

## ASSESSMENT OF LEVELS OF PHYSICAL ACTIVITY IN PERIMENOPAUSAL WOMEN

Ronghe N Rashmi<sup>1</sup>, Gotmare A Neha<sup>2</sup>

<sup>1</sup>Associate Professor, <sup>2</sup>Assistant Professor,

Department of Cardiorespiratory science VSPM's College of Physiotherapy, Nagpur, Maharashtra, India.

### ABSTRACT

**Aim:** Various physical, psychological and hormonal changes during the perimenopause may affect their quality of life. It results in Joint pain, stiffness and urinary incontinence may limit the ability to take the exercise and to socialize. Poor sleep and mood changes can have an impact on women's ability to work effectively. Objective: To categories level of physical activity in terms of light, moderate and vigorous through RAPA scale. **Methodology:** Questionnaire based survey was carried out in 100 perimenopausal women aged 45 to 55 years. After the anthropometric and demographic assessment RAPA was administered and then data was analyzed. **Result:** Out of 100 subjects only 17 women were categorized as active with moderate physical activity for 30 minutes on 5 or more days of week and 10 did vigorous physical activity for 20 minutes for 3 or more days a week and were called as active. Out of the 10 active only 4 did flexibility and no strengthening. **Conclusion:** Only 10 perimenopausal women could reach second level of RAPA. 22 were eliminated in question no. 1 i.e. they were inactive apart from daily household activities .

**KEY WORDS:** Perimenopausal women, Rapid Assessment of Physical Activity.

### INTRODUCTION

Perimenopause refers to the period around menopause i.e. 45-55 years [1]. Prior to the actual menopause when menstrual cycles are irregular, a woman may be referred to as being perimenopause [2]. During early perimenopause, progesterone level declines, leaving the body in a state of estrogen dominance. The women may experience bloating, cramps and mood swings [3]. During mid years of perimenopause, estrogen level also declines leading to such symptoms as hot flushes, heart palpitations, migraine headache and vaginal dryness. The late perimenopause sets in when estrogen and progesterone levels decline to near menopausal levels. During the perimenopausal transition, women experience various physical, psychological and social changes that may affect their quality of life. Hormonal changes during the Perimenopause results in symptoms which may, particularly if they are severe, have an impact on lifestyle. Joint pain, stiffness and urinary incontinence may limit the ability to take the exercise and to socialize. Severe vasomotor symptoms can result in women avoiding social occasions because of embarrassment. Poor sleep and mood changes can

have an impact on women's ability to work effectively [4]. Women often complain of crashing fatigue during perimenopause, yet they are unable to sleep [5]. Cortisol, a hormone produced in the adrenal glands, and regulated and released by the hypothalamus during times of stress, is often a contributor to this problem. High levels of cortisol contribute to chronic insomnia and feelings of crashing fatigue, but over exposure to cortisol, along with other stress hormone, such as adrenaline, which is also released by the adrenal gland, can put the body at high risk for heart disease, contribute to digestive problem, obesity and even depression [6].

According to WHO, physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. Energy expenditure can be explained in terms of light physical activity when heart beats slightly faster than normal and person can talk and sing [7]. Moderate activities are when heart beats faster than normal and person can talk but not sing. Vigorous activities are when heart rate increases a lot and person can't talk or talking is broken up by large breaths [4].

**Need for study:** Perimenopause is the phase of transition in women's life. Perimenopausal age is relatively relaxed time for women as social responsibilities are reduced. They get more leisure time to spend with themselves or with family. Due to reduced responsibilities the level of physical activity also goes down. Inactive lifestyle in middle age might lead to weight gain,



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**Correspondence:** Ronghe N Rashmi, Associate Professor, Department of Cardiorespiratory science VSPM's College of Physiotherapy, Nagpur, Maharashtra, India. **Email:** drmint1011@yahoo.co.in

girth gain, and compromised level of physical activity. Lifestyle also influences physical activity level. Considering this view the study was carried out to found the level of action in perimenopausal women using Rapid Assessment of Physical Activity (RAPA) scale [3].

**MATERIALS AND METHODS**

**Study design:** Questionnaire based descriptive study  
**Ethical approval & consent:** Prerequisite permission was obtained from the Head of the Institution and institutional ethical committee as well as Women’s Health Department. Written consent of perimenopausal women was taken after explaining the study.  
**Study location:** Obstetrics and Gynecology department and Women’s physiotherapy clinic  
**Sample size:** 100 perimenopausal females  
**Inclusion criteria:** Age- 45-55 year’s perimenopausal women were selected for present study  
**Exclusion criteria:** Recent injury, suffering from Fever, Amenorrhea since 6 months were excluded

**PROCEDURE**

Anthropometric and demographic data was collected. Rapid Assessment of Physical Activity (RAPA) was then administered in vernacular language and the data was analyzed [1, 8]. It was developed based on Centers for Disease Control and Prevention (CDC) guidelines of 30 minutes to assess strength and flexibility because of the association of these activities with preventing falls. The RAPA is a nine-item questionnaire with the response options of yes or no to questions covering the range of levels of physical activity from sedentary to regular vigorous physical activity as well as strength training and flexibility. RAPA1 measures cardiorespiratory based physical activity (scoring 1-7 points) and RAPA 2a and 2b consist of strength and flexibility [4]. The instructions for completing the questionnaire provide a brief description of three levels of physical activity (light, moderate, and vigorous) with graphic and text depictions of the types of activities that fall into each category. The total score of the first seven items is from 1 to 7 points, with the respondent's score categorized into one of five levels of physical activity: 1 = sedentary, 2 = underactive, 3 = regular underactive (light activities), 4 = regular underactive, and 5 = regular active. Responses to the strength training and flexibility items are scored separately, with strength training = 1, flexibility = 2, or both = 3. Clinicians are encouraged to use this information to have a brief conversation with their patients about their current level of physical activity [1,8].

