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Effectiveness of Dorsal Stretching Exercises on Level of Lower Back Pain among Premenopausal Women Residing in Selected Urban Community.

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Abstract

Low back pain (LBP) is one of the most prevalent medical complaints, affecting nearly every individual at some point in his or her lifetime. At any given time, it is estimated that up to one-third of the population is experiencing some form of back discomfort that impacts the quality of life by interfering with recreational activities, daily living routines, and a person's ability to work productively. Moreover, it is one of the most common reasons that people seek care from medical providers.

OBJECTIVE: To assess the effectiveness of dorsal stretching exercises on level of lower back pain among premenopausal women residing in selected urban community.

METHODOLOGY: The researcher used a quantitative research approach in the present study. The research design that is chosen for this study is Quasi experimental non-equivalent control group design. Premenopausal women in selected areas all over Maharashtra during the study period. The sample was comprised of sixty premenopausal women from selected urban community areas in Maharashtra. Non-probability, purposive sampling technique. The setting was an urban community area. The investigator developed the tool after updating knowledge and receiving relevant literature. The researcher used a numerical rating pain scale to assess the level of lower back pain among premenopausal women in selected urban communities.

The main study was also done for 27 days the dorsal stretching exercises were performed on the experimental group of 30 premenopausal women and were not administered to a control group of 30 premenopausal women. The posttest was collected at 27 th day.

RESULT: The analysis of the study was done using descriptive and inferential statistics. The master sheet was prepared and coding of the responses was done. The data was presented in the form of tables and charts. Statistics were performed with the help of paired t-tests, and chi-square tests.

The distribution of respondents according to the pre-test and post-test levels of lower back pain among premenopausal women residing in a selected urban community from the experimental group reveals a significant reduction in pain levels following the intervention. In the pre-test, most respondents (86.67%) experienced moderate pain (04-06), while only 13.33% reported mild pain (1-03).

None of the participants experienced severe pain (07-10) or were pain-free (00). After the implementation of the intervention, the post-test results showed a considerable improvement, with 76.67% of respondents experiencing mild pain (1-03) and only 23.33% reporting moderate pain (04-06). No respondents reported severe pain or no pain. This data indicates that the intervention was effective in reducing the intensity of lower back pain among

premenopausal women, with most respondents experiencing mild pain in the post-test as compared to the pre-test.

The distribution of respondents according to the pre-test and post-test levels of lower back pain among premenopausal women residing in a selected urban community from the control group (N=30) indicates a worsening of pain levels over time in the absence of an intervention. In the pre-test, most respondents (70.00%) reported moderate pain (04-06), while• 30.00% experienced mild pain (1-03). No participants reported severe pain (07-10) or were pain-free (00). However, in the post-test, the proportion of respondents with moderate pain increased• to 83.33%, while those experiencing mild pain reduced to 10.00%. Notably, 6.67% of the respondents progressed to the severe pain (07-10) category.

These findings suggest that without intervention, the severity of lower back pain tends to worsen among premenopausal women. The increase in moderate and Severe pain levels in the control group highlight the necessity of effective pain management strategies to alleviate lower back pain in this population.

Paired ‗t' value of pre and post-test level of lower back pain among premenopausal women residing in selected urban communities in the Experimental group. The statistical analysis of the pre-test and post-test levels of lower back pain in the experimental group revealed a paired t-value of 8.71, which is much higher than the critical XV table value of 2.045 at df = 29. The corresponding p-value for the calculated t-value is 0.001, indicating that the result is highly significant.

This demonstrates a statistically significant reduction in the level of lower back pain among premenopausal women in the experimental group following the intervention. The exceptionally high t-value reflects the consistent decrease in pain levels across all participants, suggesting that the intervention had a strong and uniform effect in alleviating lower back pain. Since the p-value (0.001) is less than 0.05, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted, confirming that the intervention was effective in reducing lower back pain.

Paired ‗t' value of pre and post-test levels of lower back pain among premenopausal women residing in selected urban communities from the control group. The statistical analysis of the pre-test and post-test levels of lower back pain in the control group revealed a paired t-value of 0.16, which is much lower than the critical table value of 2.045 at df = 29. The corresponding p-value for the calculated t-value is 0.87, indicating that the result is not statistically significant.

