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Comparative Study of HRQOL of Physically Active & Physically Inactive Perimenopausal Women

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Abstract

The aim of the study was to determine the health-related quality of life between physically active and physically inactive perimenopausal women. A sample of 100 perimenopausal women was selected from various regions of Bilaspur and Raipur on the basis of stratified purposive random sampling. The sample was divided into two groups physically active and physically inactive women. The age group of the subjects were ranged from 40 - 55 years. Health related quality of life (HRQOL) was assessed through SF-36 Questionnaire, which was used in the present study. The International Physical Activity Questionnaire was used to determine the level of physical activity (IPAQ). To compare the HRQOL variables between physically active and physically inactive perimenopausal women independent sample t-test was used. The level of significance was set at 0.05 level.
According to the study's findings, there was a significant difference in the mean scores of physically active perimenopausal women who were higher in Vitality, Physical functioning, Bodily pain, General Health perceptions, Physical Role functioning, Emotional Role functioning, Social Role functioning and Mental Health when compared to physically inactive women. Physically active perimenopausal women had better HRQOL than physically inactive women.

Keywords: *Health related quality of life, physically active perimenopausal, physically inactive perimenopausal women, perimenopausal women*

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Introduction

Health-Related Quality of Life (HRQOL)

Individuals and communities' overall well-being is referred to as quality of life (QOL). The term can be found in a variety of sectors, including international development, healthcare, and politics.

The concept of quality of life should not be confused with that of standard of living, which is primarily determined by income. Instead, typical indices of quality of life include the built environment, physical and mental health, education, recreation and leisure time, and social belonging, in addition to money and employment. (Johnston, et al, June 2009) [6].

Physical functioning, role and social functioning, somatic sensation, perceived health, and subjective well-being are all important dimensions of everyday functioning and subjective experience covered by health-related quality of life (HRQL). Chronic medical morbidity has been shown to have a significant detrimental impact on HRQL functional areas. (Stewart et al., 1989; Verbrugge & Patrick, 1995) [10, 11].

HRQL is the monetary worth that an individual assigns to the length of their life as determined by impairments, functional states, perceptions, and social opportunities influenced by sickness, injury, treatment, or policy. (Patrick D and Erickson J, 1993) [8].

Several recent studies have discovered that the transition from menopause to postmenopause affects various aspects of HRQL, with depressive symptoms being the exception. (Crawford S & et al., 2001) [3].

Various symptoms (leaking urine, vaginal dryness, night sweats, and hot flashes) and other variables reduced differences in HRQL to non-significance in a large cross-sectional study, but adjustments for symptoms (leaking urine, vaginal dryness, night sweats, and hot flashes) and other variables reduced differences in HRQL to non-significance. (Covin, A. et al., 2003) [2].

Estrogen alone as a postmenopausal hormone treatment is still used to treat vasomotor symptoms, with depression noted as a side effect (Zweifel JO'Brien, 1997). [13] sexual activity (Sarrell PM, 2000) [9] as well as cognitive function (Paganini, 1994) [7] which are all components of HRQOL and have an impact on global QOL.
Menopausal symptoms can have a negative impact on a woman's health and well-being. It's critical to create symptom-relieving therapies, especially in light of recent data that many women are opting out of hormone replacement medication. Though exercise has been shown to help with menopausal symptoms, its efficiency has been contradictory.

There is some evidence of a link between exercise and health-related quality of life, as well as mixed data for the relief of vasomotor symptoms in postmenopausal women. The researcher believes that a survey gap in the field of changes in HRQOL in physically active and inactive menopausal women must be filled.

Menopause
Menopausal symptoms can have a negative impact on a woman's health and well-being. It's critical to create symptom-relieving therapies, especially in light of recent data that many women are opting out of hormone replacement medication.
The last menstrual period, which can be validated after a period-free duration of 12 months. Menstruation and fertility come to an end at this period. Menopause is a normal, natural process marked by decreased ovarian function and lower levels of ovarian hormones (mainly estrogen) [1].

Pre-menopause
The span of time from puberty (onset of menstrual periods) to perimenopause [1].

Perimenopause
A period of time that begins with the commencement of menstrual cycle alterations and other menopause-related symptoms and lasts until one year after menopause (the last menstrual period). Perimenopause is only felt during natural (spontaneous) menopause, not artificial menopause. It could also be called Menopause transition [1].

Postmenopause
The span of time after menopause (the final menstrual period) (North American Menopause Society) [1].

