

Constructing the written evidence based proposal

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Running Head: EXERCISE AND THE RISK OF CARDIOVASCULAR DISEASE

Exercise and the Risk of Cardiovascular Disease Lovely Prince Grand Canyon

NRS-441V

22 July 2012

Abstract

Exercise has been defined as a crucial component in the well-being of an individual. It is known to be helpful in preventing or reducing the risks of many life threatening conditions such as stress and obesity. While exercise is beneficial, in some cases it can be detrimental particularly in cases where it is not properly applied. In this respect, the amount of exercise needed for the prevention of cardiovascular disease is still a controversy. In other words, there is no consensus among medical experts on the amount of exercise that needs to be done for an individual to avoid the risk of cardiovascular problems. If a nurse does not know the amount or level of exercise that may put the patient at risk, they may end up getting low quality healthcare services. A number of studies have shown that it is not necessary for an individual to meet the recommended time for exercise in order to achieve the best outcome. It is evident from the studies that the intensity of the exercise to be done is dependent on the age, gender, and the severity of the condition. For instance, one study found out that women who walked a distance of more than ten blocks reduced the risk of cardiovascular disease by a considerable margin.

The proposed change at the hospital involves the introduction of an exercise recommendation plan. The Change will be implemented in a period of 24 months. The process of incorporating the change into the organization's

culture, structure, and workflow will be based on the 8-step change model developed by Kotter. The change will be initiated by a group of nurses working as a team in the care of cardiovascular disease. The change will be overseen by a committee to include various stakeholders including nurses, physicians, and clinicians. Resources needed for the change implementation include staff, educational materials, assessment tools, and funds. The plan will be evaluated by surveying nurses in relation to their attitudes toward the change, comparing the patient's discharge survey before and after initiation of the change, and comparing the probability of cardiovascular risk among individuals who exercise and those who do not based on their gender and age. Tools to educate the project participants include questionnaires and PowerPoint slides. The evidence will be disseminated through websites, newsletters, reports, e-mail, workshops, briefings, and conferences.

Key words: exercise, cardiovascular disease.

Exercise and the Risk of Cardiovascular Disease

Problem Description

Exercise has been described as an important element in the well-being of an individual. In fact, exercise has been hailed by many an expert as potential deterrent and solution to many of life's problems. For example, people are encouraged to perform exercises to reduce stress and as a measure against obesity. Exercise, according to several experts also helps improve the body's general functionality and therefore helps in reducing the chances of an individual being attacked by various health conditions (Myers, 2003). Indeed many a study has confirmed that when exercise is properly prescribed and supervised, it is favorable. Some of the impacts of good exercise include

heightened endurance, muscle strength, improved metabolism and cardiovascular function, and reduced risk of suffering from coronary disease (Lee, Rexrode, Cook, Manson, and Buring, 2001).

While the benefits of exercise on personal health is beyond dispute, it is also worth noting that too much of it, like every substance, can be dangerous.

While much study has been dedicated to the benefits of exercise, very little has been conducted on its demerits. Presumably, exercise may end up being detrimental if it is poorly done or done the wrong way, if it is done at the wrong time or if it is done in excess. When done incorrectly, exercise can cause physical injury (Galan, Palacios, Ruiz, Diez, Arji, Almar & et al., 2006). Countless in number are the laymen, sports people and athletes that have suffered injury as a result of wrong posture or due to miscalculated steps in the course of exercise. When some exercises are done at the wrong time, such as during pregnancy, physical injury may occur. In the same manner, certain exercises are not recommended for patients with heart or coronary diseases.

The extent to which exercise is done presumably affects the outcome of a patient (Manson, Greenland, LaCroix, Stefanick, Mouton & Oberman, 2002). When exercise is conducted without due consideration to certain constraints, a patient may end up suffering injury. The major issue in this regard is how much exercise should be prescribed for the individual, particularly in case where the individual is suffering from coronary heart disease or where they are at a risk of developing the disease. There are some instances where exercise can lead to undesirable effects such as oxidative stress among patients suffering from or at risk of developing heart disease (Galan,

Palacios, Ruiz, Diez, Arji & Almar, 2006). In such a case, if the nurse or the caregiver does not know the amount of exercise to be prescribed to the individual, there are possible risks that the individual will receive low quality healthcare services.