This demonstrates that there was no significant reduction in the level of lower back pain among premenopausal women in the control group. The very low t-value And high p-value suggest that the intervention had no measurable impact on pain levels. Since the p-value is greater than 0.05, the null hypothesis (H0) is accepted, indicating that there is no significant difference in lower back pain levels between the pre-test and post-test in the control group. Unpaired ‗t' value of the post-test level of lower back pain among premenopausal women residing in selected urban communities from Experimental and control groups. The statistical analysis of the post-test levels of lower back pain between the experimental and control groups revealed an unpaired t-value of 5.48, which is significantly higher than the critical table value of 2.001 at df = 58. The corresponding p-value for the calculated t-value is 0.001, indicating that the result is highly significant.

This demonstrates a statistically significant difference in the level of lower back pain between the experimental and control groups following the intervention. The substantial t-value suggests that the intervention was effective in reducing lower back pain among premenopausal women in the experimental group. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted. The alternative hypothesis is accepted.

KEY WORDS: dorsal stretching exercises, level of lower back pain, premenopausal women.

INTRODUCTION

Musculoskeletal pain is pervasive throughout the population. In general, musculoskeletal disorders have increased by 30% from 1990 to 2019 according to the Global Burden of Disease Study. The World Health Organization (WHO) reports the following key facts regarding musculoskeletal conditions: ―(a) approximately 1.71 billion people have musculoskeletal conditions worldwide; (b) among musculoskeletal disorders, low back pain causes the highest-burden with a prevalence of 568 million people; and (c) musculoskeletal conditions are the leading contributor to disability worldwide, with low back pain being the single leading cause of disability in 160 countries.‖ It has been suggested that a combination of flexibility training, muscle strengthening, and movement reeducation may reduce musculoskeletal pain and discomfort 1 The International Association for the Study of Pain defined pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. It is a major symptom in many medical conditions, and can significantly interfere with a person's quality of life and general functioning 2 Low back pain (LBP) is one of the most prevalent medical complaints, affecting nearly every individual at some point in his or her lifetime. At any given time, it is estimated that up to one-third of the population is experiencing some form of back discomfort that impacts the quality of life by interfering with recreational activities, daily living routines, and a person's ability to work productively. Moreover, it is one of the most common reasons that people seek care from medical providers.

Low back pain creates a substantial financial burden on individuals, families, and communities and on countries, as a whole. In India, most of the low-income group people are engaged in jobs with strenuous physical activity, which may increase the risk of low back pain and disability. In Indian society, family members and relatives play an important role in one's life, especially in the life of a woman. There is always physical stress from the strenuous work that a rural woman has to undergo every day. This may result in chronic pain in different parts of the body, especially lower back pain.

BACKGROUND OF STUDY

One of the most prevalent health issues in the general public, low back pain is a key contributor to disability and has a negative impact on well-being and productivity at work. One may experience acute, sub-acute, or chronic low back discomfort. Despite various risks, Although certain characteristics, such as age, body height, obesity, depressed moods, and occupational posture, have been linked to low back pain, the exact causes of the condition are still unknown and diagnosis is challenging. Using a modified Oswestry low back pain disability questionnaire and a numerical pain scale, a community-based cross-sectional study was carried out in Pondicherry, India (2016) to determine the prevalence of low back pain and its relationship to quality of life and disability among 250 women aged 30-65. The results showed that 60.9% of the women had low back pain with moderate disability. Both genders and all age groups might have low back discomfort. The majority of people have excruciating back pain at some point in their lives. Back pain in the soft tissues is very prevalent in adults; many people have their first bouts of low back pain in their late teens or early twenties, and the episode often recurs throughout adult life, developing into a chronic disease.

