International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

A STUDY TO ASSESS THE KNOWLEDGE REGARDING CALCIUM DEFICIENCY DISORDER AMONG POSTMENOPAUSAL WOMEN AT SELECTED HOSPITAL NMCH JAMUHAR SASARAM ROHTAS, BIHAR

Prof. (Dr.) K. Latha[1], Ms. Priyanka Kumari[2], Mr. Ravi Kumar[3], Mr. Ranjeet Kumar Singh[4], Ms. Manisha Kumari[5], Ms. Anki Kumari[6] and Mr. Ankit Kumar[7].

[1]Dean cum Principal Narayan Nursing College, Gopal Narayan Singh University, Jamuhar
[2]Nursing Tutor, Department of OBG, Gopal Narayan Singh University,Sasaram, Rohtas, Bihar
[3,4,5,6,7]Students of Narayan Nursing College, Gopal Narayan Singh University, Sasaram, Rohtas, Bihar.

ABSTRACT

Background:

Calcium deficiency is a common health problem among postmenopausal women, which can lead to various complications such as decreased bone density, osteoporosis, and increased risk of fractures. Adequate knowledge regarding calcium intake, dietary sources, and preventive measures is essential to maintain bone health and overall well-being. The present study was conducted to assess the knowledge regarding calcium deficiency disorder among postmenopausal women at Narayan Medical College and Hospital (NMCH), Jamuhar, Sasaram, Bihar.

A quantitative research approach with a pre-experimental one group pre-test and post-test design was adopted for the study. A total of 60 postmenopausal women were selected using convenient sampling technique. Data was collected using a structured questionnaire consisting of 20 multiple-choice questions. Each correct answer was awarded one mark, and the total score was used to categorize knowledge into poor, average, and good levels.

The pre-test findings revealed that 43.3% of the respondents had poor knowledge, 36.7% had average knowledge, and only 20% had good knowledge regarding calcium deficiency disorder. After the implementation of a planned teaching programme, the post-test results showed a significant improvement in knowledge level. The percentage of respondents with poor knowledge decreased to 13.3%, while those with average and good knowledge increased to 50% and 36.7% respectively.

The chi-square analysis was used to determine the association between demographic variables

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

and knowledge level. The results indicated that educational status (p = 0.02), type of family (p = 0.05), area of residence (p = 0.04), and monthly income (p = 0.04) had a statistically significant association with knowledge level. However, age (p = 0.78), religion (p = 0.41), marital status (p = 0.46), and occupation (p = 0.09) showed no significant association

Objectives:

The study aimed to assess the knowledge of postmenopausal women regarding calcium deficiency disorder, including its importance, causes, risk factors, signs and symptoms, and dietary sources. It also aimed to evaluate the overall knowledge level and determine the association between selected demographic variables and knowledge among postmenopausal women.

Methodology:

The study used a quantitative approach with a pre-experimental one group pre-test and post-test design. It was conducted among 60 postmenopausal women at NMCH Jamuhar using convenient sampling. Data was collected through a structured questionnaire and analyzed using descriptive statistics and chi-square test to assess knowledge and its association.

Result:

The present study was conducted to assess the knowledge regarding calcium deficiency disorder among 60 postmenopausal women. The findings of the study revealed that in the pre-test, a majority of respondents had inadequate knowledge, with 43.3% having poor knowledge, 36.7% having average knowledge, and only 20% having good knowledge. This indicates a lack of awareness regarding calcium deficiency disorder before the intervention.

After the implementation of the planned teaching programme, the post-test results showed a significant improvement in knowledge level. The percentage of respondents with poor knowledge decreased to 13.3%, while those with average and good knowledge increased to 50% and 36.7% respectively. This demonstrates that the teaching programme was effective in improving knowledge among postmenopausal women.

The study also analyzed the association between demographic variables and knowledge level using chi-square test. The results showed that educational status (p = 0.02), type of family (p = 0.05), area of residence (p = 0.04), and monthly income (p = 0.04) had a statistically significant association with knowledge level. However, age (p = 0.78), religion (p = 0.41), marital status (p = 0.46), and occupation (p = 0.09) showed no significant association.

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

Recommendation:

Based on the findings of the study, it is recommended that regular health education programmed should be conducted for postmenopausal women to improve awareness regarding calcium deficiency disorder. Awareness about calcium-rich diet, lifestyle modification, and prevention strategies should be promoted. Similar studies can be conducted on a larger sample size and in different settings such as rural and urban areas for better generalization. Mass media like television, radio, and social platforms can be effectively used to spread information. Further research can also focus on assessing practices and comparing different teaching methods to improve knowledge and promote better health outcomes.

