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Frequency of Lower Back Pain among Middle-Aged Women in Twin Cities; A Cross Sectional Study

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ABSTRACT

Objective: To determine the frequency of lower back pain in 40 to 60 years old women.

Methodology: A cross-sectional study was conducted from March to May 2019 in Islamabad and Rawalpindi. 370 middle age women between 40 to 60 years were included, using non-probability convenient sampling technique. Scales used were 'NPRS' scale for the proper scaling of Pain intensity, 'Oswestry Lower Back disability questionnaire' to evaluate lower back pain disability level, and self-Structured questionnaire was used for determination of demographic. Subjects were selected according to inclusion and exclusion criteria, with the consent of the participants. Data was analyzed by using SPSS v.21.0.

Results: The mean age of participants was 52 ±8.48 years, the frequency of lower back pain in middle age women is 69% (n=212) in twin cities. On analysis, the study found that 84% (n=310) of women had some form of back pain. Intensity at the lower back was mild to moderate on NPRS (1-5), 78.3% (n=166), and moderate to severe on NPRS (6-10) was 21.7%(n=46). Participants explained the nature of pain as 'Localized' and 'Radiating', 66% (n=139), and 34% (n=72) respectively. According to Oswestry's interpretation, 49% (n=104) of women had a minimal disability and 29% (n=62) had moderate disability, 12% (n=26) had Severe disability and 7% (n=16)were crippled.

Conclusion: Significant number of middle-aged women have lower back pain with noticeable intensity and disability rates. This prevalence is an alarming sign for our society needing timely public health action.

Introduction

Lower back pain (LBP) is very common these days, everyone has faced it in some part of lives. "Centers for Disease Control and Prevention National Health statistics report showed that low back pain is the most common condition for which patients seek complementary and alternative medicine care".[1] The global point prevalence value of daily life activity-limiting lower back pain was found to be 7.3% or approximately 540 million people affected by it at one point in their life. Globally, it is now the leading cause of disability.. It is defined due to the location of pain or discomfort, commonly inferior to the costal margin and superior to inferior gluteifolds. Para spinal and lumbosacral regions are the main areas where pain usually feels. Pain can be localized or radiating. It is difficult to identify the exact cause is a vast number of cases hence mostly these symptoms are classified as

"non-specific" LBP. In acute LBP recovery time from the onset is between 8-12 weeks, but in chronic LBP it will cause long term trouble, such as mental stress and disability. Sufferers mostly have the signs of tight hamstring, tenderness, para vertebral muscle spasms and restricted range of motion.[2]

Evidence shows, that women are more prone to LBP than men due to several reasons such as increase referred pain possibilities, weak muscle strength, low pain perceiving threshold, or compromised physical fitness, causing a direct negative impact on their daily activities.[3] In the female, middle-age women are more prone to musculoskeletal conditions.[4] LBP affects a large number of women each year and if left unaddressed, it can result in lifelong pain and permanent disability. Working women and housewives both are equally affected by the adverse outcome of LBP. The homemakers are vulnerable to LBP due to poor ergonomic. From previous studies, it is proved that more than 33.3% of disabilities are caused by lower back pain and its caused 83% of women; pain and activity restriction.[5] Socio-demographic characteristic (age, living area, and marital status), several children, prolong bending posture, and the pregnancy are the leading factors of causing this discomfort in women.[6]

A study shows prevalence of LBP in working women as 73.9% and it badly affect their health and economy.[7] The possible risk factors of LBP are working in higher levels of health care, over exertional back trauma, and lack of regular physical exercise.[7] In women's overall health status, LBP plays a crucial role. However, this pain and disability are manageable; the latest study shows lumbar stabilization exercise and muscle-strengthening exercise programs are efficacious in decreasing LBP and functional disability.[9]

There is limited literature available on LBP in middle-age women in twin cities of Rawalpindi and Islamabad Pakistan. This study will give an idea to the health care worker and women related to the frequency and intensity of lower back pain in middle-aged women, and disability rate related to LBP, so that on-time preventive measurements can be taken.

Methodology

A cross-sectional survey was done with calculated sample size 370 and the sample size was calculated through the formula:

$$n = \frac{z_{1-\frac{\alpha}{2}}^{2}\,(SD^2)}{d^2}$$

Where α is the confidence level; SD = Standard deviation of outcome measure from a previous study[6] and d= Absolute error. Inclusion criteria were age between 40 to 60 years' female, working and homemakers, from twin cities of Pakistan. Exclusion criteria were any major MSK disorder, a recent history of fall, neurological disorders, any trauma, and criteria of any co-morbidity. Duration of study was from March to May 2019, for sample collection, convenience sampling technique was used. Data was collected from different areas of Islamabad and Rawalpindi. Tools used in the study were Oswestry Lower Back disability questionnaire to evaluate the lower back pain disability level, it's the "gold standard" for measuring the degree of disability in a person with LBP. Oswestry's validity and reliability are 0.81 and 0.87, respectively[10]. NPRS scale was used for the proper scaling of pain intensity. NPRS validity is 0.86 and reliability is 0.96.[11] A self-structured questionnaire was used for the determination of demographics. Subjects were selected after obtaining informed consent. Data was analyzed by using SPSS v.21.0.