Physically Active
The term "physically active" was defined in this study as individuals who attained MET scores of more than 6000 MET - min/week. The MET scores were determined based on how much physical work they did in any form, regardless of their daily household or work schedule. Walking, running, gardening, and other leisure activities were all covered. (International Physical Activity Questionnaire (IPAQ) Data Processing and Analysis Guidelines, November 2005).

Physically Inactive
The term "physically inactive" was used in this study to describe those who did not acquire MET scores of more than 6000 MET - min/week. The MET scores were determined based on how much physical work they did in any

form, despite their everyday household or work routines. Walking, running, gardening, and other leisure activities were all covered. (International Physical Activity Questionnaire (IPAQ) Data Processing and Analysis Guidelines, November 2005).

Health related quality of life variables -

1. **Vitality -**Assesses feelings of energy and fatigue.
2. **Physical functioning -** Assesses the impact of the health in performing physical activities.
3. **Bodily pain -**Captures the frequency of pain and the extent of interference with normal activities due to pain.
4. **General health perceptions -**Assesses overall current health status, susceptibility to illness, and one's expectations for health in the future.
5. **Physical role functioning -**Assesses the impact of the physical health on vocational and avocational activities.
6. **Emotional role functioning** - Assesses the impact of emotional health on vocational and avocational activities.
7. **Social role functioning -**Assesses the feelings of either physical health or emotional problems on normal or usual social activities.
8. **Mental health -**Assesses the frequency of 4 major mental health dimensions: anxiety, depression, loss of behavior/emotional control and psychological well-being.

Objective of the Study

The following were the objectives of this study:

- To compare the health-related quality of life between physically active and physically inactive perimenopausal women.
- To assess health related quality of life variables in physically active perimenopausal women.
- To assess health related quality of life variables in physically inactive perimenopausal women.

Methodology

Selection of Subjects

A total of 100 perimenopausal women from diverse parts of Bilaspur and Raipur were chosen for this study. The study's participants were split into two (02) groups, each with 50 participants. The study used stratified purposive random sampling as its sampling strategy. The participants were between the ages of 40 and 55.

Selection of Variables

The study's variable was Health Related Quality of Life, which was measured using the SF-36 questionnaire. The scaled scores on the SF-36 questionnaire are the weighted sum of the items in their respective section. On the assumption that each question has equal weight, each scale is directly translated into a 0-100 scale.

The eight sections are:

1. Vitality.
2. Physical functioning.
3. Bodily pain.
4. General health perceptions.
5. Physical role functioning.
6. Emotional role functioning.
7. Social role functioning.
8. Mental health.

Criterion Measures

1. Health related quality of life (HRQOL) assessed through SF-36 Questionnaire.
2. IPAQ – The physical activity level was assessed using the International Physical Activity Questionnaire. The questionnaire was used to assess physical activity undertaken across a comprehensive set of domains including Leisure time physical activity, domestic &gardening (yard) activities, work related physical activity and transport related physical activity.

Administration of Questionnaire

1. Health related quality of life

Purpose: The SF-36® Health Survey is a generic outcome measure designed to examine a person's perceived health status.

Instrument Type: Self-report Questionnaire (generic health status measures). It is a brief (36 item) scale developed by Stewart, Hayes and Ware (1988) [11] from items included in the Medical Outcome Study. The SF-36 has a single item covering change in health status over the last year and an 8 multi - item scales.

Structure: The SF-36® Health Survey includes one multi-item scale measuring each of the following eight health concepts: physical functioning (PF); role limitations because of physical health problems; bodily pain (BP); social functioning; general mental health (psychological distress and psychological wellbeing); role limitations because of emotional problems; vitality (energy/fatigue); and general health perceptions. The SF-36 can also be divided into two aggregate summary measures the Physical Component Summary (PCS) and the Mental Component Summary (MCS) (Ware et al 1993) [6].

Scoring: The SF-36® Health Survey items and scales were constructed using the Likert method of summated ratings (Ware & Hays 1988) [11]. Answers to each question are scored (some items need to be recoded). These scores are then summed to produce raw scale scores for each health concept which are then transformed to a 0 - 100 scale. Scales is set up so that a higher score indicates better health.

2. International Physical Activity Questionnaire

Perimenopausal and postmenopausal women were both invited to complete the IPAQ questionnaire to determine their level of physical activity. The respondents were asked to fill out a questionnaire concerning their physical activity levels during the previous seven days. In addition, "work" questions will be changed to "college" to match the group being sampled. IPAQ evaluates physical activity over a wide range of disciplines, including:

a) Leisure time physical activity.
b) Domestic and gardening (yard) activities.
c) Work-related physical activity.
d) Transport-related physical activity.