Heart failure and eventually death are the possible risks for the patient. It is crucial for the nurse to know how to deal with the issue of coronary heart disease in regard to exercise. Thus, measures should be taken to ensure that the individual receives optimal exercise depending on the severity of the problem, age, and gender. Nurses should be taught about the amount of exercise a patient should perform. For instance, elderly patients should not perform vigorous exercise because it can lead to oxidative stress. It is worth noting that a clear tool lacks for educating cardiovascular patients and nurses about safety measures to adopt in an exercise program. Thus, it is important that this tool be developed.

Solution Description

Optimal exercise is important for the well-being of any individual. Most people are of the idea that exercise should be intense if best results must be achieved, which is not always the case. In the case of patients with cardiovascular disease, the severity of the condition, age, and gender will determine the amount of exercise to be done by the individual. For instance, some studies have found that women who perform brisk walking for a distance of ten blocks in a day can aid them in preventing cardiovascular disease. In elderly individuals, exercise can be done for relatively shorter periods in order to avoid the risk of getting injured. An effective tool to educate both nurses and cardiovascular patients should be developed based

on several factors. Based on the tool, it will be possible for nurses to prescribe the right exercise and to the right amount to cardiovascular disease patients.

The Implementation Plan

Obtaining Necessary Approval and Support

In order to effect change, permission will be sought from the hospital's management in writing. Considering that the change will involve only adults, informed consent will not be necessary. However, in the rare case that informed consent is necessary, the parent or guardian of the subject will be involved and asked to consider giving the necessary consent. Support from the organization's leadership and fellow staff will be secured by making presentations to them regarding the problem at hand. In addition, in order to attract support from staff members, lobbying will be applied as necessary.

Description of the Current Problem Requiring Change

People have used exercise in as a measure against coronary heart disease. Exercise has been known to be an important component in the well-being of any individual. Most studies have suggested that exercise is very crucial in the prevention of most life's problems and keeping the body in its optimal condition. Despite its eminent benefits, exercise can be detrimental if done wrongly. However, in cases of cardiovascular disease, controversies have risen on the amount of exercise required to prevent this risk and treat patients with this condition.

The current United States guidelines recommend that adults should seek at least moderate-level exercise for more than or equal to 150 minutes per week, that is, 30 minutes in a day for five days in a week. Though this is the

recommended time to achieve the best from exercise, several studies have suggested different times for performing exercise. Thus, the change proposed is that it must be ensured that the individual gets optimal exercise depended on the severity of the problem, age, and gender. For instance, a study found that brisk walking more than ten blocks away in a day reduced the risk of cardiovascular disease in women. It is also suggested that different forms of exercise should be adopted for various people.

Detailed Explanation of the Proposed Solution

Optimal exercise activity is crucial for the well-being of any individual. However, not at all times will the recommended time for exercise work for individuals. Most individuals are of the notion that exercise should be intense to obtain the best from the exercise. However, this is not true in all cases and thus the notion should be disregarded. In the case of patients with cardiovascular disease, the severity of the condition, age, and gender will determine the amount of exercise to be done by the individual. Thus, this statement defeats the notion that exercise should at least be done for 30 minutes in a day for five days in a week. In this sense, the individual should exercise based on the severity of their condition, age, and gender. What this means is that every patient suffering from coronary should not be subjected to over exercise. Performing strenuous exercises may result in greater damage than good as stated by different experts.