Low back pain (BP) is a common health problem among adults of working age population and its prevalence or incidence increases with increasing age. The purpose of this review was to examine the real-world prevalence or incidence of LBP. A systematic review of the literature was conducted using the PRISMA guideline. Allied and Complementary Medicine Database, Cumulative Index of Nursing and Allied Health Literature, MEDLINE, Sport Discuss, and Scopus electronic databases were searched using specially developed search strategies to identify studies using patients' electronic medical records published in English up to February 2019. The quality of the included studies was assessed using a tool that consists of ten items addressing the risk of bias. The search yielded 756 published studies, of which 13 were deemed relevant and were included in this review. The included studies reported incidence or prevalence data from Canada, the United States of America (USA), Sweden, Belgium,

Finland, Israel, and the Netherlands. All the included studies were assessed to be methodologically sound (low risk of bias). The prevalence and incidence of LBP ranged from 1.4 to 20.0% and 0.024-7.0%, respectively. Three studies reported that the Odds of LBP in the male patient were higher than their female counterparts (odds ratio > 1; range 1.11-17.29). Nine studies identified the risk factors of LBP to be age, sex, and race. The remaining four studies also listed high-intensity physical activity, high spinal load, lifting, bending, and twisting as the risk factors for LBP. The results of this study highlighted that there is a substantial difference between studies that estimate the prevalence and incidence of LBP. This finding could inform healthcare policymakers to critically examine the data sources of prevalence and incidence studies; this in return might help with resource allocation to manage the condition.

NEED OF STUDY

A frequent condition affecting the back's muscles, nerves, and bones is low back pain (LBP). Pain can range from a slow, on-going aching to an abrupt, intense sensation. Acute back pain is defined as pain that lasts less than six weeks; sub-chronic pain lasts between six and twelve weeks; and chronic pain lasts more than twelve weeks. Depending on the underlying reason, the ailment can be further characterized as referred pain, non-mechanical pain, or mechanical pain.

Low back pain symptoms typically go better within a few weeks after beginning, with 40– 90% of patients feeling fully recovered by six weeks. Ages 40 to 80 are the most prevalent age range for low back pain sufferers, and as the population ages, more people are predicted to Be impacted overall. Modern women spend one-third of their lives in menopause as their life expectancy rises. Compared to males, women experience chronic pain more frequently, and this prevalence rises with age. Whelan et al. state that even 80% of women have pain along with other symptoms throughout the premenopausal phase, which is typically described as the 45–55 age range. Postmenopausal women spend one-third of their lives in menopause as their life expectancy rises.

Health Improvement: Lower back pain is a prevalent health issue, especially among premenopausal women. Understanding the effectiveness of dorsal stretching exercises can provide valuable insights into non pharmacological interventions for managing and potentially alleviating this pain.

Quality of Life: Lower back pain can significantly impact an individual's quality of life, affecting their ability to perform daily activities, work, and engage in leisure activities. By investigating the effectiveness of dorsal stretching exercises, researchers can explore ways to improve the quality of life for premenopausal women experiencing this type of pain.

Preventive Health Measures: Understanding the impact of dorsal stretching exercises on lower back pain among premenopausal women can also have implications for preventive healthcare. If proven effective, these exercises could be recommended as a preventive measure to reduce the incidence or severity of lower back pain in this demographic group.

Women are found to be around 50% which is quite higher when compared to males and is a growing major health concern. The point prevalence of low back pain in Asian countries is around 28.5% Women in this age group are highly active in their daily lives, are exposed to various stresses, and are also more prone to LBP due to the nature of their occupation. By the time, middle age is reached, the bone strength, muscle elasticity, and muscle tone start to decline. The discs in the spine become drier and less flexible making them less able to cushion the vertebrae. This degeneration makes the spinal canal narrower leading to low back pain.

The most obvious benefit of exercise is its ability to improve or maintain musculoskeletal and cardiovascular function, exercise may be useful for improving back function for patients with low back pain with this goal in mind, and exercise-based spine rehabilitation programs are 5 typically designed around the goals of strengthening the back, increasing back flexibility, and improving cardiovascular fitness.

METHODOLOGY

The current research was used to assess the Effectiveness of dorsal stretching exercises on level of lower back pain among premenopausal women residing in selected urban community.

The researcher used a quantitative research approach in the present study. The research design that is chosen for this study is Quasi experimental non-equivalent control group design. Premenopausal women in selected areas all over Maharashtra during the study period. The sample was comprised of sixty premenopausal women from selected urban community areas in Maharashtra. Non-probability, purposive sampling technique. The setting was an urban community area. The investigator developed the tool after updating knowledge and receiving relevant literature. The researcher used a numerical rating pain scale to assess the level of lower back pain among premenopausal women in selected urban communities.