Structure

The IPAQ is used to assess PA during the previous seven days. The long form (27 items) and the short form (7 items) are self-administered or administered during in-person or telephone interviews, respectively. The extended version of the IPAQ was employed in this study, and it covers four areas of PA: occupational (6 items), transportation (6 items), and household/gardening (6 items), and leisure-time activities (6 items), as well as time spent sitting (2 items). The IPAQ Long form elicits information on the exact types of activities carried out in each of the four categories. Within each of the work, transportation, household duties and gardening (yard) and leisure-time activities, the items in the IPAQ long form were organised to offer unique domain specific scores for walking, moderate-intensity, vigorous-intensity exercise. Two questions about sitting time as an indicator of sedentary behaviour are also included in the questionnaire. The number of days per week and time spent walking each day, as well as moderate and strenuous activities, were tracked across all four domains. The sum of the length (in minutes) and frequency (in days) for all sorts of activities in all domains was used to get the long form's total scores. It was

possible to construct domain-specific scores or activity-specific sub-scores. Domain-specific scores are calculated by adding the scores for walking, moderate-intensity, and vigorous-intensity activities within the domain, whereas activity-specific scores are calculated by adding the scores for the specific type of activity across domains.

Administration Method and Scoring

The IPAQ data were converted to metabolic equivalent scores (MET-minweek-1) for each type of activity, by multiplying the number of minutes dedicated to each activity class by the specific MET score for that activity. METs are multiples of resting metabolic rate and a MET- minute is computed by multiplying the MET score of an activity by the minutes performed. The MET score weighs each type of activity by its energy expenditure. Based on the MET value, groups were divided into physically active and inactive women. Scores above 6000 MET - min/week are in physically active group and those MET scores below 6000 MET – min/week are in physically inactive group.

Statistical Method

A detailed descriptive statistic i.e., mean, standard deviation, minimum and maximum scores on each test sub-scales of health-related quality of life was calculated. To compare the selected HRQOL variables between physically active and inactive women independent sample t-test were used. The level of significance was set at 0.05 level.

Result and Findings of the Study

Table-1

Descriptive Statistics of Sub-Scales of Health-Related Quality of Life of Physically Active perimenopausal women and Physically Inactive perimenopausal Women.

Variables	GROUPS	N	Mean	Std. Deviation	Std. Error Mean
Vitality (VT)	Physically Active	50	81.40	4.52	.63
	Physically Inactive	50	36.10	5.37	.75
Physical functioning. (PF)	Physically Active	50	85.10	8.04	1.13
	Physically Inactive	50	42.90	6.70	.94
Bodily pain. (BP)	Physically Active	50	91.37	10.41	1.47
	Physically Inactive	50	65.33	11.72	1.65
General health perceptions. (GH)	Physically Active	50	84.52	7.17	1.01
	Physically Inactive	50	43.96	6.89	.97
Physical role functioning. (PR)	Physically Active	50	98.00	9.89	1.39
	Physically Inactive	50	56.50	42.20	5.96
Emotional role functioning. (ER)	Physically Active	50	98.66	6.59	.93
	Physically Inactive	50	49.33	37.64	5.32
Social role functioning. (SR)	Physically Active	50	96.25	5.78	.81
	Physically Inactive	50	45.75	7.82	1.10
Mental health. (MH).	Physically Active	50	91.04	2.97	.42
	Physically Inactive	50	41.36	7.02	.99

Table no.1 reflects the number of subjects, mean and standard deviation of sub-scales of health-related quality of life of physically active perimenopausal & physically inactive perimenopausal women.

