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Benchmark Project on Interactive Education Class for Osteoporosis Patients

A Paper Submitted in Partial Fulfillment of the Requirements

For NURS 5382: Capstone

In the School of Nursing

The University of Texas at Tyler

by

Adrienne N. Johns

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Acknowledgments

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Executive Summary

Preventative health measures and health educational programs are becoming more popular as the years pass, all with the goal to better the patient. The common state of health of many Americans is poor and many suffer with many co-morbidities. The goal is to prevent patients from being diagnosed with lifetime diseases, however that is not always the way it goes. So why not empower patients that have been diagnosed with a lifetime disease by providing an educational opportunity to not just live with the disease but thrive and have a great quality of life.

This project focuses on the disease osteoporosis and how a non-traditional educational program offered to retirement communities can impact their health in a positive manner. Jensen et al., (2018) study was shown that patients had not had extensive conversations about managing their osteoporosis and had hopes of learning more about their disease while attending the group educational classes. The goal of this project is to provide a non-traditional class to a retirement community / nursing home on the subject of osteoporosis. This class will focus on all the different aspects of managing the disease, from dietary concerns, physical activity , general pathophysiology of the disease, and how to live safely with the disease all while having good quality of life. The participants will be given a pre class survey to assess their knowledge, and then they will take the same survey ten weeks after the class to see if what they learned was applied to their daily living. If the change is significant, the goal is to apply this research project on several other retirement communities / nursing homes to see if the results are consistent.

Osteoporosis

Osteoporosis, a chronic disease that slowly deteriorates bones throughout the body overtime. As bones deteriorate the bone mass decreases, which allows the risk for a fracture to increase. Osteoporosis in the elderly population is an increasing concern, not only for the patients themselves but also for the healthcare world. The PICOT question that guided the review of literature is: in adult patients diagnosed with osteoporosis who are at risk for bone fractures (P), how does interactive patient education on disease management and fracture prevention (I) compared to general patient education (C) affect the patients understanding of the disease process , risk factors and quality of life (O) within a ten week period (T)? The aim of this evidence based change is to focus on an alternate education program for osteoporosis patients' to better equip them to care for and understand their diagnosis.

Rationale for the Project

Due to the osteoporosis pathophysiology on the skeletal system of the body it can increase the patients' risk of fractures which also increases their morbidity rates, mortality rates and healthcare costs (Beauvais & Poivret et al., 2019). One goal of this project is to make sure that patients are set up for success because unmet informational needs can lead to psychosocial consequences resulting in poor medical management adherence (Raybould et al., 2018). The other goal of this project is to empower nurses with alternative routes of education for patients in the elderly community that may have or be at risk for osteoporosis. If nurses are empowered to educate their patients it can cause a domino effect and improve patients' self-confidence in their health while also improving the patients' quality of life. Standard education usually involves educational reading material in an after visit summary from the patients' doctor's office or hospital stay and that is it. There is usually no follow up to assess if the patient understood all the

information and was able to apply it to their everyday lifestyle. In the article by Beauvais and colleagues many participants' expressed interest in alternative educational material such as physical activity, fall prevention and diet information and also preferred group sessions to learn about osteoporosis (Beauvais & Poivret et al, 2019). As healthcare workers we are to listen to what patients have to say, especially something that could benefit them and their life in the long run.

Literature Synthesis.

Many published studies have shown the importance of an interactive educational program focusing on osteoporosis for those of the geriatric population. Jensen et al., (2018) found that patients were more equipped to make important decisions about managing their health while living with osteoporosis. The studies chosen have several common factors focusing on fractures or fall efficacy, patient knowledge of the disease , the ability to manage the disease and the patients' quality of life. The hope is to make the option to provide a non-traditional, lower cost educational approach to improve osteoporosis disease management (Danila et al., 2018)

Park et al., (2017) evaluated fall efficacy in the study and it was shown that an increase in osteoporosis knowledge and routine exercise benefits the participant. Several other studies by Kachhwaha et al., (2018), Sciamanna et al., (2018) and another study by Dizdar et al., (2018) focused on the use of aerobic exercises, range of motion and balance training increasing participants fall efficacy. Increasing fall efficacy is important because it can decrease a persons' fear of falling which is directly correlated to a persons' functional ability, social health and all over well-being (Kachhwaha et al., 2018).

