A Study to Assess the Effectiveness of Information Booklet on Knowledge Regarding Prevention of Osteoporosis Among Female Teachers in Raipur, Chhattisgarh

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Abstract: Osteoporosis causes bones to become weak and brittle - so brittle that a fall or even mild stresses such as bending over or coughing can cause a fracture. Osteoporosis-related fractures most commonly occur in the hip, wrist or spine. Bone is living tissue that is constantly being broken down and replaced. Osteoporosis occurs when the creation of new bone doesn't keep up with the loss of old bone. Osteoporosis affects men and women of all races. But white and Asian women, especially older women who are past menopause, are at highest risk. Medications, healthy diet and weight-bearing exercise can help prevent bone loss or strengthen already weak bones. The present study aims to "assess the effectiveness of information booklet on knowledge regarding prevention of osteoporosis among female teachers in Raipur (C.G.)." Objectives: 1) To assess the pretest and posttest level of knowledge on prevention of osteoporosis among female teachers. 2) To evaluate the effectiveness of information booklet on knowledge regarding prevention of osteoporosis among female teachers. 3) To find the association between the knowledge on prevention of osteoporosis among female teachers and selected socio demographic variable. Material and methods: The research approach used was an experimental quantitative evaluative research approach, and the research design of the study was quantitative pre-experimental one group pre-test post-test research design was used for the study. The sample was selected using convenience sampling technique. The study is comprised of 60 female teachers at selected school of Raipur (C.G.). The variables under the study are independent and dependent variables. Independent variable is information booklet regarding prevention of osteoporosis among female teachers and dependent variables is knowledge of female teachers regarding prevention of osteoporosis. A self- structured questionnaire was prepared to assess knowledge regarding prevention of osteoporosis. Validity was ensured through experts and used to test Karl Pearson correlation coefficient was used to test reliability of tools, its value for tool (r=0.7). The data obtained were analysed and interpreted in term of objective and hypothesis. Descriptive and inferential statistics were used for data analysis; the level of significance was at 0.05.

Keywords: Female teachers, Effectiveness, Booklet, Prevention, Osteoporosis.

1. Introduction

The health status of women directly reflects the health status of the nation. The concept of women's health today has become a major concern among the developing countries because of deteriorating quality of life. In the process of trying to build a successful career and taking the primary responsibility of household work and childcare, they end up neglecting their well-being. While there are several health (mental and physical) conditions plaguing modern women, deteriorating bone health is considered to be one of the major ones worldwide.

In most cases, women tend to ignore bone health until they experience severe symptoms. Experts say that the absence of adequate care can weaken or damage the bones over a period of time. This can lead to various bone diseases, including the most-common condition - osteoporosis. Bone disease occurs when the body loses too much bone mass, makes too little of it, or both. A World Health Organization report says that osteoporosis is the second-most global health care problem, after cardiovascular disease. In fact, some studies suggest that Indians are more vulnerable to the bone condition due to their lifestyle and genetic factors.

Women reach peak bone mass around the age of 25 to 30 years, when the skeleton has stopped growing and bones are at their strongest and thickest. The female hormone, oestrogen, plays an important role in maintaining bone strength. Oestrogen levels drop around the time of menopause, which occurs on average at the age of 50 years, resulting in increased bone loss. Research suggests that about one in two women over the age of 60 years will experience at least one fracture due to osteoporosis. Estrogen helps in the positive calcium metabolism and esteogenesis. Menopause accelerates the bone loss to 2-5% per year, which may continue till 10 years. Prevalence of osteoporosis increases with age in women and not in men. It is reported that 42.5% women and 24.6% men above the age of 50 years suffer from osteoporosis in India.

Malhotra et al conducted a study and reveal that about 25

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million Indians were affected with osteoporosis based on the available data and clinical experience. They stated that a healthy lifestyle that include diet, exercise and exposure to sunlight could have a major impact on the bone health of Indians and recommended these measures to the population at large as they were efficacious, safe and cost-effective.