TABLE NO: - 2

		t- test for equality of means						
		T	**Df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**	
							Lower	**Upper**
Vitality.	**Equal variances assumed**	45.61	98	.000	45.30	.99	43.32	47.27
	Equal variances not assumed	45.61	95.22	.000	45.30	.99	43.32	47.27
Physical functioning.	**Equal variances assumed**	28.48	98	.000	42.20	1.48	39.25	45.14
	Equal variances not assumed.	28.48	94.91	.000	42.20	1.48	39.25	45.14
Bodily pain.	**Equal variances assumed**	11.74	98	.000	26.04	2.21	21.63	30.44
	Equal variances not assumed	11.74	96.65	.000	26.04	2.21	21.63	30.44
General health perceptions.	**Equal variances assumed**	28.82	98	.000	40.56	1.40	37.76	43.35
	Equal variances not assumed	28.82	97.85	.000	40.56	1.40	37.76	43.35
Physical role functioning.	**Equal variances assumed**	6.77	98	.000	41.50	6.12	29.33	53.66
	Equal variances not assumed	6.77	54.37	.000	41.50	6.12	29.21	53.78
Emotional role functioning.	**Equal variances assumed**	9.12	98	.000	49.33	5.40	38.60	60.05
	Equal variances not assumed	9.12	52.00	.000	49.33	5.40	38.48	60.17
Social role functioning	**Equal variances assumed**	36.68	98	.000	50.50	1.37	47.76	53.23
	Equal variances not assumed	36.68	90.23	.000	50.50	1.37	47.76	53.23
Mental health.	**Equal variances assumed**	46.03	98	.000	49.68	1.07	47.53	51.82
	Equal variances not assumed	46.03	66.02	.000	49.68	1.07	47.52	51.83

Table no. 2 above clearly indicates that there were significant differences obtained in Vitality, Physical functioning, Bodily pain, General Health perceptions, Physical Role functioning, Emotional Role functioning, Social Role functioning and Mental Health between physically active and inactive women, since t-values obtained was 45.61, 28.48, 11.74, 28.82, 6.77, 9.12, 36.68, 46.03respectively and p value of 0.05 level.