In a bid to establish the extent to which exercise can be useful to coronary heart disease patients, a survey will be conducted. The survey will seek to establish the kinds of exercises that the patients do regularly and how long they engage in the activities. Furthermore, the survey will seek to establish

how they feel after the exercises and the notable health benefits that they gain thereafter. The respondents will comprise patients suffering from coronary heart disease, individuals of either gender randomly drawn from the hospital's population. In addition to conducting a survey, interviews will be conducted with respondents being health experts directly dealing with the patients. The interviews will involve asking the respondents about the effects of exercise that patients undertake with due respect to the extent of the activity.

Rationale for Selecting Proposed Solution

Given that the respondents will be patients drawn from the hospital's population, very little resources will be needed for the project. Similarly, conducting a survey and interviews during the evaluation stages will be cost effective especially considering the few respondents that will be involved. The two methods are useful in establishing people's personal views and experiences. The two methods are also time efficient as little time is needed to directly answer question posted on the questionnaire or asked during the interviews.

Supporting Evidence

Myer (2003) suggests that if exercise is done in the proper way, physical activity and physical fitness can help in preventing the risk of cardiovascular diseases, and therefore, enhance the health of the people of the United States. A study done by Galan et al. (2006) indicates that moderate and regular exercise improves the cardiovascular function, and reduces cardiovascular disease in the elderly individuals. In another stud, it was found out that moderate levels of occupational physical activity and high

levels of leisure time physical activity minimizes the risk of stroke and cardiovascular disease (Li and Siergrist, 2012). A survey conducted by Ha, Lee, Paffenbarger, and Sesso (1999) showed that women who walk for long distances (that is more than ten blocks), the physical activity was associated with 33% reduced risk of cardiovascular disease. From these studies, it is evident that the amount of exercise differs based on the age and gender of the individual.

Implementation Logistics

The project will be conducted over a period of 12 months. The process of conducting the project and recommending a model will demand the expenditure of some resources. More specifically, some finance will be needed to produce educational materials, and cater for transport costs among other expenses. The first step in the process will involve creating awareness about the problem at hand amongst medical practitioners and patients. During the first week of the project, the necessary permissions to conduct the change will be sought during the first week of the project.

The survey will be conducted on the fourth week of the project after thorough literature review will have been done on the subject. The interviews will similarly be conducted on the fourth week of the project. A sample of 10 respondents randomly drawn from the hospital's population of coronary heart patients will be issued with questionnaires. The questionnaires will be translated in different languages and written in simple language so as to ensure that the potential respondents understand whatever they are asked. This is useful if accurate data has to be collected and analyzed. The data collected from the project will be analyzed statistically to established facts

that relate to the benefits and damages caused by exercise to ailing persons.

The data will be analyzed using SPSS software or MS Excel to establish a correlation between the extent of exercise and its positive and negative benefits. A report will be written highlighting the findings of the evaluation. The report will eventually be submitted to the organization's management team with recommendations on how to model exercise routines for patients with coronary heart disease.

Resources Required For Implementation

The resources needed for the implementation of the change include the following:

In order to successfully achieve the goals of the proposed change, three nurses will be involved directly in spearheading the change. The nurses will be instrumental in sensitizing other nurses, patients and medical staff in relation to the proposed change. Furthermore, they will be involved in the implementation stage in designing brochures and other educational materials, creating PowerPoint presentations, collecting and analyzing data. The nurses will also be involved in issuing questionnaires to respondents during the evaluation stage.

For the implementation process to be successful, a number of educational materials will be required to facilitate the process of educating the staff and other people. These materials include handouts, PowerPoint presentations, posters, and pamphlets. The success of the change implementation process is determined through proper use and selection of assessment tools. The assessment tools to be used in this case will be questionnaires, surveys, and

pre- and post tests. These tools will assess the knowledge of the participants at baseline and after the intervention. Funds will be needed to ensure that the process is completed satisfactorily. Funds are specifically required in educating the staff, producing and printing the educational materials, collecting and analyzing data (that is, before, during and after the implementation), the committee that will initiate, oversee, and assess the change.