Zou et al., (2017) found that meaningful educational programs offered to people who have been diagnosed with osteoporosis may have a reduced probability of having a fragility

fracture. Edmonds et al., (2017) and Park et al., (2017) specifically focused on educational programs in different elderly communities, with both showing improvement in the participants knowledge of osteoporosis in a feasible manner. Kloseck et al., (2017) study did not show a significant change in patients' knowledge however it was shown that educational groups can lead to a positive health behavior in senior citizens.

Project Stakeholders

Stakeholders at large for this project would be the insurance company, Medicaid, Medicare that the participant may have. The physicians and medical staff treating the participant either in an acute or chronic manner are also considered stakeholders. Other stakeholders consist of other staff such as dietary, therapy, nurse aides and all other staff at the nursing home or retirement community that may participate in the patients care, either directly or indirectly. This project will not only cause change in their lives for ten weeks, but the hope is to provide a positive impact on the participant to make permanent changes.

Implementation Plan

The first steps are all during the preparation stage, planning the exact material to be presented and how it will be presented. For this project the idea is to provide a nontraditional mode of education on osteoporosis and fracture prevention. The selected population will be either nursing home or retirement home residents. The information will be provided in a handout, visual aids and inactive conversations with the educators and participants. Once the educational material is finalized, it will be presented to the retirement home and a set schedule will be created as to when and where the class will be held. Step two is to meet with any and all of the staff members participating in this research project. During step two all deadlines, expectations and objectives will be reviewed and the team will be prepped for success. Step three consists of

recruiting and informing participants of the project and receiving consent from the participants involved in the research project. Step four is the presentation of the educational material. The first class will start with an introduction of the staff and participants involved followed by a quick five question survey to be answered by each participant. After all the surveys are completed, information on the project will be presented to the participants. Step five is providing the educational class for two hours Monday, Wednesday, and Friday for one week. Step six consists of being available via text, email, or by appointment personal meetings for the participants' if they have any questions or needing a review of any of the educational material. Step seven is having the participants take the same survey again and evaluating if there was any change in their health, lifestyle or quality of life. Step eight will be analyzing the data collected through the surveys, sharing the information with the team and celebrating the completion of the project with the team.

Timetable/Flowchart

To ensure that this research project flows smoothly and all details are thought out, the planning will start before the start of the fall semester. All material, delivery mode of material, communication with staff members and team members, including all specific dates and deadlines will be established prior to the week of August 31,2020. Between August 31,2020–September 7,2020, all team members will gather together and be instructed on their part of project, instructions and deadlines will be re-enforced with the goal of prepping the team for success. The third step will be to recruit people for the research and also have them sign consent forms, provide the participants with a vague overview of the topic up for discussion, this will happen between September 14,2020-September 21,2020. The fourth step will have the participants take the pre class survey, attend free non-traditional educational two hour class on Monday,

Wednesday and Friday during the week of September 21,2020–September 28,2020. After the participants have gone through the class, they will have access to the instructor if any questions, concerns or if they need reinforcement of the material. During the week of November 9, 2020 the participants will take the same survey to see if any answers have changed. Next step is to analyze the findings from the pre and post class survey and that would take place the week of November 16,2020. Lastly on the week of November 30,2020 the results will be sent out to all those involved in the project and celebrate the completion of the project with the team.