The US Surgeon General has outlined a 'pyramid approach' to treating bone diseases. Prevention of falls with maintenance of bone health through adequate calcium, vitamin D, and physical activity represent the base of the pyramid for all individuals, including those with bone disease. The second tier of this pyramid relates to identifying and treating secondary causes of osteoporosis. Lastly, the third tier revolves around pharmacotherapy.

The basic requirement for managing any chronic health disorder starts with evaluation of the awareness about the disease among the target subjects. Although a good understanding of the disease may not be sufficient to bring about changes in health-related behavior, adequate knowledge is a prerequisite for the success of preventive efforts.

2. Material and Method

The research approach used was an experimental quantitative evaluative research approach, and the research design of the study was quantitative pre-experimental one group pre-test post-test research design was used for the study. The sample was selected using convenience sampling technique. An extensive review of literature was undertaken in various related concepts. The study adopted "Ludwig von Bertalanffy" modified system model. The study was comprised of 60 female teachers at selected school of Raipur (C.G.). The Independent variable was information booklet regarding prevention of osteoporosis among female teachers and dependent variables was knowledge of female teachers regarding prevention of osteoporosis. A self- structured questionnaire was prepared to assess knowledge regarding prevention of osteoporosis. Validity was ensured through experts. Pilot study was conducted among 10 female teachers. Samples were selected to find out feasibility of conducting the main study and to assess the knowledge.

The data was collected for main study between 19/10/2022 to 30/10/2022. On the first day pre-test was conducted to assess the knowledge and receive booklet regarding prevention of osteoporosis. A post-test, identical to the pre-test was done on 7" day for knowledge for both groups, to evaluate the effectiveness booklet. The data were analyzed using descriptive and inferential statistics. Descriptive and inferential statistics were used for data analysis the level of significance was <0.05

3. Results

A. Overall Analysis to Assess the Pre-Test and Post –Test Knowledge Score Regarding Prevention of Osteoporosis

In pretest majority of subjects 5(8.33%) had good knowledge score, 19 (31.6) had average knowledge, 1(1.6) excellent knowledge and 8 (13.3) had poor knowledge about prevention of osteoporosis. However, in post- test knowledge score was increase majority 42 (70%) had excellent knowledge score, 17 (28.4) had good knowledge, 1 (1.6) had average knowledge about prevention of osteoporosis.
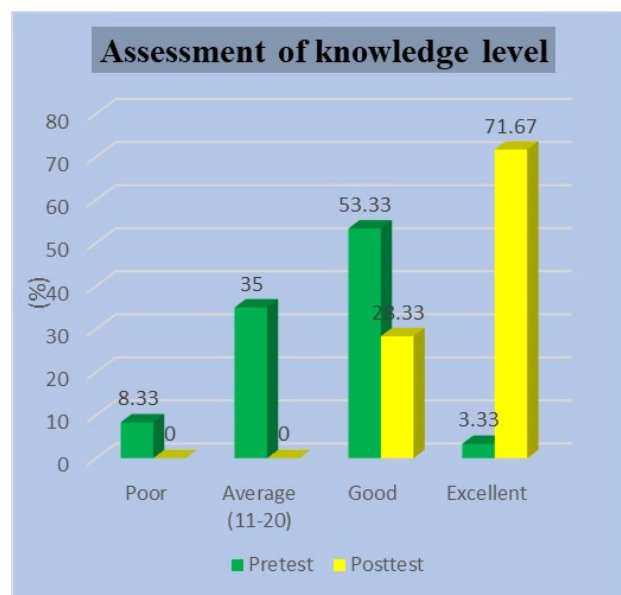

Fig. 1.

B. Area Wise Analysis to Assess the Pre-Test and Post-Test Knowledge Score Regarding Prevention of Osteoporosis Among Female Teachers

With regard to in the area wise analysis of knowledge score among the female teachers in pretest the area of general concept mean score % was 51.42, in the area of Causes, risk factors mean score % was 52.22, in the area of symptoms mean score % was 47.5, in the area of Diagnostic test mean score % was 41.5, in the area of prevention & management mean score % was 50, in the area of dietary intake and complications mean score % was 50. However, in posttest in the area of general concept mean score % was 84, in the area of Causes, risk factors mean score% was 83.44, in the area of symptoms mean score % was 49, in the area of Diagnostic test mean score % was 90, in the area of prevention & management mean score % was 82.27, in the area of dietary intake and complications mean score % was 82.28.