The Evaluation Plan

The implementation plan aims at influencing positively the overall delivery of care, that is, to ensure that exercise is used in the best way possible to prevent the risk of cardiovascular disease. Optimal levels of exercise should be developed to fulfill the needs of the patient having cardiovascular disease based on the severity of the condition, gender, and age. The methods that will be used to develop the evaluation plan will be surveying of the staff attitudes towards the change, (that is, before and after initiation of the change) and comparing the patient's discharge survey before the change and after the initiation of the change. The survey will be done on the nurses before and after the initiation of the change as indicated; their perceptions and attitudes will be particularly studied. The perceptions and the attitudes of the patients will be also be surveyed. Apart from survey, questionnaires will be used to evaluate the plan.

Another method that will be used to evaluate the plan is to compare the probability of cardiovascular risk among individuals who exercise and those who do not based on their age and gender. Variables to be used include staff perceptions and attitudes, and patient perceptions and attitudes. The tools

that will be used to educate the project participants and assess the project outcomes include questionnaires, PowerPoint slides, surveys, teaching materials, posters, activity log, and handouts. Survey uses a collection of predetermined questions concerning particular topics (in this case, exercise and the risk of cardiovascular disease) that the target audience answers. Activity log utilizes staff report of daily activities (Zarinpoush, 2006). Survey as an evaluation tool will especially be used for its ease of use and capacity to evaluate people's attitudes toward the proposed project. The survey will particularly be used to evaluate nurses and patients attitudes toward the proposed project. The tool will also be used to evaluate the effectiveness of the project in bringing positive change in respect of the application of exercise among cardiovascular disease patients. Based on the results of the evaluation, necessary measures will be taken to ensure greater success. For example, if the project is noted to be less effective, another survey will be conducted to establish the weaknesses of the project or its implementation. Based on the results, the necessary changes will be instituted.

Dissemination Plan

Effective dissemination can be described as a way in which the recipients are engaged in a process such as one, which requires increased awareness, commitment, action, and understanding. The most common ways of disseminating evidence include websites, direct mail, and newsletters. In this case, the evidence will be disseminated using methods such as websites, newsletters, reports, e-mail, workshops, briefings, and conferences. A briefing can permit the implementation plan manager to summarize the

project's work and update the stakeholders of its progress. The website permits easy access to the information concerning the project and can be easily updated. However, it is important that the target audience be informed of the presence of the project on the website so that they can gain interest to visit the site. Once the site has been accessed by the stakeholders, it is important to ensure that they constantly visit the site for more information (Harmsworth and Turpin, 2000).

Conferences can disseminate the evidence very well but they can be time-consuming and costly if they are not planned well. Thus, it is important to plan early in advance for the conference. Unlike conferences, workshops usually target smaller groups of participants and they entail a higher or active level of engagement with the target audience (Harmsworth and Turpin, 2000). Briefly, dissemination of the evidence will be done using conferences, workshops, reports, emails, newsletters, briefings and websites. It is important to mention that the target audience (nurses and other stakeholders) will be actively engaged to ensure that they get up-to-date information about the implementation of the proposed solution.

Literature Review

Myers, J. (2003). Exercise and cardiovascular health. *Circulation*, 107, e2-e5. doi: 10. 1161/01. CIR. 0000048890. 59383. 8D

The article talks about the relationship between physical fitness, physical activity, and cardiovascular health. It is suggested that more fit or active individuals are at a lower risk of getting coronary heart disease than inactive individuals. More than 250, 000 individuals die every year in the United States due to lack of exercise. Exercise has numerous benefits such as

reducing weight and reducing bad cholesterol. However, one question remains unanswered, how much exercise should one do. In the United States, the recommended time for exercise is 30 minutes preferably in all days of the week.

Research elements were not used in this article. The article concludes that if done in the right way, physical activity, and physical fitness can assist in the reducing the risk of cardiovascular diseases, and thus, improve the health of the United States. The information in the article is very important since it will assist nurses offer the best care possible such as the recommended time for doing exercise.

