back pain residing in Choolai area who were selected from 2 streets of Choolai namely T K Mudhali street, and Aryamuthu Mestri street.

Sampling Technique

Sampling technique used for the present study to select the streets was simple random technique by lottery method. The investigator conducted a survey in the Choolai area to identify the total number of clients with non-specific low back pain. In Choolai area 2 streets were surveyed and the total number of female clients with low back pain was 402. Each client in particular street had been numbered and sample had been selected by simple random sampling by lottery method in each street. Required number of low back pain clients was selected as the sample. The sample selection of each street is given below.

Criteria for sample selection

The sample was selected based on the following inclusion and exclusion criteria.

I Inclusion criteria

Clients with non-specific low back pain
Clients in the age group of 25-55 years
Only female clients.
Clients who speak and understand Tamil/English.
Clients who are willing to participate.

II Exclusion criteria

Clients with
Complications like gynecological problems, renal problem, cancer, tumors etc.
Contra indications like skin lesions or burns.
Unconsciousness
Surgeries of spine or back.

Description of tool

Pain levels were measured using the numerical pain rating scale, and demographic data were collected using structured questionnaires. Data were analyzed using descriptive and inferential statistics.

Data collection procedure

A quantitative, true experimental design was adopted. Sixty women meeting the inclusion criteria were selected through simple random sampling and allocated into experimental and control groups. The experimental group received ginger compress for five consecutive days, while the control group followed routine pain management practices.

RESULTS AND DISCUSSION

Demographic Profile

Participants in both groups were similar in terms of age, marital status, occupation, and education level. The majority of women with lower back pain were aged 46-55 years, married and unemployed.

Pre-Assessment Pain Levels

Pre-intervention assessments showed comparable levels of moderate to severe pain in both groups, with no statistically significant difference ($p=0.49$).

Post-Assessment Pain Levels

Post-intervention, the experimental group showed a significant reduction in pain levels, with 20% reporting no pain and 40% reporting mild pain, compared to the control group, where 46.7% continued to experience severe pain ($p=0.001$).

Effectiveness of Ginger Compress

The experimental group exhibited a 41.6% reduction in pain levels compared to a 10% reduction in the control group. Participants reported a soothing and relaxing effect from the ginger compress, reinforcing its effectiveness as a natural remedy.

Association between demographic variables and the degree of low back pain

The analysis of post-assessment pain levels revealed notable associations with demographic variables among the experimental group. Younger women aged 25-30 years experienced the highest pain relief, with 100% achieving full relief from ginger compress, followed by women aged 36–45 years, where 80% reported significant pain reduction. Occupational status also influenced outcomes, as working women demonstrated 100% pain relief, potentially due to better physical conditioning or adaptability to the intervention. Additionally, women who engaged in regular physical activities such as yoga or walking experienced complete (100%) pain relief, underscoring the complementary role of exercise in enhancing the effectiveness of ginger compress. These associations, assessed using the chi-square test, suggest that age, occupational activity, and exercise habits may significantly influence the therapeutic benefits of ginger compress in managing low back pain.

Discussion

The findings of this study demonstrate that ginger compress significantly reduces low back pain among adult women in Urban Choolai, Chennai. The experimental group, which received ginger compress, exhibited a 41.6% reduction in pain levels compared to a 10% reduction in the control group. These results align with existing research highlighting the efficacy of ginger compress in managing musculoskeletal discomfort.

The significant reduction in pain levels in the experimental group underscores the potential of ginger compress as a safe, cost-effective, and culturally acceptable alternative to pharmacological interventions. Unlike medications, which may cause side effects and dependency, ginger compress offers a holistic approach that aligns well with traditional practices and modern healthcare trends.

Table No.1: Demographic profile

S.No	Demographic variables		Group				Total	Chisquare test
			Experiment (n=30)		Control (n=30)			
			n	%	n	%		
1	Age	25 -30 yrs	3	10.0%	3	10.0%	6	□2=0.00P=1.00 DF=3
		31 -35 yrs	2	6.7%	2	6.7%	4	
		36 -45 yrs	10	33.3%	10	33.3%	20	
		46 -55 yrs	15	50.0%	15	50.0%	30	
2	Education	Primary	2	6.7%	2	6.7%	4	□2=1.81 P=0.62 DF=3
		Middle	15	50.0%	10	33.3%	25	
		HSc	11	36.7%	15	50.0%	26	
		Degree /diploma	2	6.7%	3	10.0%	5	
3	Occupation	Unemployed	16	53.3%	19	63.3%	35	□2=0.81P=0.66 DF=2
		laborer	9	30.0%	8	26.7%	17	
		Professional	5	16.7%	3	10.0%	8	
4	Monthly income	Rs.2000-3000	3	10.0%	3	10.0%	6	□2=1.61
		Rs.3001-4000	5	16.7%	2	6.7%	7	