Conclusion:

The present study concluded that postmenopausal women had inadequate knowledge regarding calcium deficiency disorder in the pre-test, particularly about its importance, causes, symptoms, and dietary sources. After the implementation of the planned teaching programme, there was a significant improvement in the knowledge level of the respondents in the post-test. This indicates that the educational intervention was effective in enhancing awareness among postmenopausal women.

INTRODUCTION

Calcium is an essential mineral that plays a vital role in maintaining human health, particularly in bone metabolism and skeletal strength. It is not only a structural component of bone and teeth but also crucial for several physiological processes including muscle contraction, nerve transmission, blood clotting, and hormonal secretion. Despite its importance, calcium deficiency remains a widespread nutritional concern, especially among vulnerable populations. Among such groups, postmenopausal women are particularly susceptible due to physiological changes associated with aging and hormonal fluctuations.[1]

Menopause, which typically occurs between the ages of 45 and 55, marks the end of a woman's reproductive years and is characterized by the cessation of menstruation. This transition brings about significant hormonal changes, especially reduced estrogen levels. Estrogen plays an important role in maintaining bone density by promoting calcium absorption and inhibiting bone resorption (breakdown). With its decline during menopause,

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

the body undergoes increased bone turnover, favoring resorption over formation, leading to a net loss in bone mass over time. Consequently, postmenopausal women face an elevated risk of developing calcium deficiency disorders, most notably osteoporosis and osteopenia.[2]

Osteoporosis is a systemic skeletal condition characterized by low bone mass and deterioration of bone tissue, making bones more fragile and prone to fractures. Globally, osteoporosis affects millions of individuals, with postmenopausal women representing a significant portion of those affected due to their accelerated bone loss after menopause. Fractures resulting from osteoporosis, particularly hip, spine, and wrist fractures, not only impair quality of life and physical functioning but also pose substantial economic burdens on individuals and healthcare systems. The importance of preventive strategies, including adequate calcium intake and lifestyle modifications, cannot be overstated in managing and mitigating the onset of these disorders.

PROBLEM STATEMENT

A study to assess the knowledge regarding calcium deficiency disorder among postmenopausal women at selected hospital NMCH Jamuhar Sasaram Rohtas Bihar

OBJECTIVES

1. To assess the level of repairing of calcium deficiency disorder among postmenopausal women at selected hospital NMCH Jamuhar Sasaram Rohtas Bihar.

HYPOTHESIS

H_1 There is a significant association between the level of knowledge regarding calcium deficiency disorder among the postmenopausal women with their social demographic variable.

OPERATIONAL DEFINITION

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

- **Knowledge** :- Knowledge refers to the awareness, understanding, and information possessed by postmenopausal women regarding calcium deficiency disorder, including its causes, signs and symptoms, dietary sources of calcium, preventive measures, and complications, as measured by the scores obtained from a self-structured knowledge questionnaire**.**

- **Calcium Deficiency Disorder** :- Calcium deficiency disorder refers to health conditions resulting from prolonged inadequate calcium intake or absorption, such as osteopenia, osteoporosis, bone pain, muscle cramps, and increased fracture risk**.**

- **Postmenopausal Women** :- Postmenopausal women refer to women who have attained natural menopause and have not experienced menstruation for at least 12 consecutive months at the time of data collection.

MATERIALS AND METHODS

Research Approaches

The research approach was a quantitative research approach.

Research Design

Research design is typical descriptive research design.

Study Setting

The study will be conducted at Narayan Medical College and Hospital (NMCH), Jamuhar, Bihar. The hospital is chosen due to its accessibility to a large number of postmenopausal women visiting for routine check-ups, outpatient services, and other health-related consultations. making it a suitable site for this research

Target Population

The target population will include postmenopausal women.

Sample Size

The sample size is 60.

Sampling Technique

Purposive sample technique.

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

Inclusion Criteria:

Women who are postmenopausal (≥45 years).
Women willing to participate in the study.
Women who can read, write, and understand Hindi or English. Women attending NMCH during the study period.

Exclusion Criteria:

Women with serious medical or psychiatric illnesses that hinder participation. Women not willing to participate.