Lauer, M. S. (2012). And what about exercise? Fitness and risk of death in “low risk” adults. *Journal of the American Heart Association*, 1, 1-3. doi: 10.1161/JAHA. 112. 003228

The article speaks of the controversy about the possible risks of being harmed by exercise. Many researchers have attempted to indicate that exercise can harm individuals. However, the author of the article is quick to note that these guidelines are founded on weak evidence. On the other hand, some researchers have shown that exercise below the recommended time had significant impact on the physical fitness of an individual.

Research elements were not used in this article. The article concludes that exercise is important in the reduction of cardiac-related events, and there is need to find better ways of improving public health. The information is important to the nurses in that it will assist them in making the right choice about the care to be given to a patient suffering from cardiac-related complications. The best decision will assist in rapid recovery of the patient.

Galan, A. I., Palacios, E., Ruiz, F., Diez, A., Arji, M., Almar, M., Moreno, C., Calvo, J. I., Munoz, M. E., Delgado, M. A., & Jimenez, R. (2006). Exercise, oxidative stress and risk of cardiovascular disease in the elderly: Protective role of antioxidant functional foods. *Bio Factors*, 27, 167-183.

The authors of the article state that exercise is a crucial component in the prevention of cardiovascular diseases. Exercise is an important element in the prevention of cardiovascular diseases; however, in elderly people, it can enhance oxidative stress. Oxidative stress and vigorous exercise can cause oxidative injury and antioxidant depletion. It is important that balance between beneficial and harmful effects of physical activity to be achieved, particularly, in elderly people.

The design of the study was a long-term intervention study, and was conducted as a controlled and randomized investigation based on the practice of nutritional antioxidant treatment and regular exercise. A group of 320 aged individuals was chosen (86 men and 234 women aged between 58 and 86 years old). The results of the research showed that moderate and regular exercise enhances cardiorespiratory function and decreases cardiovascular disease in elderly individuals. This information is important since it will help nurses in caring elderly individuals suffering from the condition and those not suffering from the condition.

Li, J., & Siergrist, J. (2012). Physical activity and risk of cardiovascular disease - A meta-analysis of perspective cohort studies. *International Journal of Environmental Research and Public Health*, 9, 391-407. doi: 10.3390/ijerph9020391

The article did a comprehensive analysis of the association between physical

activity and cardiovascular disease. From the analysis, it was evident that leisure time and occupational physical activity had positive impact on the individual's cardiovascular health. Research element used in the analysis was the application of meta-analytic random impact modeling to data collected from prospective group studies. The research results suggest that moderate levels of occupational physical activity and high levels of leisure time physical activity reduces the risk of stroke and coronary heart disease. The information is significant to the care of the patient by the nurse since it suggests that exercise reduces the risk of cardiovascular disease by a considerable degree (20-30 percent in women and 10-20 percent in men). Amin-Shokravi, F., & Rajabi, R., & Ziaee, N. (2011). Exercise effects on risk of cardiovascular disease among Iranian women. *Asian Journal of Sports Medicine*, 2(1), 37-43.

The authors suggest that lack of exercise or physical activity is common in women than in men. They further suggest that it varies by age and the ethnic groups. Physical activity is a crucial element in the prevention of cardiovascular diseases. The research element used was a randomized controlled trail study. Transformations in 10-year risk scores for coronary heart disease were measured using the Framingham risk equation. The research results indicated a significant decrease in diastolic and systolic blood pressure, decrease in lipid levels, and decrease in 10-year risk of cardiovascular disease in the training group. There were no changes in the control group. The information is important to the nurses since it will help in knowing which groups are at a risk of cardiovascular disease and take the relevant action.

Manson, J. E., Greenland, P., LaCroix, A. Z., Stefanick, M. L., Mouton, C. P., Oberman, A., Perri, M. G., Sheps, D. S., Pettinger, M. B., & Siscovick, D. S. (2002). Walking compared with vigorous exercise for the prevention of cardiovascular events in women. *The New England Journal of Medicine*, 347(10), 716-725.

