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Benefits of exercise in perimenopausal age: an interventional study

Aisha Perveen[1]*, M. Junaid Siddiqui[2], Urmila Bhardwaj[3]

1* Assistant professor, Dept. of Preventive and Social Medicine, F/o Medicine (U), Jamia Hamdard, New Delhi.
2 Professor, Dept. of Preventive and Social Medicine, F/o Medicine (U), Jamia Hamdard, New Delhi.
3 Associate professor, F/o Nursing, Jamia Hamdard, New Delhi.

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***Corresponding author:**

Email : ayesha_alam07@yahoo.com

ABSTRACT

Health and exercise hold immense importance in the life of a woman. The importance of exercise increases rapidly during perimenopausal period. Most of the problems during this period arise due to lack of knowledge and not exercising. If their perception regarding exercise is altered, then this can prove to be helpful in curbing the problems faced. The role of exercise is however unknown to many undergoing this period. Keeping this in mind, we selected women from Gynae OPD and Family Planning Centre, Majeedia Hospital, Jamia Hamdard and familiarized them with the importance of exercise during this stage. One hundred perimenopausal women between the age of thirty to fifty years who could read & understand Hindi and/or English were taken for the study. Self-instructional Module (SIM) based on role of exercise was given and focus group discussion was done weekly. There was a significant difference in the perception scores regarding exercise of the subject before & after intervention as revealed by the Wilcoxon signed Ranks test ($p<0.001$) The study showed that educational level was strongly associated with exercise during this period.

INTRODUCTION

Increasing life expectancy of women in India and health risks associated with premature menopause has laid focus on post menopausal women. About one in five women residing in India are likely to experience menopause by the age of 41[1]. The onset of menopause usually begins between 45 and 55 yrs with a worldwide average of 51. Menopause is the last stage of gradual biological process in which the ovaries reduce their production. Natural menopause is recognised to occur after 12 consecutive months of amenorrhoea, for which there is no other obvious pathological or physiological cause. The term perimenopause includes the period immediately prior to menopause (when the endocrinological, biological and clinical features of approaching menopause commence) and the first year after menopause. Oestrogen production in the body diminishes slowly over a period of a year commonly resulting in hot flushes, night sweats, mood swings and memory loss[2].

Each woman experiences her own variation of typical symptoms of menopause. Techniques for improving the health of post menopausal women currently focus on reducing risk factor such as coronary heart diseases, deep vein thrombosis, breast cancer and gall bladder problems with which HRT may be associated [3]. Hormone therapy remains the recommended treatment for menopausal symptoms but exercise and dietary soya for menopausal symptoms has grown dramatically [4]. Regular exercise prevents the onset of high BP, makes bones stronger, helps to achieve or maintain a healthy weight by burning extra calories and improves sleep [5].

Women in the perimenopause phase face a variety of stress other than just the physiologic and endocrine changes associated with menopause. Children may be leaving home (the empty nest) or returning (the revolving door). Some may be faced with the care of the elderly (eldercare). Pressures from work and running a household are still the dual lot of a great number of women. Added to these are the endocrine and physiologic changes of decreasing ovarian function. Many women either do not attribute these symptoms to perimenopause or deny the fact that these symptoms are due to hormonal changes similar to those of a postmenopausal woman. This is partly owing to the fact that these women are still having almost regular menstrual periods [6]. Research has shown that the perimenopausal and postmenopausal woman can benefit significantly from exercise, whether endurance or strength training. Exercise can improve the quality of life and attenuate some of the physiologic changes associated with aging. Additionally, exercise can ameliorate the decline in fitness and bone, prevent chronic disease, and promote functional independence. Women who exercise regularly throughout life are physiologically 20 to 30 years younger than their sedentary counterparts. Fitness is a lifetime endeavour that

has many positive benefits. Weight-bearing activities are especially important as bone loss increases in the perimenopausal phase of life [7]. A study on perimenopausal women for 18 months which included 105 women concluded that an 18-month program of relatively intense, multi-exercise endurance training resulted in maintenance of bone-mineral density at the clinically important femoral neck of perimenopausal women. Endurance training proved also to be safe and feasible among this subject group[8].

Another recent study explored the effectiveness of a perimenopausal health education intervention for mid-life women in northern Taiwan. One hundred seventy-nine women were in the intervention group and 174 women were in the control group. Education effectiveness was assessed by participants' scores on four questionnaires at the beginning of the study and 3 months after initial recruitment. The intervention group had significantly reduced scores on perimenopausal disturbances ($P<0.005$) and reported increase practice of healthy behaviours ($P<0.001$) compared to the control group[9].

MATERIALAND METHODS

This was an exploratory, descriptive and quasi experimental study. One hundred perimenopausal women between the age of 35-50 years from Gynae OPD and Family Planning Centre at Majeedia Hospital, Jamia Hamdard, New Delhi were included in the study after taking informed consent. Post-menopausal women, those on hormone-replacement therapy, women who had undergone hysterectomy and those who were unwilling to participate in the study after informed consent were excluded from the study.