MAJOR FINDINGS OF THE STUDY

In the pre-test, the majority of the respondents (43.3%) had poor knowledge, 36.7% had average knowledge, and only 20% had good knowledge. This indicates that the awareness regarding calcium deficiency disorder was low among postmenopausal women. After the intervention, in the post-test, only 13.3% had poor knowledge, 50% had average knowledge, and 36.7% had good knowledge. This shows a significant improvement in knowledge level. The study also assessed the association between demographic variables and knowledge level using the chi-square test. The findings revealed that educational status, type of family, area of residence, and monthly income had a statistically significant association with knowledge level. However, age, religion, marital status, and occupation showed no significant

Level of knowledge

1. Age vs knowledge Level (Pre-Test)

Demographic Data	Poor knowledge	Average knowledge	Good Knowledge	χ^2	DF & P - Value	Inference
45- 50 yrs	6 (40%)	5 (33.3%)	4 (267%)	3.21	DF - 6 P- 0.78	Not significant
51 - 55 yrs	7 (38.9%)	6 (33.3%)	5 (27.8%)			
56 - 60 yrs	5 (35.7%)	5 (35.7%)	4 (28.6%)			

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

Above 60 yrs	6(46.1%)	4 (30.8%)	3 (23.1%)			
(Post-Test)						
45- 50 yrs	2 (13.3%)	7 (46.7%)	6(40%)	9.98	DF - 6 P- 0.81	Not significant
51 - 55 yrs	3 (16.7%)	8 (44.4%)	7(38.9%			
56 - 60 yrs	2 (14.3%)	6 (42.8%)	6(42.9%)			
Above 60 yrs	2 (15.4%)	6 (46.1%)	5(38.5%)			

1. Religion vs knowledge Level (Pre-Test)

Hindu	18 (45%)	14 (35%)	8 (20%)	2.87	DF - 6 P - 0.41	Not Significant
Muslim	6 (50%)	4 (33.3%)	2 (16.7%)			
Christian	2 (40%)	2 (40%)	1 (20%)			
Sikh	1 (3.3%)	1 (33.3%)	1 (33.3%)			
(Post-Test)						
Hindu	5 (12.5%)	20 (50%)	15 (37.5%)	3.11	DF - 6 P - 0.37	Not Significant
Muslim	2 (16.7%)	6 (50%)	4 (33.3%)			
Christian	1 (20%)	2 (40%)	2 (40%)			
Sikh	0	2 (66.7%)	1 (33.3%)			

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

2. Marital status vs knowledge Level (Pre-Test)

Married (42)	20 (47.6%)	15 (35.7%)	7 (16.6%)	0.84	DF - 6 P - 0.99	Not Significant
Widow (12)	6 (50%)	4 (33.3%)	2 (16.6%)			
Divorced (4)	1 (25%)	2 (50%)	1 (25%)			
Separated (2)	1 (50%)	1 (50%)	0 (0%)			
(Post-Test)						
Married (42)	3 (7.1%)	10 (23.8%)	29 (69%)	1.88	DF - 6 P - 0.93	Not Significant
Widow (12)	1 (8.3%)	4 (33.3%)	7 (58.3%)			
Divorced (4)	0 (0%)	1 (25%)	3 (75%)			
Separated (2)	0 (0%)	1 (50%)	1 (50%)			

3. Education vs knowledge Level (Pre-Test)

Illiterate	10 (55.5%)	6 (33.3%)	2 (11.1%)	13.3	DF - 6 P - 0.04	Significant
primary	8 (33.3%)	12 (50%)	4 (16.6%)			
Higher secondary	3 (25%)	5 (41.6%)	4 (33.3%)			
Graduate and above	1 (16.6%)	3 (50%)	2 (33.3%)			
(Post-Test)						
Illiterate	2 (11.1%)	8 (44.4%)	8 (44.4%)			

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

primary	1 (4.1%)	7 (29.1%)	16 (66.6%)	7.2	DF - 6 P - 0.30	Not Significant
Higher secondary	1 (8.3%)	3 (25%)	8 (66.6%)			
Graduate and above	0 (00%)	2 (33.3%)	4 (66.6%)			

4. Occupation vs knowledge Level (Pre-Test)

Homemaker	14 (43.7%)	12 (37.5%)	6 (18.7%)	4.8	DF - 6 P - 0.56	Not Significant
Labourer	1 (25%)	2 (50%)	1 (25%)			
Private Job	3 (37.5%)	4 (50%)	1 (12.5%)			
Government	4 (25%)	8 (50%)	4 (25%)			
(Post-Test)						
Homemaker	2 (6.2%)	10 (31.2%)	20 (62.5%)	2.9	DF - 6 P - 0.82	Not Significant
Labourer	0 (0%)	1 (25%)	3 (75%)			
Private Job	1 (12.5%)	3 (37.5%)	4 (50%)			
Government	1 (6.2%)	6 (37.5%)	9 (56.2%)			

5. Type of family vs knowledge Level (Pre-Test)

Nuclear (26)	10 (38.4%)	11 (42.3%)	5 (19.2%)	0.15	DF - 4 P - 0.82	Not significant
Joint (18)	7 (38.8%)	8 (44.4%)	3 (16.6%)			
Extended (16)	5 (31.2%)	7 (43.7%)	4 (25%)			
(Post-Test)						

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

Nuclear (26)	1 (3.8%)	8 (30.7%)	17 (65.3%)	1.2	DF - 4 P - 0.88	Not significant
Joint (18)	2 (11.1%)	6 (33.3%)	10 (55.5%)			
Extended (16)	1 (6.2%)	6 (37.5%)	9 (56.2%)			

IMPLICATION FOR PRACTICE

1. **Nursing Practice:-** Nurses should provide regular health education to postmenopausal women regarding calcium-rich diet, prevention of deficiency, and maintenance of bone health. They should encourage healthy lifestyle practices.