The main study was also done for 27 days the dorsal stretching exercises were performed on the experimental group of 30 premenopausal women and were not administered to a control group of 30 premenopausal women. The posttest was collected at 27 th day.

PROCEDURE FOR DATA COLLECTION

1. Approval from the research committee members and written permission from the head of the institution to conduct research was obtained.

2. Selected mild and moderate levels of lower back pain of premenopausal women.

3. The purpose, scope, and need of the research are explained to the participants.

4. Informed consent (written) was obtained from the participants.

5. Assess the pre-interventional level of lower back pain of both experimental and control groups by numerical rating pain scale.

6. On 1st day perform dorsal stretching exercises only experimental group.

7. On the 27th day assess post post-interventional level of lower back pain of both the experimental and control group by numerical rating pain scale.

RESULT

FINDINGS RELATED TO THE DEMOGRAPHIC DATA OF PARTICIPANTS

Section I Description of sample based on their demographic data.

Age: The percentage-wise distribution of respondents according to their age reveals that the respondents were spread across three age groups. The highest percentage (41.67%) of respondents were in the age group of 35-38 years, followed by 33.33% in the 39-42 years age group, and 25.00% in the 43-45 years age group. This indicates that while the respondents were fairly distributed across these age categories, a relatively higher proportion belonged to the 35-38 years age group.

Type of diet: The percentage-wise distribution of respondents according to their dietary habits reveals that the highest proportion (43.33%) followed a mixed diet, consuming both XIII vegetarian and non-vegetarian food. This was followed by 36.67% of respondents who adhered to a purely vegetarian diet, while the lowest percentage (20%) comprised those who were exclusively non-vegetarian. This indicates that the majority of respondents preferred a diet that included both vegetarian and non-vegetarian food.

Education: The percentage-wise distribution of respondents based on their educational qualifications shows that the highest percentage (35%) of respondents had completed primary education. This was followed by 25% who had received secondary education and 23.33% who had obtained a diploma. A smaller proportion (16.67%) had completed graduation, while none of the respondents had pursued education beyond graduation. This indicates that the majority of respondents had attained only primary or secondary education, with relatively fewer individuals progressing to higher education levels.

Occupation: The percentage-wise distribution of respondents based on their occupation indicates that the highest percentage (30%) were homemakers, followed by 26.67% who were self-employed. Private employees constituted 23.33% of the respondents, while government employees accounted for the lowest proportion at 20%. This distribution suggests that a significant portion of respondents were engaged in self-employment and homemaking, with fewer individuals working in the private and government sectors.

Section II

To assess the level of lower back pain among premenopausal women residing in selected urban community.

Table No: 4.6

Distribution of respondents according to pre-existing level of lower back pain among premenopausal women residing in selected urban community from experimental group and control group

(Experimental group-30 and Control group-30)

SN	LEVEL OF PAIN	Experimental group		Control group	
		F	%	F	%
1	00 (None)	00	00.00	00	00.00
2	1-03 (Mild)	04	13.33	09	30.00
3	04-06 (Moderate)	26	86.67	21	70.00
4	07-10 (Severe)	00	00.00	00	00.00

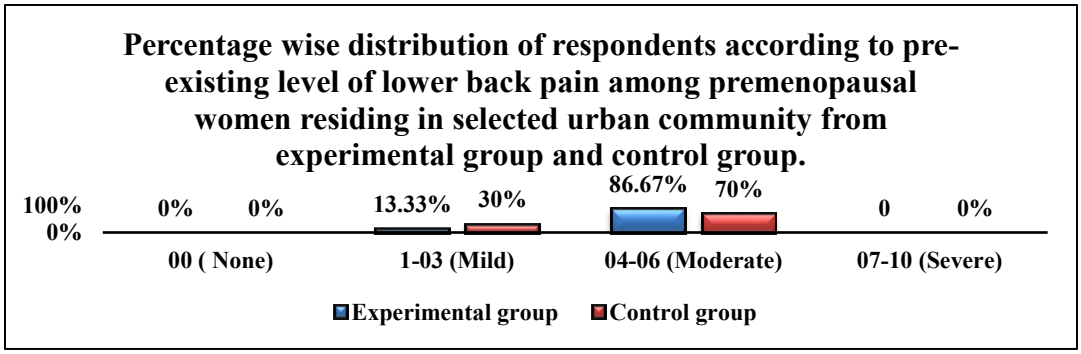

Fig no: 4.5

Bar diagram showing the percentage-wise distribution of respondents according to the pre-existing level of lower back pain among premenopausal women residing in selected urban community from the experimental group and control group.