Figure 1:Time table

Project Phases	Project Timeline
Plan content that will be presented Plan the mode of delivery of content – Content will be delivered via live class with handouts/ visuals/ class interaction Plan and correlate when the best time to hold educational class for the participants/ set all specific dates and deadlines	Prior to the week of August 31, 2020
Meet with all team members to answer all questions and provide team members with all the information. At this time all deadlines, expectations, objectives, etc. will be reviewed and the team will be prepped for success.	The first week of the semester – Fall 2021 August 31, 2020 – September 7, 2020
Recruit patients/participants, gain consent, inform participants of the research topic, receive baseline data/ survey, and provide participants with the education needed to participate in research	3 rd week of the semester – Fall 2021 September 14, 2020 – September 21, 2020
Provide educational class for participants a two-hour class offered Monday, Wednesday, Friday (participants would only have to attend once)	4 th week of the Semester – Fall 2021
Be available for participants if any questions arise	The entirety of the semester Fall 2021
Have participants complete a final survey evaluating their lifestyle changes, gained knowledge during the project	Week of November 9, 2020
Analyze Data from surveys, share research findings with team members	Week of November 16, 2020
Complete capstone Project and celebrate with team members	Week of November 30, 2020

Data Collection Methods

During the ten week period participants involved will take a five question survey prior to starting the educational program. The class will be held for two hours Monday, Wednesday and Friday of one week. The participants will then live their lives while simultaneously applying the material learned to their daily routines. After the ten week period is completed, the participants' will complete the survey again assessing for any change in their lives, health and quality of life. The scores from the pre and post tests would be examined to determine if the participants learned and applied the information on osteoporosis and fracture prevention to their lives.

Cost/Benefit Discussion

The cost of this project is low and the only monetary thing to pay for would be the black and white copies of the pre and posttest surveys for the participants. The average healthcare cost from the disease osteoporosis can be millions of dollars (Winzenberg., 2013). This project can be justified due to the fact that the project cost less than the economic burden osteoporosis causes (Martin et al., 2020).

Discussion of Results

Education is a way of empowering others to better themselves and providing a doorway to success. One way to know that the project was successful is to see the difference in answers on the survey that each participant filled out pre and post attending the educational class. Following up three, six and even one year out to monitor patients' health status and to see if they are still applying the changes to their lives would be another great way to see if the interactive educational program for osteoporosis patients was successful.

Conclusions/Recommendations

Since this was a benchmark project there were no actual results from this study but it would be something to implement in the future. Once implemented with one group of geriatric patients, the next step would be to replicate this project, analyze and re-evaluate the data collected on a different group of geriatric patients.. Performing this project on a different group of people would allow for a diverse set of data, adding to collected data on the subject. Also, when projects are replicated it can allow for a different point of view leading to new ideas on the subject.

Patient education is incorporated as a standard of care in all aspects of healthcare, however what if the patient education provided was more than just a printout sent home with them at discharge. After reading many articles on the subject, consensus shows that more integrated patient education increases patients' knowledge on the disease and empowers them to manage their disease in hopes of having better outcomes. As health care professionals our goal is to not only treat the disease but also we are to give the patient the tools they need to succeed when it comes to their health.

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Appendix A

Evidence Synthesis Table

Studies	Design	Sample	Intervention	Outcome
1 (Edmonds et al., 2016)	RCT	N = 7,782 (Total number randomized) N = 3,917 (Patients in intervention group) N = 3,865 (Patients in the group with usual care)	Patient receiving a LDXA, 10 YPF, BHB earlier after the scan than the “ normal” time	<ul style="list-style-type: none"> - Increased satisfaction of bone health - There is a growing need improved osteoporosis care and patient education for the community / patient population - A need for better education of disease management BEFORE a fracture occurs
2 (Anderson-Wurf et al., 2018)	Quality Improvement Project	N = 60 (Initial number of participants) N = 30 (number of participants completed the program)	2 phases of educational information provided to participants - Phase 1 focused on OP prevention and WBE -Phase 2 provided a questionnaire for FRAX -6 months of “Mind your Bones” program	<ul style="list-style-type: none"> - Increased knowledge / understanding on fracture prevention and how to manage osteoporosis through lifestyle changes
3 (Park et al., 2017)	RCT	N=271 Potential Participants	Individualized educational program focusing	