Results

Investigation of data shows that the mean age of participants was 52 ±8.48 year. On analysis, we have found that 84% (310 out of 370) answered 'Yes' on the question (Have you ever experienced Back Pain?). Further from 310 subjects, 69% (n=212) had lower back pain (Figure I). Most of the middle age women explained Nature of Pain 'Localized' 139 out of 212(66%) and 72 out of 212 (34%) describe it 'Radiating'. (Table I) Pain intensity at the lower back was mild to moderate on NPRS (shows 1 to 5 on the scale), 78.3% (166 out of 212) and Moderate to Severe (6-10 on NPRS scale) in 21.7% (46 out of 212).

According to Oswestry interpretation out of 212 women 'Minimal disability (0%-20%) was in 49% (n=104) whereas 'Moderate disability (21%-40%) was in 29% (n=62). 'Severe disability (41%-60%) and 'Crippled (61%-80%) have values of 12% (n=26) and 7% (n=16) respectively. Only 2% which is 4 participants had 81%-100% disability. (Table II)

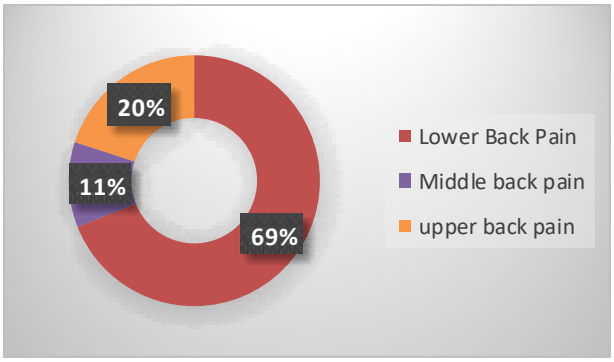

Figure 1: Frequency of back pain

Table I: General Description

Questions	Response
Are you working women from past 5 years	Yes=210 from 370 (57%) No=160 from 370 (43%)
Do you have back pain	Yes= 310 (84%) No= 60(16%)
Area of Back involved	Lower back pain= 212 out of 310(69%) Upper Back=61 out of 310 (20%) Mid Back=37 out of 310 (11%)
Nature of lower back Pain	Nature of Pain Localized= 139 out of 212(66%) Radiating= 72 out of 212 (34%)

Table II: Oswestry Disability Index Interpretation

Interpretation	Participants from 212	In percentage
Minimal disability 0%-20%	104	49.0%
Moderate disability 21%-40%	62	29%
Sever disability 41%-60%	26	12%
Crippled 61%-80%	16	7%
81%-100%	4	2%

Discussion

Among all the musculoskeletal and spinal pain problems, lower back pain is the most common clinical, social, economic, and public health problem affecting the population universally across the world.[12] LBP has always been reported regularly in a higher proportion of females than males the reason being women having a lower threshold of perception of pain and reaction to it.[13, 14] In our study the prevalence of lower back pain in middle age woman is measured by Oswestry Lower Back disability questionnaire to evaluate lower back pain, disability level and NPRS scale for the proper scaling of pain intensity.

The result of this current study demonstrates that prevalence of back pain is high, 84%, which is consistent with the results stated by Husky (2018) aroound 40% of adult female population suffer from chronic back pain. [15]

The prevalence of lower back pain was reported in 69% of women. The results are similar to the results of the study by Akter S. (2014) which reported that more than half of females suffered from lower back pain. [6]

Around 78.3 % of women in the current study reported mild-moderate lower back pain whereas 21.7% of women reported moderate to severe pain. This is consistent with results of a study by Sadosky et al, that report a similar quantity of mild-moderate and moderate-severe patients suffering from chronic lower back pain.[16]

In the current study, around 66% of women had localized lower back pain while 34% of women had pain which radiated to lower extremity. This result of the current study is consistent with results of a study by Rahman Shiri et al that the incidence of radiating lower back increases with age and is more in middle-aged women.[17]

The current study shows that around 49% of the population suffers from a minimal disability due to lower back pain whereas the lives of 7% of the population are crippled due to lower back pain. This result is consistent with the results of a study by Chin Peng Li et al which also displays similar results in their study. [18]

Current investigations show comparative outcomes that back pain and physical activity affect one another. Bad posture is subject to wide discussion around the globe and one of the major causes of back pain in most people but needs further investigation.

Conclusion

The findings of this study suggest that a significant number of middle-aged women have lower back pain with noticeable intensity and disability rates.

This prevalence is an alarming sign for our society. Health education and awareness about proper ergonomic measures, well-being plans, and strengthening exercises can reduce LBP problems and disability.

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