The distribution of respondents according to the pre-existing level of lower back pain among premenopausal women residing in a selected urban community reveals that most participants in both the experimental and control groups experienced moderate pain (04-06). Specifically, 86.67% of respondents in the experimental group reported moderate pain, compared to 70% in the control group.

Additionally, a higher percentage of respondents in the control group (30%) experienced mild pain (1-03) compared to 13.33% in the experimental group. Notably, none of the respondents in either group reported experiencing severe pain (07-10) or no pain (00).

This data suggests that moderate pain was the most common level of discomfort among the participants, with a slightly greater proportion of respondents in the experimental group falling into this category.

Section III

To assess the pre-test and post-test level of lower back pain among premenopausal women residing in selected urban community from experimental group and control group

Table No: 4.7

Distribution of respondents according to pre-test and post-test level of lower back pain among premenopausal women residing in selected urban community from experimental group. (N=30)

SN	LEVEL OF PAIN	Pre-test		Post-test	
		F	%	F	%
1	00 (None)	00	00.00	00	00
2	1-03 (Mild)	04	13.33	23	76.67
3	04-06 (Moderate)	26	86.67	07	23.33
4	07-10 (Severe)	00	00.00	00	00

The distribution of respondents according to the pre-test and post-test levels of lower back pain among premenopausal women residing in a selected urban community from the experimental group reveals a significant reduction in pain levels following the intervention.

In the pre-test, most respondents (86.67%) experienced moderate pain (04-06), while only 13.33% reported mild pain (1-03). None of the participants experienced severe pain (07-10) or were pain-free (00).

After the implementation of the intervention, the post-test results showed a considerable improvement, with 76.67% of respondents experiencing mild pain (1-03) and only 23.33% reporting moderate pain (04-06). No respondents reported severe pain or no pain.

This data indicates that the intervention was effective in reducing the intensity of lower back pain among premenopausal women, with most respondents experiencing mild pain in the post-test as compared to the pre-test.

Table No: 4.8

Distribution of respondents according to pre-test and post-test level of lower back pain among premenopausal women residing in selected urban community from control group. (N=30)

SN	LEVEL OF PAIN	Pre-test		Post-test	
		F	%	F	%
1	00 (None)	00	00.00	00	00.00
2	1-03 (Mild)	09	30.00	03	10.00
3	04-06 (Moderate)	21	70.00	25	83.33
4	07-10 (Severe)	00	00.00	02	06.67

The distribution of respondents according to the pre-test and post-test level of lower back pain among premenopausal women residing in a selected urban community from the control group (N=30) indicates a worsening of pain levels over time in the absence of an intervention.

- In the pre-test, most respondents (70.00%) reported moderate pain (04-06), while 30.00% experienced mild pain (1-03). No participants reported severe pain (07-10) or were pain-free (00).
- However, in the post-test, the proportion of respondents with moderate pain increased to 83.33%, while those experiencing mild pain reduced to 10.00%. Notably, 6.67% of the respondents progressed to the severe pain (07-10) category.

These findings suggest that without intervention, the severity of lower back pain tends to worsen among premenopausal women. The increase in moderate and severe pain levels in the control group highlights the necessity of effective pain management strategies to alleviate lower back pain in this population.

Section IV:

To assess the effectiveness of dorsal stretching exercises on level of lower back pain among premenopausal women residing in selected urban community.

Table No: 4.9

Paired 't' value of pre and post-test level of lower back pain among premenopausal women residing in selected urban community in Experimental group. **(N=30)**

SN	Group	Mean	SD	't' value	P Value
1	Pre-test	4.87	1.06	**8.71**	**0.001**
2	Post-test	2.53	1.02		

DF=29, table value = 2.045 at p = ≤0.05

The statistical analysis of the pre-test and post-test levels of lower back pain in the experimental group revealed a paired t-value of 8.71, which is much higher than the critical table value of 2.045 at df = 29. The corresponding p-value for the calculated t-value is 0.001, indicating that the result is highly significant.