		Rs.4001-5000	10	33.3%	10	33.3%	20	P=0.65 DF=3
		>Rs.5000	12	40.0%	15	50.0%	27	
5	Marital status	Married	26	86.7%	27	90.0%	53	□2=0.21 P=0.90 DF=2
		Divorced	1	3.3%	1	3.3%	2	
		Widow	3	10.0%	2	6.7%	5	
6	Age at marriage	Below 20	18	60.0%	21	70.0%	39	□2=0.92 P=0.63 DF=2
		20 - 25 yrs	8	26.7%	5	16.7%	13	
		26- 30 yrs	4	13.3%	4	13.3%	8	
7	Exercise	Yoga	2	6.7%	1	3.3%	3	□2=0.47 P=0.79 DF=2
		Walking	3	10.0%	4	13.3%	7	
		Nil	25	83.3%	25	83.3%	50	
8	Children	One	3	10.0%	2	6.7%	5	□2=0.36 P=0.83 DF=2
		Two	19	63.3%	21	70.0%	40	
		>Two	8	26.7%	7	23.3%	15	
9	Religion	Hindu	27	90.0%	28	93.3%	55	□2=0.21 P=0.64 DF=1
		Christian	3	10.0%	2	6.7%	5	
10	Type of Housing	Pacca house	8	26.7%	5	16.7%	13	□2=0.88 P=0.34 DF=1
		Semi pacca	22	73.3%	25	83.3%	47	
11	Total family members	< 4	19	63.3%	21	70.0%	40	□2=0.30 P=0.58 DF=1
		> 4	11	36.7%	9	30.0%	20	

Table No.2: Pre-Assessment pain levels

S.No	Pain score	Group				Chi square test
		Experiment		Control		
		n	%	n	%	
1	Moderate	11	36.7%	15	50.0%	□2=1.42 P=0.49 DF=2
2	Severe	15	50.0%	13	43.3%	
3	Unbearable	4	13.3%	2	6.7%	
4	Table Total	30	100.0%	30	100.0%	

Table No.3: Post-Assessment pain levels

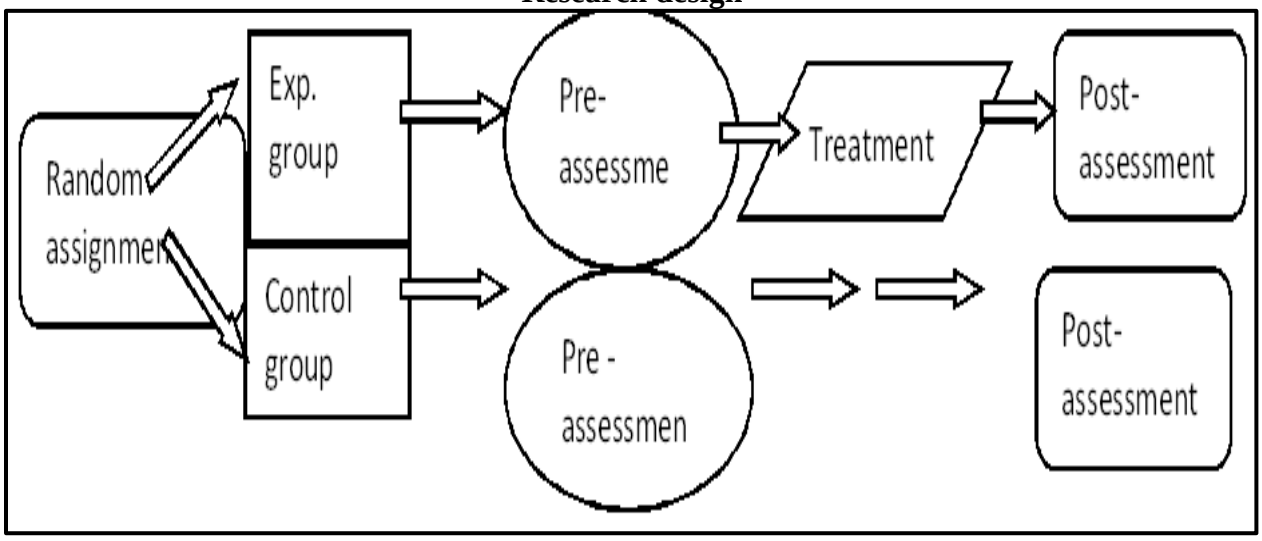
S.No	Pain score	Group				Chi square test
		Experiment		Control		
		n	%	n	%	
1	No pain	6.0	20.0%			□2=24.00 P=0.001***DF=3
2	Mild	12.0	40.0%	4.0	13.3%	
3	Moderate	12.0	40.0%	12.0	40.0%	
4	Severe			14.0	46.7%	
5	Table Total	30.0	100.0%	30.0	100.0%	