Figure – 1

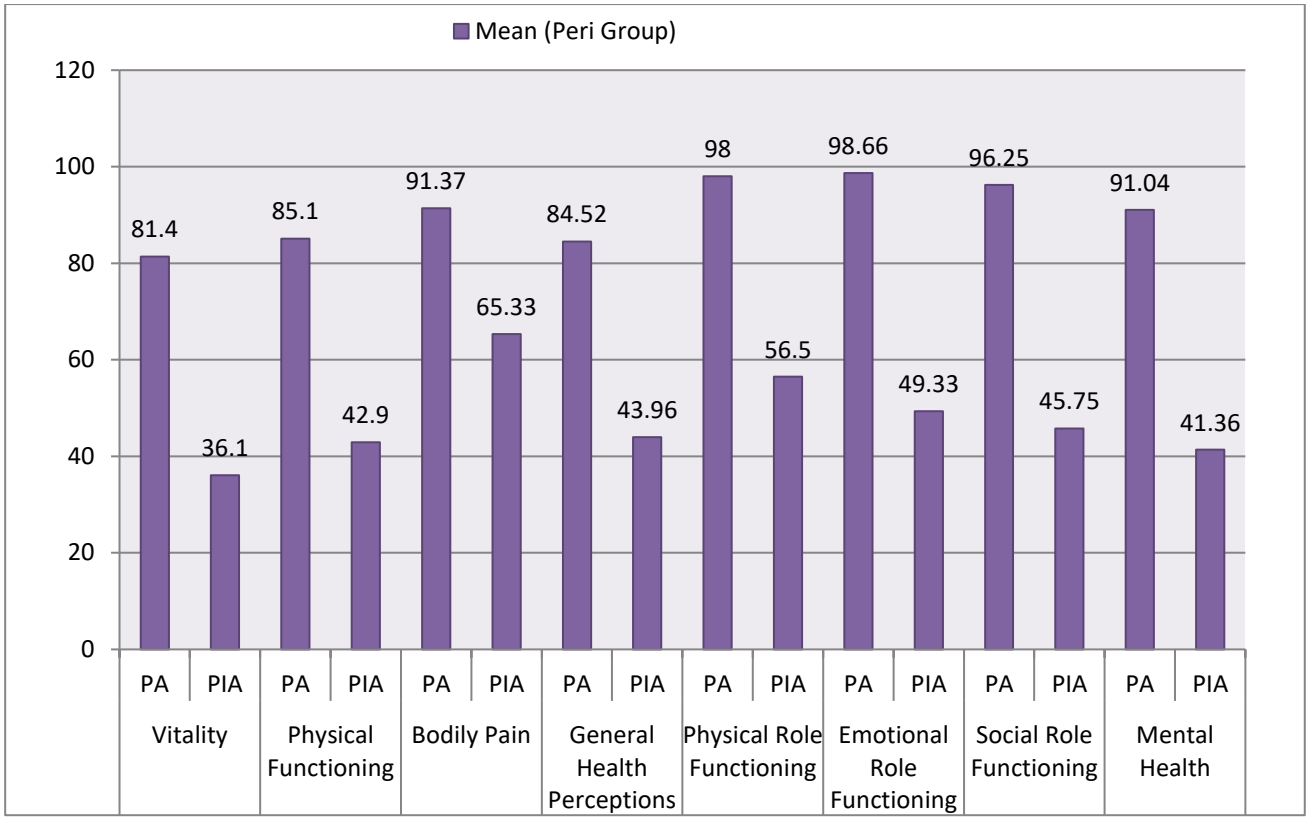

Figure 1 depicts the graphical representation of mean scores of physically active and inactive groups of variables of health-related quality of life.

Discussion and conclusion of Results

Analysis of data pertaining to the assessment of all sub-scales of health-related quality of life (HRQOL), Role Physical, Mental Health and Bodily Pain between active perimenopausal and inactive perimenopausal women revealed significance differences. It is seen that the mean scores of physically active perimenopausal were higher in Vitality, Physical functioning, Bodily pain, General Health perceptions, Physical Role functioning, Emotional Role functioning, Social Role functioning and Mental Health when compared to physically inactive women. Physical activity level brings a lot of change in one's personality. Moreover studies reveal that physical activity has been the factor triggering factor for change in menopausal women.Further supportive document was the study conducted by Javadivala, Kousha et.al (2013)on menopausal aged women where it was found thatthere was a positive significant relationship between Psychological, Social, and Environmental domains of HRQOL with physical activity. It further leads to a clear image of need of physical activity of menopausal women, irrespective of their menopausal stage.Further result was supported by the study condcuted byLuoto R & Moilanen e.al (2012) on effect of aerobic training on frequency of hot flushes or quality of life of sedentary symptomatic women. It was found that aerobic training decreases the frequency of hot flushes and improve quality of life among slightly overweight women.

The probable reason for increase in HRQOL variables in physically active perimenopausal women was due to physical active lifestyle. There is also supporting study by LM Andrew et.al in the year 2009 which reveals that low exercise participation have lead to prominent disease in menopaused aged women. This may probaby increase their risk of diseases in later life. Also, it depicts that sedentary lifestyle leads to deterioration of health and lower quality of life (M Sowers, 2007).

The importance of the QoL meaning is that it makes life worthy and protects the personality from falling prey to the disease and the importance of living psychological well-being and psychological enjoyment as a personality. Several reasons lead us to study the quality of life.

A recent study by S Elavsky (2009) found that moderate aerobic exercise reduces hot flashes; however, greater daily moderate physical activity leads to increased self-reported symptoms in women with lower fitness levels. The effect of body mass index on menopausal symptoms, particularly hot flashes, has yielded mixed results. Depending on the exact symptom, the association between menopausal symptoms and physical activity and BMI may differ, and socio-demographic characteristics may influence the symptoms. To date, the majority of menopause studies have been conducted in either Euro-American or non-Turkish populations. To our knowledge, the effects of physical activity and boredom have not been studied.

HA Doll et al., 2000 led Obesity Research and concluded that excess weight will most likely have a detrimental impact on physical HRQOL due to its negative physical wellbeing outcomes (e.g., diabetes, CVD, respiratory clutters, osteoarthritis, and practical inability). Both physical, mental, and enthusiastic effects of excess body weight have been surveyed using both non-specific and obesity-specific HRQOL measures. The two types of instruments consistently show that women with an obese body mass index (BMI = 30 kg/m2) have a lower HRQOL than women with an optimal body mass index (BMI 18.5– 24.9 kg/m2).

Conclusion

Physically active perimenopausal women enjoy a higher health-related quality of life than physically inactive perimenopausal women, according to the findings. According to studies, a lack of physical activity has a negative impact on HRQOL. Furthermore, sedentary women experienced greater menopausal symptoms than active women.

Recommendations

1. The study recommends perimenopausal women to participate in any form of physical activity which will lead to reduced menopausal symptoms.
2. The study further recommends perimenopausal women to prepare themselves for postmenopausal symptoms which greatly affects health related quality of life.
3. The study recommends for a reduced obesity in postmenopausal stage, as weight gain in perimenopausal stage becomes slightly difficult to reduce once entered postmenopausal stage.
4. The study further recommends women to be aware of menopausal symptoms so that it prepares them for a accepted menopausal life ahead which would improve the quality of life.

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Website

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