This demonstrates a statistically significant reduction in the level of lower back pain among premenopausal women in the experimental group following the intervention. The exceptionally high t-value reflects the consistent decrease in pain levels across all participants, suggesting that the intervention had a strong and uniform effect in alleviating lower back pain.

Since the p-value (0.001) is less than 0.05, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted, confirming that the intervention was effective in reducing lower back pain.

Table No: 4.10

Paired 't' value of pre and post-test level of lower back pain among premenopausal women residing in selected urban community from control group. **(N=30)**

SN	Group	Mean	SD	't' value	P Value
1	Pre-test	4.16	1.32	**0.16**	**0.87**
2	Post-test	4.2	1.32		

DF=29, table value = 2.045 at p = ≤0.05

The statistical analysis of the pre-test and post-test levels of lower back pain in the control group revealed a paired t-value of 0.16, which is much lower than the critical table value of 2.045 at df = 29. The corresponding p-value for the calculated t-value is 0.87, indicating that the result is not statistically significant.

This demonstrates that there was no significant reduction in the level of lower back pain among premenopausal women in the control group. The very low t-value and high p-value suggest that the intervention had no measurable impact on pain levels.

Since the p-value is greater than 0.05, the null hypothesis (H_0) is accepted, indicating that there is no significant difference in lower back pain levels between the pre-test and post-test in the control group.

Table No: 4.11

Un paired 't' value of post-test level of lower back pain among premenopausal women residing in selected urban community from Experimental and control group. (N=30)

SN	Group	Mean	SD	't' value	P Value
1	Experimental group	2.53	1.02	**5.48**	**0.001**

2	Control group	4.2	1.32		

DF=58, table value = 2.001 at p = ≤0.05

The statistical analysis of the post-test levels of lower back pain between the experimental and control groups revealed an unpaired t-value of 5.48, which is significantly higher than the critical table value of 2.001 at df = 58. The corresponding p-value for the calculated t-value is 0.001, indicating that the result is highly significant.

This demonstrates a statistically significant difference in the level of lower back pain between the experimental and control groups following the intervention. The substantial t-value suggests that the intervention was effective in reducing lower back pain among premenopausal women in the experimental group. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted.

Section IV

To find out the association between study finding selected demographic variables.

Table No: 4.12

Association of Pre-Test Level of Lower Back Pain with Selected Demographic Variables Using Chi-Square Test

SN	Variable	Chi-Square (χ^2) Value	p-Value	Significance (p > 0.05)	Table χ^2 Value (df, α = 0.05)
1	Age	2.50	0.287	Not Significant	5.99 (df = 2)
2	Type of Diet	5.20	0.074	Not Significant	5.99 (df = 2)
3	**Education**	**20.17**	**0.00046**	**Significant**	**9.49 (df = 4)**
4	Occupation	1.33	0.721	Not Significant	7.82 (df = 3)

Interpretation

The chi-square analysis indicates that education has a significant association with the pre-test level of lower back pain among premenopausal women ($p \leq 0.05$). However, age, type of diet, and occupation did not demonstrate a significant association with the pre-test findings.

DISCUSSION

The discussion concludes the research report. A thoughtful discussion section clarifies the meaning of the research findings. The most crucial component of every study report is this one. The results of the current study have been described in relation to the research problem's aim, and the researcher has also discussed the study's findings in relation to the outcome objective. The present study was conducted to assess the effectiveness of dorsal stretching exercises on the level of lower back pain among premenopausal women residing in selected urban community. A review of literature was done and sample size, study design, etc. were determined. The study approach used was the quantitative approach, study design used was a Quasi-experimental non-equivalent control group design.

The population included premenopausal women and accessible population included Premenopausal women in selected area of the urban community. A total of 60 samples were selected using Non probability, purposive sampling technique; 30 samples were placed in the control group and 30 samples were placed in the experimental group. Tools were selected for collection of data which included a numerical rating pain scale to assess the level of lower back pain. Validity of the tool was performed by experts and reliability was done. The tool was found to be

valid and reliable. Ethical permission was taken from the ethical committee. Pilot study was done on 6 samples. Analysis of pilot study depicted that the research was feasible to perform. Before the main data collection consent was taken from the participants by explaining the purpose of the research and assurance of confidentiality was given to them.