Table 1

Overall Knowledge	Pre-Test		Post-Test	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Poor (0-10)	5	8.33%	0	0%
Average (11-20)	21	35%	0	0%
Good (21-30)	32	53.33%	17	28.33%
Excellent (31-40)	2	3.33%	43	71.67%
Total	**60**	**100%**	**60**	**100%**

C. Analysis to Evaluate the Effectiveness of Information Booklet on Knowledge Regarding Prevention of Osteoporosis

With regards in paired t test analysis show the effectiveness of information booklet in improving the level of knowledge regarding prevention of osteoporosis in which pretest mean is 20.7, mean percentage is 50.68% while in posttest mean is 33.57 and mean percentage is 83.93. The standard deviation of Pre-test is 5.67 & posttest is 3.27. it indicates that there is significant gain in knowledge score in post-test after the administration of information booklet since the calculated "t" value is 14.25 is greater than the table value 3.46 at P< 0.05 level of significance. The data significant that the calculated score is greater than table value was found to be significant at 0.05 level of significance.

4. Discussion

In present study overall analysis of pre-test and post –test knowledge score regarding prevention of osteoporosis. In pretest majority of subjects 5(8.33%) had good knowledge score, 19 (31.6) had average knowledge, 1(1.6) excellent knowledge and 8 (13.3) had poor knowledge about prevention of osteoporosis. However, in post- test knowledge score was increase majority 42 (70%) had excellent knowledge score, 17 (28.4) had good knowledge, 1 (1.6) had average knowledge about prevention of osteoporosis.

So, when compare to pretest and post overall knowledge level of female teacher indicated that in all areas of knowledge post test score was more than the pretest overall knowledge score. It concludes that information booklet helps to increase posttest overall knowledge. The above finding is supported by a study done by Bharti Sachdeva Sahni, (2012) The present study aims to assess the effectiveness of Self-Instructional Module regarding prevention of Osteoporosis among working women in selected institutions of Bangalore. Sample consisted of 60 female teachers, who met the inclusion & exclusion criteria. In the pre-test the subjects had inadequate knowledge with a mean of 12.45 and standard deviation of 2.05 where as in post-test there was a significant mean knowledge gain of 22.55 and standard deviation of 0.69. A significant association was found between age and educational status of participants with mean post- test knowledge score. The study concluded that there was a significant improvement of knowledge among working women in post-test after administering self-instructional module. Thus, the study findings indicate that self-instructional module was effective enhancing the knowledge of working women regarding prevention of Osteoporosis.

5. Conclusion

On the basis of finding of the study, following conclusion was drawn,

- In the present study it shows that in pretest there was lack of knowledge regarding prevention of osteoporosis among female teachers. But after the administration of information booklet subjects had an increase in knowledge which was depicted by posttest score. Hence it shows that there is significant effectiveness of information booklet on knowledge regarding prevention of osteoporosis among female teachers.
- In pretest among female teachers had average and good knowledge score as subjects had given information booklet most of the subjects got good and excellent knowledge score which indicates the effectiveness of information booklet.
- It also concluded that knowledge of the teachers about osteoporosis was update and their preventive practices were somewhat adequate concerning dietary habits and moderate concerning physical activity. There is a serious lack of adoption of preventative practices for osteoporosis. This was primarily due to little appreciation of the seriousness of osteoporosis. Informational booklet is an effective strategy in enhancing knowledge, developing favorable attitude, and improving practices of female teachers regarding prevention of osteopororosis, Hence, this study highlights the dire need for awareness about practices and attitudes related to the disease. Furthermore, it could be of paramount importance to future studies conducted on practices and beliefs related to osteoporosis.

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