Table No.4: Association between post-assessment level of pain and demographic variables (Experiment group)

S.No	Demographic variables		Post-assessment level of pain				Total	Chi square test
			No pain/Mild		Moderate			
			n	%	n	%		
1	Age	25 -30 yrs	3	100.0%	0	0.0%	3	χ2=9.44 P=0.02*DF=3
		31 -35 yrs	2	50.0%	0	0.0%	2	
		36 -45 yrs	8	80.0%	2	20.0%	10	

		46 -55 yrs	5	33.3%	10	66.7%	15	
2	Education	Primary	1	50.0%	1	50.0%	2	$\chi 2$=2.66 P=0.44 DF=3
		Middle	10	66.7%	5	33.3%	15	
		HSc	5	45.5%	6	54.5%	11	
		Degree/diploma	2	100.0%	0	0.0%	2	
3	Occupation	Housewife	6	37.5%	10	62.5%	16	$\chi 2$=7.89 P=0.02* DF=2
		laborer	7	77.8%	2	22.2%	9	
		Professional	5	100.0%	0	0.0%	5	
4	Monthly income	Rs.2000-3000	1	33.3%	2	66.7%	3	$\chi 2$=2.36 P=0.50 DF=3
		Rs.3001-4000	4	80.0%	1	20.0%	5	
		Rs.4001-5000	5	50.0%	5	50.0%	10	
		>Rs.5000	8	66.7%	4	33.3%	12	
5	Marital status	Married	15	57.7%	11	42.3%	26	$\chi 2$=0.78P=0.67 DF=2
		Divorced	1	100.0%	0	0.0%	1	
		Widow	2	66.7%	1	33.3%	3	
6	Age at marriage	Below 20	12	66.7%	6	33.3%	18	$\chi 2$=0.83 P=0.65 DF=2
		20 - 25 yrs	4	50.0%	4	50.0%	8	
		26- 30 yrs	2	50.0%	2	50.0%	4	
7	Exercise	Yoga	2	100.0%	0	0.0%	2	$\chi 2$=6.00 P=0.05*DF=2
		Walking	3	100.0%	0	0.0%	3	
		Nil	10	40.0%	15	60.0%	25	
8	Children	One	3	100.0%	0	0.0%	3	$\chi 2$=2.45 P=0.29 DF=2
		Two	10	52.6%	9	47.4%	19	
		>Two	5	62.5%	3	37.5%	8	
9	Religion	Hindu	15	55.6%	12	44.4%	27	$\chi 2$=2.22 P=0.13 DF=1
		Christian	3	100.0%	0	0.0%	3	
10	Type of Housing	Pacca house	5	62.5%	3	37.5%	8	$\chi 2$=0.02P=0.89 DF=1
		Semipacca	13	59.1%	9	40.9%	22	
11	Total family members	< 4	13	68.4%	6	31.6%	19	$\chi 2$=1.53 P=0.22 DF=1
		> 4	5	45.5%	6	54.5%	11	

Research design



CONCLUSION

This study reinforces the role of ginger compress as an effective intervention for managing low back pain. By integrating such natural remedies into healthcare practices, patients can benefit from a holistic approach that reduces reliance on pharmacological treatments. The findings contribute to the growing evidence supporting ginger compress as a viable alternative in pain management, encouraging its wider adoption and further exploration in clinical and community settings.

ACKNOWLEDGEMENT

The author is sincerely thankful to Department of Community Health Nursing, CSI Jeyaraj Annapackiam College of Nursing, Madurai, Tamil Nadu, India for providing the facilities to carry out this research work.

CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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Please cite this article in press as: Ruth Johnson and Jothi Sophia C. Effectiveness of ginger compress in reducing low back pain among adult women in Urban Choolai – Chennai, *International Journal of Nursing and Healthcare Research*, 8(2), 2024, 54-60.