The pre-test of both groups was collected on day one. The intervention of dorsal stretching exercises was given to the participants placed in the experimental group. The dorsal stretching exercises were given to them and was asked to perform once every day for 28 days. A diary was maintained by the participants of the experimental group which depicted a number of interventions taken by the participants. On The 28" day post-test was collected from both the experimental and control groups.

The master sheet of the data was prepared. Analysis of the study was done using both descriptive and inferential statistics. The data was tabulated; graphs and charts of the data were prepared. Paired 't' test and unpaired t' test were used to find the association of level of lower back pain between the groups. And Chi- square test was used to find the association between low back pain with demographic variables. The result of the study depicted those premenopausal women who had undergone dorsal stretching exercises had evidence of reduction of their low back pain level in experimental group, while premenopausal women in the control group had no change in the level of lower back pain. The premenopausal women in the experimental group after the exposure to dorsal stretching exercises had increase in the level of low back pain and the premenopausal in the control group had no change in the level of low back pain. In the Chi- square test which was performed to find the association between low back pain with demographic variables it was found that there is no association between low back pain with demographic variables.

A quasi-experimental study was conducted among 60 premenopausal women aged 35–50 years experiencing lower back pain. Participants were selected using a purposive sampling technique and divided into experimental and control groups. The intervention group received a structured dorsal stretching exercise regimen for 30 minutes daily over 4 weeks, while the control group received no intervention. Pain levels were measured before and after the intervention using a Numerical Pain Rating Scale (NPRS). To assess the effectiveness of dorsal stretching exercises in reducing the level of lower back pain among premenopausal women residing in a selected urban community. Lower back pain is a prevalent health issue among premenopausal women due to hormonal changes, lifestyle patterns, and physical inactivity. Non-pharmacological interventions like stretching exercises have gained attention for their role in pain management and functional improvement. To assess the effectiveness of dorsal stretching exercises in reducing the level of lower back pain among premenopausal women residing in a selected urban community. The mean pre-test pain score in the experimental group was 6.5, which reduced to 2.3 post-intervention. In contrast, the control group showed minimal change (pre-test: 6.4; post-test: 6.1). Statistical analysis using paired and unpaired t-tests showed a significant reduction in pain levels in the experimental group compared to the control group ($p < 0.001$). The study concluded that dorsal stretching exercises are effective in significantly reducing lower back pain among premenopausal women. Incorporating such exercises into daily routine can serve as a cost-effective and safe intervention for pain management.

This study used a quantitative research strategy as its research methodology. A non-randomized, quasi-experimental control group design was employed. The non-probability purposive sampling technique was used to choose the samples. The sample size consisted of 60 women in certain city locations (ages 35 to 55) who reported having low back discomfort. ‘Effectiveness of strengthening exercises on level of low back pain perception among women (35-55 years) residing in selected areas of the city. 1. To determine how much low back pain is perceived by women (35–55 years old) living in particular city neighborhoods. 2. To evaluate how women (35–55 years old) living in particular parts of the city perceive their level of low back pain in relation to strengthening exercises. 3. To

determine whether certain demographic factors and study results are related. The effect of strengthening exercises on women's perceptions of their level of low back pain was examined using a two sample t-test. Women in the experimental group experienced an average change in their low back pain score of 1.8, whereas those in the control group experienced a change of -1. In the control group, the discomfort got worse. This test's t-value, with 58 degrees of freedom, was 12.9. Given the small corresponding p-value (less than 0.05), the null hypothesis is disproved. Women's perceptions of their low back pain were considerably reduced by strengthening exercises.