Description of the study tool: Structured vernacular interview schedule was piloted, translated in Hindi and retranslated in English. The validity of the tool was done by five experts in the field of Gynaecology, community health nursing, psychology, physiotherapy and epidemiology. Focused group discussion was held and audio recording of the proceedings were done. The original English and Hindi text of interview schedule are enclosed in annexure. The vernacular interview schedules used were in Hindi and Urdu.

On the basis of objectives, a structured interview schedule was used for collecting data consisting of three sections.

Section I-A contained five items on age, qualification, religion, occupation and marital status of the subjects.

Section I-B also contained five items on medical history, gynecological, obstetrical and sexual history.

Section II-A contained 25 questions regarding knowledge about perception of menopause.

Section II-B again contained 25 questions regarding general changes like increase in weight, dry skin, hot flushes, night sweats, urinary symptoms, joints pain and headache; Specific changes like breast tenderness, vaginal dryness, itching of skin and sexual problems; psychological changes like forgetfulness, depression, palpitation, anxiety, sleep disturbances, mood swings etc.

Data collection: For the collection of the data permission was taken from the Medical Superintendent, Majeedia Hospital. Before the actual data collection, a pilot study was conducted and the study tool was modified on the basis of inputs received. Interview was carried out in the OPD to elicit their personal history gynaecological & obstetrical history, symptoms, perception and coping strategies of these subjects. During the interview, the structured interview schedule was filled up and the self-instructional module (SIM) was distributed at the end of the interview to each of the subjects. After fifteen days, focus group discussion was held. Second intervention was made through focus group discussion. After the interview, the subjects were called up in groups, each containing 4-5 women and discussed the SIM. They assured that they had properly understood and followed the instructions given in the self-instructional module (S.I.M.). After one month the subjects were again interviewed through interview schedule based on perception and coping strategies to assess their level of perception and coping strategies.

Research Design

1. Population Perimenopausal women (35-50 years) from Gynae OPD and Family Planning Centre.

2. Setting of study Majeedia Hospital, Jamia Hamdard, New Delhi.

3. Sampling technique Purposive sampling technique.

4. Data collection technique Interview schedule, self instructional module, focus group discussion.

5. Data collection tool Interviewed on the first day contact (pre test of knowledge) after informed consent, distribution of self instructional module on the same day, post test of knowledge after one month.

6. Self instructional module was developed validated by experts based on role of exercise to minimize symptoms of menopause including exercise that may reduce osteoporosis.

Analysis and interpretation of data Using descriptive and inferential statistics.

RESULTS

99% of study subjects understood the role of exercise in menopause which was 34% before intervention.

While 24% of the sample subjects had a perception of score zero before intervention, none of them had a zero perception score after intervention. 49% of the subjects had a perception score

Perception regarding exercise before and after intervention

Perception	Before intervention (%)	After intervention (%)
Hot flushes	40	60
Risk of cardiac problem	23	58
Dryness of Skin	48	62
Joint pain and bodyache	52	70
Heavier/Scanty period	70	74
Vaginal dryness	26	81
Diet has no role in menopause	55	97
Calcium and high protein diet minimized	32	99
Exercise has a role in menopause	34	99

Quality of perception regarding exercise before and after intervention

Perception score	Before intervention		After intervention	
	Frequency	Percentage	Frequency	Percentage
No perception (0)	24	24.0	0	0.0
V. poor perception (1-5)	25	25.0	6	6.0
Poor perception (6-10)	13	13.0	23	23.0
Average perception (11-15)	16	16.0	18	18.0
Good perception (16-20)	22	22.0	52	52.0
Excellent perception(>20)	0	0.0	1	1.0
Total	100	100.0	100	100.0

Comparison of perception score of sample subjects before and after intervention.

	25th Percentile	Median	75th Percentile	P value
Perception scores before intervention	1.00	6.00	15.00	<0.001
Perception scores after intervention	10.00	16.00	24.00	<0.001

between 0 and 5 before intervention; after intervention only six had a perception score between 0 and 5. For higher perception grades, poor perception and above, the percentage of subjects was more after intervention as compared to before intervention as can be seen from table 2.

Wilcoxon Signed Ranks test There was a significant difference in the perception scores of the subjects before and after intervention as revealed by the Wilcoxon Signed Ranks Test (P<0.001)

DISCUSSION

The present study is to determine the perception of perimenopausal women regarding role of exercise in perimenopausal phase and to evaluate knowledge of perception through self instructional module.

More than half 55 (55%) of women were housewives; 13 (13%) were teachers; 24 (24%) were paramedical and 8 (8%) were clerks. Majority of the study subjects 92 (92%) were married; 6 (6%) were widowed; 1 (1%) was unmarried and 1 (1%) was divorced.

Comparison of perception scores of sample subjects before and after intervention was done using Wilcoxon Signed Ranks test. There was a significant difference in the perception scores of the subjects before and after intervention as revealed by the Wilcoxon Signed Ranks test. There was a significant difference in the perception scores of the subjects before and after intervention as revealed by Wilcoxon Signed Ranks test (P<0.001).

CONCLUSION

The study revealed that educational level was strongly associated with perception. Results revealed that a literate woman had better perception as compared to an illiterate woman. Self instructional module was found to be very effective in changing the perception of perimenopausal women regarding exercise and management of menopausal syndrome.

Conflict of interest statement:

The authors declare that there are no conflicts of interest.

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