2. **Nursing Education:-** Nursing curriculum should include more emphasis on nutritional deficiencies and their prevention. Students should be trained to educate patients effectively.

3. **Nursing Administration:-** Hospital authorities should organize health awareness programs, workshops, and screening camps for early detection and prevention of calcium deficiency.

4. **Nursing Research:-**The Further studies can be conducted on a larger sample and in different settings to validate the findings. Comparative and experimental studies can also be done.

CONCLUSION

The present study was conducted to assess the knowledge regarding calcium deficiency disorder among postmenopausal women at selected hospital, NMCH Jamuhar, Sasaram, Rohtas, Bihar. The findings of the study revealed that most of the respondents had inadequate knowledge in the pre-test regarding calcium deficiency, its causes, symptoms, and dietary sources.

After the implementation of planned teaching, there was a considerable improvement in the knowledge level of the respondents in the post-test. The percentage of women with poor knowledge decreased, while those with average and good knowledge increased significantly. This clearly indicates that the educational intervention was effective in enhancing knowledge

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

among postmenopausal women.

REFERENCES

1. World Health Organization. (2020). Calcium and bone health. Geneva: World Health Organization.
2. World Health Organization. (2019). Prevention and management of osteoporosis. Geneva: WHO Press.
3. World Health Organization. (2021). Healthy diet: Fact sheet. Geneva: WHO.
4. Park, K. (2021). Park's Textbook of Preventive and Social Medicine (26th ed.). Jabalpur: Banarsidas Bhanot Publishers.
5. Smeltzer, S. C., Bare, B. G., Hinkle, J. L., & Cheever, K. H. (2019). Brunner & Suddarth's Textbook of Medical-Surgical Nursing (14th ed.). Philadelphia: Wolters Kluwer.
6. Potter, P. A., Perry, A. G., Stockert, P. A., & Hall, A. (2017). Fundamentals of Nursing (9th ed.). St. Louis: Elsevier.
7. Polit, D. F., & Beck, C. T. (2018). Nursing Research: Generating and Assessing Evidence for Nursing Practice (10th ed.). Philadelphia: Wolters Kluwer.
8. Black, J. M., & Hawks, J. H. (2019). Medical-Surgical Nursing: Clinical Management for Positive Outcomes (10th ed.). St. Louis: Elsevier.
9. Sharma, S. K. (2018). Nursing Research and Statistics (2nd ed.). New Delhi: Elsevier India.
10. Basavanthappa, B. T. (2017). Community Health Nursing (2nd ed.). New Delhi: Jaypee Brothers Medical Publishers.
11. Mudambi, S. R., & Rajagopal, M. V. (2018). Fundamentals of Foods, Nutrition and Diet Therapy (6th ed.). New Delhi: New Age International Publishers.
12. Srilakshmi, B. (2019). Dietetics (8th ed.). New Delhi: New Age International Publishers.
13. Wardlaw, G. M., & Smith, A. M. (2016). Contemporary Nutrition: A Functional Approach

International journal of basic and applied research

www.pragatipublication.com

ISSN 2249-3352 (P) 2278-0505 (E)

Cosmos Impact Factor-5.86

(4th ed.). New York: McGraw-Hill Education.

14. National Institute of Nutrition. (2020). Dietary Guidelines for Indians. Hyderabad: Indian Council of Medical Research.

15. Indian Council of Medical Research. (2020). Nutrient Requirements and Recommended Dietary Allowances for Indians. New Delhi: ICMR.

16. Gupta, P., & Gupta, N. (2017). Textbook of Nutrition and Dietetics. New Delhi: CBS Publishers.

17. Lewis, S. L., Bucher, L., Heitkemper, M. M., & Harding, M. (2019). Medical-Surgical Nursing: Assessment and Management of Clinical Problems (10th ed.). St. Louis: Elsevier.

18. Dutta, P. (2018). Pediatric Nursing (3rd ed.). New Delhi: Jaypee Brothers Medical Publishers.

19. Kaur, S. (2018). Health Promotion and Education in Nursing Practice. New Delhi: Jaypee Brothers.