		N= 199 { 43 men , 156 women } Completed the educational program	on osteoporosis knowledge, self-efficacy and fall self-efficacy for the population at a community centers Topics were revisited 3 months later to evaluate knowledge from the program	Osteoporosis intervention education can improve the knowledge of osteoporosis, self-efficacy and fall self-efficacy in the participants
4 (Dizdar et al., 2018)	RCT	N = 68 postmenopausal females ages 50-75	12 week program 3 groups that participants were randomly placed in Group 1 – Balance-coordination exercise group Group 2- Strengthening exercise group Group 3- Aerobic exercise group	64% improvement rating was seen in the participants of the balance group at 12 weeks Participants in all 3 groups did not experience any falls – linked to exercise , balance , and strengthening education
5 (Kachhwaha et al., 2018)	RCT	N = 100 { 65 – 80 years of age }	Group 1 focused on pre and post test of the FES (fall efficacy	-Significant improvement seen in the participants -Participants had decreased fear of falling and improved self-efficacy

			scale) and focused on assessing the participant's gait Group 2 – focused on ROM exercises of the lower extremities building strength to prevent falls	- Strength training exercises made a large positive impact on the participants
6 (Kloseck et al., 2017)	RCT	N = 105 { n=53 mentorship program n = 52 control group	Group 1 placed in a mentorship program – provided with an educational class on osteoporosis and management of the disease Group 2 in control group – received usual care	Mentorship / peer led education promotes positive health behavioral changes in the elderly population Improvement in osteoporosis risk assessment, diagnosis and treatment
7 (Chen et al., 2018),	RCT	N = 110	Group 1 – Allocated to integrated care Group 2 Allocated to Lower limb exercises All received educational courses on osteoporosis,	Pre and Post education course exams were taken and there was a significant increase in scores Improved body composition was seen in both groups

			sarcopenia and preventing falls	
8 (Jensen et al., 2018)	Descriptive study	N = 14	Participants attended group educational glasses on osteoporosis / disease management, etc. Data was collected through observation and interviews with each participant individually	Group education positively impacted patients and their decision making abilities when it comes to their health specifically bone health
9 (Sciamanna et al., 2018)	RCT	N = 1130- ages 65 and older with a history of fragility fractures due to falls	Community physical activity program with 3 components focusing on strength, balance, and aerobic in hopes of decreasing the number of fragility fractures due to falls	Decreased secondary injuries in patients with previous fragility fractures after attending the physical activity program
10 (Elders et al., 2017)	RCT	N= 2665 Age 50-64 years of age N=2117 Age 65 or older	Women greater than age 65 filled out questionnaires to find their clinical risk	SALT Osteoporosis study was deemed an effective educational program and could benefit the population in a positive manner to prevent fractures