The article talks of the controversy concerning the role of vigorous exercise and walking in the prevention of cardiovascular disease. This is because general physical activity has been linked with decreased risk of cardiovascular disease in epidemiologic surveys. However, among women, the role of walking has been minimally addressed. Another area largely ignored is the function of time spent in inactive behavior in predicting the risk of cardiovascular disease. The research element used in this study was observational study. The research concluded that vigorous exercise and walking were linked with the reduction in cardiovascular disease. The information is important to the nurses since it will help in knowing which groups are at a risk of cardiovascular disease and take the relevant action.

Swain, D. P. (2006). Moderate- or vigorous-intensity exercise: What should we prescribe? *ACSM's Health & Fitness Journal*, 10(5), 7-11.

Vigorous exercise is an important component in the minimization of cardiovascular disease risks. Despite its benefits, vigorous exercise can lead to musculoskeletal complications and overuse injuries. People who do physical activity have lower risks of developing cardiovascular diseases. For better prevention of cardiovascular diseases, suitable intensity ranges for aerobic training should be prescribed. Research elements were not used in this article. The article concludes by suggesting that the correct prescription

for exercise intensity with heart rate reserve should be given. This is because the method accounts for the variations in resting heart rate between clients or patients. The article is important for the nurses since it offers them a guideline on the exercise prescriptions given to the patient.

Ha, T., Lee, I., Paffenbarger, R. S., Sesso, H. D. (1999). Physical activity and cardiovascular disease risk in middle-aged and older women. *American Journal of Epidemiology*, 150(4), 408-416.

In this article, the relationship between cardiovascular disease and physical activity (or exercise) in women was investigated, particularly women in their middle and late ages. For many years, the relation being investigated has never been clear. This is due to the fact that inconsistent results have emerged from studies that involved women. Walking for long distances was found to be beneficial for women, particularly in the reduction of cardiovascular disease risks. The research method used was a group or cohort study of women. The research results showed no link of physical activity with cardiovascular activity in women who walked for small distances (less than 4 blocks in a day). However, for those who walked for long distances (more than 10 blocks), physical activity was linked with 33 percent reduced risk. Thus, the nurses will be able to advice women on the best exercise to reduce the risk of the disease.

Manson, J. E., Hu, F. B., Rich-Edwards, J. W., Colditz, G. A., Stampfer, M. J., Willett, W. C., Speizer, F. E., & Hennekens, C. H. (1999). A prospective study of walking as compared with vigorous exercise in the prevention of coronary heart disease in women. *The New England Journal of Medicine*, 341(9), 650-658.

The article talks about the controversy concerning which type of exercise (vigorous exercise or walking) is better in the prevention of cardiovascular disease. The authors note that the data for women in this aspect is very sparse. It is estimated that close to 60% of Americans do not exercise. Lack of exercise is attributed to high mortality rates caused by conditions such as cardiovascular complications and cancer. Vigorous exercise and walking are both linked with decrease in cardiovascular activities. Questionnaires and follow-up questionnaires were used to study the participants. The authors concluded that vigorous exercise and brisk walking are linked to similar and substantial reductions in risks of cardiovascular events among women. The information will be crucial for the nurses since it will assist them in initiating the best care for the patient.

Hambrecht, R., Wolf, A., Gielen, S., Linke, A., Hofer, J., Erbs, S., Schoene, N., & Schuler, G. (2000). Effect of exercise on coronary endothelial function in patients with coronary artery disease. *The New England Journal of Medicine*, 342, 454-460.

Researches done have yielded contradictory results in regard to the cardio protective impacts of exercise training in clients suffering from cardiovascular diseases. For many years, exercise training has been linked to enhancement in myocardial perfusion and in patients having progression of coronary atherosclerosis. The authors performed a prospective study of the impact of exercise training on endothelial role in patients with cardiovascular disease. The research results showed that exercise training resulted in significant increase in coronary blood-flow velocity. The exercise also resulted in significant increase in dilation that was flow-dependent. This

information is very crucial to the nurses since it will help them in caring for patients with myocardial perfusion and coronary atherosclerosis.