OTHER STUDIES REFER TO

1. A quasi-experimental study was conducted among 60 premenopausal women aged 35–50 years experiencing lower back pain. Participants were selected using a purposive sampling technique and divided into experimental and control groups. The intervention group received a structured dorsal stretching exercise regimen for 30 minutes daily over 4 weeks, while the control group received no intervention. Pain levels were measured before and after the intervention using a Numerical Pain Rating Scale (NPRS). To assess the effectiveness of dorsal stretching exercises in reducing the level of lower back pain among premenopausal women residing in a selected urban community. Lower back pain is a prevalent health issue among premenopausal women due to hormonal changes, lifestyle patterns, and physical inactivity. Non-pharmacological interventions like stretching exercises have gained attention for their role in pain management and functional improvement. To assess the effectiveness of dorsal stretching exercises in reducing the level of lower back pain among premenopausal women residing in a selected urban community. The mean pre-test pain score in the experimental group was 6.5, which reduced to 2.3 post-intervention. In contrast, the control group showed minimal change (pre-test: 6.4; post-test: 6.1). Statistical analysis using paired and unpaired t-tests showed a significant reduction in pain levels in the experimental group compared to the control group ($p < 0.001$). The study concluded that dorsal stretching exercises are effective in significantly reducing lower back pain among premenopausal women. Incorporating such exercises into daily routine can serve as a cost-effective and safe intervention for pain management.

2. This study used a quantitative research strategy as its research methodology. A non-randomized, quasi-experimental control group design was employed. The non-probability purposive sampling technique was used to choose the samples. The sample size consisted of 60 women in certain city locations (ages 35 to 55) who reported having low back discomfort. ‘Effectiveness of strengthening exercises on level of low back pain perception among women (35-55 years) residing in selected areas of the city. 1. To determine how much low back pain is perceived by women (35–55 years old) living in particular city neighborhoods. 2. To evaluate how women (35–55 years old) living in particular parts of the city perceive their level of low back pain in relation to strengthening exercises. 3. To determine whether certain demographic factors and study results are related. The effect of strengthening exercises on women's perceptions of their level of low back pain was examined using a two sample t-test. Women in the experimental group experienced an average change in their low back pain score of 1.8, whereas those in the control group experienced a change of -1. In the control group, the discomfort got worse. This test's t-value, with 58 degrees of freedom, was 12.9. Given the small corresponding p-value (less than 0.05), the null hypothesis is disproved. Women's perceptions of their low back pain were considerably reduced by strengthening exercises.

CONCLUSION

The study came to the conclusion that dorsal stretching exercises intervention improved level of lower back pain among premenopausal women Thus, it is effective on the level of lower back pain among premenopausal women residing in selected area of urban community.

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REFERENCES:

1. Boehm DG, Kay AD, Trajan GS, Alidade S, Blazevich AJ. Effects of acute and chronic stretching on pain control. Journal of Clinical Exercise Physiology. 2021 Dec 1;10(4):150-9.Available From :- https://meridian.allenpress.com/jcep/article/10/4/150/474534/Effects-of- Acute-and-Chronic-Stretching-on-Pain
2. Christiana D. Hinmikaiye, Eunice I. Bamishaiye, The Incidence of Low Back Pain among Theatre Nurses: A Case Study of University of Ilorin and Obafemi Awolowo University Teaching Hospital. International Journal of Nursing Science (2012), Available from:- http://article.sapub.org/10.5923.j.nursing.20120203.02.html
3. Roy, Brad A. Ph.D., FACSM, FACHE; Vanichkachorn, Greg M.D, Low Back Pain ACSM's Health & Fitness Journal: March/April 2013 - Volume 17 - Issue 2 - p 5Available from: https://journals.lww.com/acsmhealthfitness/Pages/articleviewer.aspx?year=2013&issue
4. Kaushik Mitra, Soumyadip Chatterji, Shantanu Nandy, Chinmay Nandi, Shibasish Banerjee Prevalence of Low Back Pain and Disability among the Non-working Adult Women in a Rural Community of Purba Bardhhaman,

West Bengal JMSCR Volume 05 Issue 05 May 2017 Available from:- https://www.researchgate.net/publication/317317719_

5. VARGHESE LINDA, EFFECTIVENESS OF BACK STRETCHING EXERCISE ON LOW BACK PAIN AMONG PERIMENOPAUSAL WOMEN JETIR November 2020, Volume 7, Issue 11 www.jetir.org Available From:- https://www.jetir.org/papers/JETIR2011053.pdf
6. P. Sumathy, effectiveness of exercises on low back pain among middle-aged women at puducherry Nite University Journal of Health Science (2016) Available from: http://www.nitte.edu.in/journal/march2016/09