**Data analysis: Sampling method:** The data was collected and analysis was done by Microsoft excel 2006. Data was presented as Mean±SE.

**RESULTS**

**Table 1. Demographic and anthropometric data**

Parameter	Mean ±SE
Age (years)	48.69±5.25
Height (fts)	5.24±1.05
Weight (Kg)	64.19±2.33
BMI (kg/m <sup>2</sup> )	24.29±1.25

**Table 2. Showing the number of participants who performed Aerobic activity in RAPA 1**

Question	Aerobic	
	Yes	No
Rarely or never do any physical activities	22	78
I do some light or moderate physical activities but not every week.	22	56
I do some light physical activity every week.	24	32
I do moderate physical activities every week, but less than 30 minutes a day or 5 days a week.	10	22
I do vigorous physical activities every week, but less than 20 minutes a day or 3 days a week.	05	17
I do 20 minutes or more a day of vigorous physical activities, 3 or more days a week.	07	10
I do 20 minutes or more a day of vigorous physical activities, 3 or more days a week.	10	00

**Table 3. Showing the number of participants involved in strength and flexibility in RAPA 2**

Question	Strength and flexibility	
	Yes	No
I do activities to increase muscle strength, such as lifting weights or calisthenics, once a week or more.	00	10
I do activities to improve flexibility, such as stretching or yoga, once a week or more.	04	06
Q1 & Q2	00	06

**DISCUSSION**

This study was designed to know the level of physical activity in perimenopausal women aged 45-55 years. In the present study 78 women were involved in various types of physical activity and 22 women were relatively inactive apart from regular activities of daily living. 56 women were going for regular physical activity on daily basis, remaining 22 women were irregularly involved in physical activity. 2<sup>nd</sup> question was answered by 78 women who qualified for Q.1 out of 100 perimenopausal women.

3<sup>rd</sup> question was answered by 56 women. 24 women stated that they performed light physical activity every week and 32 said they crossed the level so they were considered for Q.4. Q.4 asks about the duration and intensity of level of physical activity. 22 females were doing moderate physical activity or even more than that proceeded for Q.5. It was understood for Q.5 that it is asking about vigorous physical activity and 17 women were performing vigorous physical activity.

10 perimenopausal women could cross the first level of RAPA and succeeded for second level in terms of muscle strength and flexibility. At the same time, flexibility and strength training were not performed by any women. Flexibility exercises such as stretching; yoga was the choice of exercise among all women who could reach to second level of RAPA. Aerobic activities like calisthenics, resisted exercises were not the choice of physical activity modes [9].

Perimenopausal changes may impair the muscular strength and bone density due to decreased level of ovarian estrogen [9]. Change in the level of estrogen, relatively increased progesterone and testosterone hormone will reduce the agility of feminine body. Simultaneously the demand of physical activity would be going down because of reduced work demand at family front. Perimenopausal period is considered to be stable period of life from all the aspects of life which leads to leisure time and reduced output.

Perimenopausal changes may lead to reduced physical activity, weight gain. These factors pose a risk of overweight, hypertension and diabetes post-menopausal. Current study suggests that only 10 women were physically active as per RAPA, which is a matter of concern.

According to WHO, the normal range of BMI is 18.5 to 24.9 kg/m<sup>2</sup>. In the present study, the mean BMI was 24.29 kg/m<sup>2</sup>. The calculated BMI was well within the range as per WHO classification, towards the upper limit of normal range. This could be the important reason for the subjects not crossing Q.1 as well as not reaching the second level of RAPA. Their level of physical activity in some other format apart from structured physical activity could not be ruled out in their activities of daily living. Since the perimenopausal women were not obese or overweight, they were not giving importance to exercises in the form of moderate or vigorous physical activity [9]. Kathleen Watson et al suggested that inactivity prevalence increases with increasing BMI in adult >50 years [10]. Saad Bindavas found that both physical inactivity and obesity are associated with decreased gait speed further causing restricted activity [11].

RAPA found its wide application in various studies. Patrick McIntyre in 2010 suggested its use for assessment of physical activity in older adults. He mentioned that it is used for classification of individuals as active or sedentary and established its validity [12].

Annabella Silva, in October 2014 too established its validity and reliability in Portuguese version and found

its good correlation with short physical performance battery test [13].

Annals of sports medicine and research also suggested use of RAPA to measure physical activity. Anna Ruiz suggested that the RAPA can be used to assess physical activity in just 2-5 minutes [14]. Kim M J in 2014 used RAPA and found that moderate level of physical activity was associated with reduce psychosocial and physical menopause symptom in perimenopausal women [2]. Suzan Dewhurst in 2015 quantified physical activity using RAPA in Scottish dancers and controls in elderly women [14]. Patricia Hogue also made use of RAPA to find the effect of buddy support on physical activity in African-American women and described the current levels of physical activity and exercise [15].

In the present study, the mean age was 48.69. This mean age is coinciding with Indian perimenopausal mean age group<sup>1</sup> where the distribution of adipose tissue is the possibility not the weight gain [8]. This could be the important reason that second level of RAPA was attained by 10 subjects only. Therefore it was inferred from the study that most of the perimenopausal women were living healthy lifestyle and maintaining physical activity.

## CONCLUSION

Majority of women were in RAPA 1 level and few or less number were reached the level 2 on RAPA Scale. RAPA 1 itself implying that they were inactive apart from daily household activities. Those women on RAPA 1 level should be encouraged to do physical exercises to maintain their health.

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