Tanasescu, M., Leitzmann, M. F., Rimm, E. B., Willett, W. C., Stampfer, M. J., & Hu, F. B. (2002). Exercise type and intensity in relation to coronary heart disease in men. *The Journal of the American Medical Association*, 288(16), 1994-2000.

A number of studies have revealed an inverse association between risk of coronary heart disease and physical activity. They have shown that inactive individuals are at a greater risk of developing cardiovascular disorders than individuals who exercise. However, one thing is not clear, the suitable level of exercise for the prevention of cardiovascular events. A group of 44, 452 United States men enrolled in Health Professionals' Follow-up Study were assessed for two years for the possibilities of cardiovascular factors, evaluate the levels of leisure-time exercise, and recognize newly diagnosed cases of the condition. The results of the research indicated that running, walking, weight training, and total physical activity were linked with decreased cardiovascular risk. The information is important for the nurse in determining the optimal level of exercise required for the patient to prevent cardiovascular diseases.

Lee, I., Paffenbarger, R. S., & Sesso, H. D. (2000). Physical activity and coronary heart disease risk in men: Does the duration of exercise episodes predict risk? *Circulation*, 102, 981-986. doi: 10. 1161/01. CIR. 102. 9. 981

Physical activity has been linked with reduced risk of cardiovascular complications. Despite the benefits of physical activity, it is not clear if the duration of exercise events is crucial. Statistics show that nearly 60% of the

Americans are physically inactive and close to 25% are not active at all. One question still remains unanswered; whether shorter sessions are as important as longer sessions of exercise in predicting risk of cardiovascular complications. The design of the study was based on a baseline survey done from 1988 to 1993. The results clearly showed that physical activity is linked with reduced cardiovascular risk. The results also supported recommendations that permit the combination of shorter episodes of physical activity. The information is important to the nurses since it allows them to apply new recommendations, which can be very beneficial to the patient.

Lee, I., Paffenbarger, R. S. & Sesso, H. D. (2000). Physical activity and coronary heart disease in men: The Harvard Alumni health study. *Circulation*, 102, 975-980. doi: 10. 1161/01. CIR. 102. 9. 975

The article attempts to explain the amount of time and effort required in an exercise to prevent the risk of cardiovascular disease. This is because it is not clear the intensity and amount of physical activity needed for primary prevention of cardiovascular disease. It is estimated that approximately 60% of the Americans do not exercise, in other words, they are physically inactive. The research design used was a follow-up survey of 12, 516 men (aged between 39 and 88 years) from the year 1977 to 1993. The authors found out that vigorous activities and total physical activity indicated the strongest decrease in cardiovascular risk. Light and moderate activities did not show any significant inverse association. The information is important to the nurses since it will help in knowing which groups are at a risk of cardiovascular disease and take the relevant action.

Kraus, W. E., Houmard, J. A., Duscha, B. D., Knetzger, K. J., Wharton, M. B., McCartney, J. S., Bales, C. W., Henes, S., Samsa, G. P., Otvos, J. D., Kulkarni, K. R., & Slentz, C. A. (2002). *The New England Journal of Medicine*, 347(19), 1483-1492.

Increased physical activity is associated with decreased risk of cardiovascular disease. This is because it results in the improvement of the lipoprotein profile. It is important to note that the quantity and intensity of physical activity training needed for optimal benefit is not known. The research element used was random assigning of the participants to take part in a six months control group or eight months in three different exercise groups. The results of the research indicated that high amount of high-intensity exercise led to greater improvements. The lower-amount exercise group had a better response than the control group. From this information, nurses can know the best way of reducing the risk of cardiovascular exercise.

