

2015

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Recommended Citation

Gosselin, Jeanne T., "Osteoporosis: Prevention, Screening, and Treatment in the Primary Care Setting" (2015). *Family Medicine Clerkship Student Projects*. 71.

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Osteoporosis: Prevention, Screening and Treatment in the Primary Care Setting

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April, 2015

Problem Identification and Description of Need

- Osteoporosis is often viewed as an inevitable part of aging rather than what it is: a largely preventable disease.
- Confusion may exist surrounding osteoporosis prevention, screening, and treatment recommendations due to a lack of access to a consolidated, concise resource for PCPs.
- Assessment of fracture risk utilizing a validated tool is not routinely performed by PCPs
 - populations with risk factors other than age and sex may be under-screened and under-treated.
- Medicare reimbursement for osteoporosis screening does not reflect current understanding of the disease process, and potentially leads to over-utilization of screening.

Public Health Cost and Unique Cost to Community

- In 2000, prevalence of osteoporosis reached 24 million in the U.S. and has continued to grow with an aging population
 - 15 to 20 million are women over 45 years of age
- Approximately 50% of all postmenopausal women will have an osteoporosis-related fracture in their lifetime
 - 25% will develop a vertebral deformity
 - 15% will suffer a hip fracture
 - Of those with hip fracture, 50% will become permanently disabled with 20-25% requiring long-term care

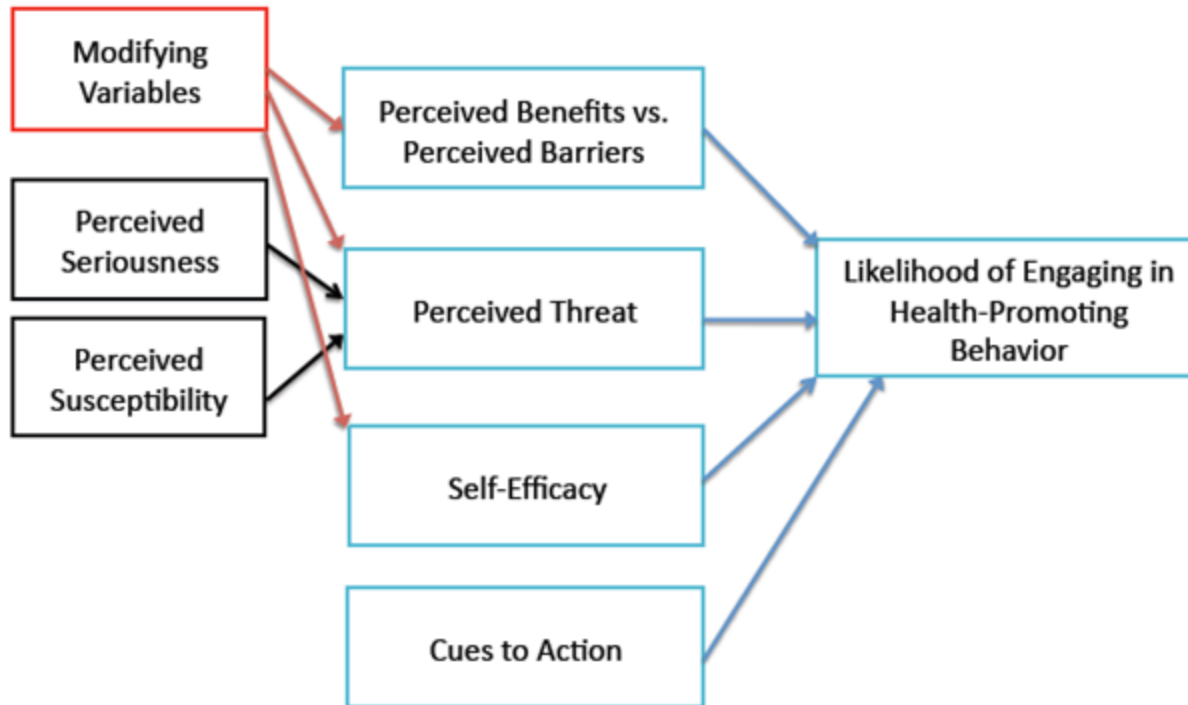
- In Vermont, 21% of women and 6% of men over age 50 have osteoporosis.
- 2,594 Vermont residents were hospitalized with osteoporosis-related conditions between 1993 to 1997, costing nearly \$4.7 million annually.
- According to National Osteoporosis Foundation statistics, the prevalence of Vermont men and women who have or are at high risk for developing osteoporosis will increase by 40-50% from 2002 to 2020
 - this represents a significant increase in the financial and social impact osteoporosis will continue to have on Vermont communities as the population ages.

Community Perspective and Support

- I spoke with the five physicians at BFM and they indicated that, in addition to patient education, an intervention including practice recommendations would be very useful.
 - A lack of guidelines pertaining to screening intervals was identified as a challenge.
 - A lack of formal incorporation of osteoporosis prevention, treatment, and education into the Medicare wellness visit was also cited as a deficiency.
- I spoke with [name withheld], founding member of the International Society for Clinical Densitometry (ISCD) and Director of the Osteoporosis Center at the University of Vermont Medical Group, about the questions that still remain surrounding the use of Dual-energy X-ray absorptiometry (DXA) in predicting fracture risk and what this uncertainty means for the application of DXA scans in the clinical setting.
 - DXA scans provide the diagnosis of osteoporosis but they represent only one component in the calculation of fracture risk.
 - An evolving understanding of bone mineral density and its role in predicting fracture risk contributes to the difficulty in establishing guidelines.

Intervention and Methodology

- Developed a patient education pamphlet based on concepts from The Health Belief Model:



- Developed a PCP information sheet to assist providers in working with patients, particularly in the model areas of perceived seriousness and susceptibility, and cues to action.

Results/Response: Qualitative

- Patients were receptive to the pamphlet but it was clear that many had not considered their risk of osteoporosis and the potential for fractures as a result of the disease.
 - This may provide a very rough estimation of the quality and quantity of current osteoporosis education in primary care settings.
- Patients seemed genuinely interested in learning more and the majority stated they would continue to read the pamphlet at home.
- Both the pamphlet and the practitioner guidelines were well received by all physicians within the group and while it is uncertain how the information will impact practice, these materials will provide a foundation for expanding osteoporosis education at BFM.
 - The materials directly met a stated need.

Evaluation of Effectiveness and Limitations

- By the end of the study period, there was minimal implementation of the intervention or objective data collected on its effectiveness due to the short duration of the clerkship.
- As intended, the pamphlet will fill a void in osteoporosis education and allow the physician to work with patients more effectively and efficiently in the context of improved patient awareness and understanding gleaned from a time-conserving educational tool.
 - Measuring changes in screening rates, the incidence of osteoporosis in practice patients, or patient satisfaction following educational interventions would be quantitative and qualitative approaches to evaluating effectiveness.
- Limitations include the applicability to racial groups other than Caucasian, accessibility to non-English speakers, and the relative difficulty of evaluating the effectiveness of such an intervention given the time course of the disorder.

Future Interventions/Projects

- A longitudinal study of patients in the family practice setting that examines the effectiveness of early osteoporosis intervention (directed at the adolescent patient) would contribute greatly to the understanding and management of osteoporosis as a preventable disease.
- Implementation of educational interventions specifically related to osteoporosis prevention at wellness visits after age 35, and collection of data to capture before and after practice rates of osteoporosis diagnosis by age 65, would also provide useful information for management in the adult primary care setting.

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