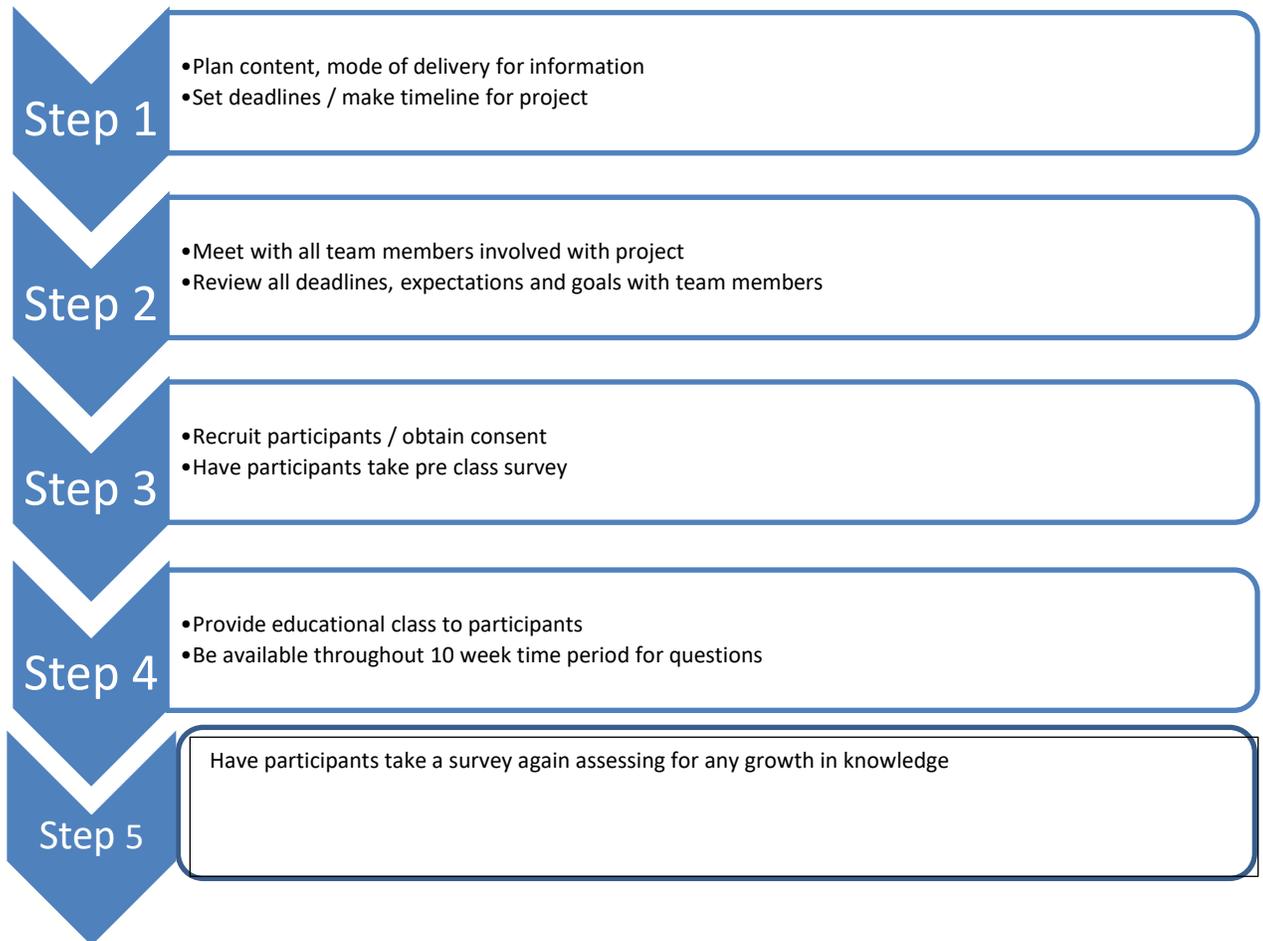
		N= 548	factors and then were assigned to either an intervention or control group Control group received usual care Intervention group was given a tailored treatment program based on their results from various of tests	
11 (Zou et al., 2017)	Case Study	N = 53 completed the first survey N = 30 completed the second survey Ages ranging between 48-87	Single group with pre-test and post-test Visual aids such as videos and brochures focusing on nutrition specific to their culture, supplements and physical activity	Significant increase in scores on the post – test Research shows this would be an effective educational option to better osteoporosis disease management
12(Raybould et al., 2018)	Systematic Review	N= 11024 studies reviewed N=16 studies used in the systematic review	Searched seven databases focusing on osteoporosis , educational needs, and	This study focused on describing the needs of the patient pertaining to osteoporosis in hopes of closing the gap between lack of information known and the patient’s well-being/health

			fragility fractures	
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Legend: 1 = (Edmonds et al., 2016) , 2 = (Anderson-Wurf et al., 2018) , 3 = (Park et al., 2017) , 4 = (Dizdar et al., 2018) , 5 = (Kachhwaha et al., 2018) , 6 = (Kloseck et al., 2017) , 7 = (Chen et al., 2018), 8 = (Jensen et al., 2018) , 9 = (Sciamanna et al., 2018) , 10 = (Elders et al., 2017), 11 = (Zou et al., 2017), 12 =(Raybould et al., 2018)

Appendix B

Flowchart



Appendix C

Participants 5 questions Survey / Test

1. What is Osteoporosis ?
2. What does this diagnosis mean to you?
3. What way do you try to prevent falls? Have you obtained a fracture post diagnosis ?
4. Do you see your doctor regularly to have a reasonable and healthy plan to manage Osteoporosis?
5. Are there any special considerations you apply to your life after being diagnosed with osteoporosis?