Lee, I., Rexrode, K. M., Cook, N. R., Manson, J. E., & Buring, J. E. (2001). Physical activity and coronary heart disease in women: Is “no pain, no gain” passé? *The Journal of the American Medical Association*, 285(11), 1447-1454.

The objective of the research was to assess the association between physical activity (in particular, light-to-moderate walking) and cardiovascular disease among women (women who are at a risk of developing cardiovascular disease are also included). Women, who are physically active, tend to have lower rates of coronary heart disease than those who are inactive. However, something is not very clear, if the association varies in women at high risk of

developing the condition or by intensity of physical activity. The research design was based on a follow-up research done on 39, 372 female participants done between 1992 and 1995. The research results indicated that light-to-moderate activity was associated with lower rates of cardiovascular disease in women. The information is important for the nurse in determining the optimal level of exercise required for the patient to prevent cardiovascular diseases.

Theory of Goal Attainment

The theory to be incorporated in this case is the theory of goal attainment. The theory gives insight into the interaction between the nurse and the client and the outcomes or results of the care. It highlights the significance of the patient's participation in decision that affects care and focuses on the outcome of the care and the process of nurse-client interaction. Evaluation happens during the process of interaction. The patient brings knowledge about self and perception of the problems at hand and the nurse brings special skills and knowledge to this interaction. Communication is needed to ascertain the accuracy of perception, for transaction and interaction. In other words, the theory is applied based on the needs of the patients, and resolve the recognized problems of the patient (currentnursing. com, 2012).

In the process of caring for a patient, there is important information that the nurse and the patient are required to provide for optimal result. In the case of cardiovascular disease, exercise has been regarded as the best method for preventing the risk of the condition. However, the recommended time for exercise is not clear. Thus, the interaction between the patient and the nurse is crucial in determining this optimal level of exercise for the prevention of

the condition. As indicated in the theory, the nurse will offer his or her special skills and knowledge and the patient will offer his idea of the problems at hand and knowledge about self. The proposed solution, to make sure that the individual receives optimal exercise depending on the severity of the problem, age, and gender, will be accomplished based on the theory proposed.

Conclusion

Studies have indicated that the amount of exercise required to help in the prevention of cardiovascular risk is dependent on the age, gender, and the severity of the problem. Cardiovascular disease is among the leading causes of death in the United States. Majority of people (close to 60 percent) are estimated that they do not perform any exercise at all. Individuals who do not exercise, according to the research done, are at a risk of developing cardio related diseases. Although there is the recommended time for performing exercise as set by the government, it does not necessarily mean that individuals who do perform according to the recommended time will suffer from cardiovascular. Some studies have shown that even walking for a particular distance can reduce the risk. Thus, based on the studies, an optimal time for performing exercise can be developed based on the severity of the condition, gender, and age. The controversies concerning exercise and the risk of cardiovascular disease have made it difficult to develop a clear tool for educating both the nurses and the patients of cardiovascular disease. Since the patients are of different ages and gender, it is crucial that a clear educating tool be developed based age, gender, and severity of the disease.

References

Amin-Shokravi, F., & Rajabi, R., & Ziaee, N. (2011). Exercise effects on risk of cardiovascular disease among Iranian women. *Asian Journal of Sports Medicine*, 2(1), 37-43.

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Appendix 1:

Evaluation Plan:

Survey on Nurses in Evaluation of the Project

Part A.

1. Do you encourage the patients that you visit to exercise?

A. Yes B. No

2. How much exercise do you encourage your cardiovascular disease patients to engage in?

A. No exercise B. very little exercise C. Moderate exercise D. A lot of exercise
E. It depends

3. What factors impact your decisions when prescribing exercise to

cardiovascular disease patients before the implementation of the exercise project (You may tick more than one option)?

A. None B. Age C. Gender D. Patient condition E. Other factors

4. What factors impact your decisions when prescribing exercise to cardiovascular disease patients now (You may tick more than one option)?

A. None B. Age C. Gender D. Patient condition E. Other factors

5. Is there a notable change in the number of cardiovascular disease patients following the implementation of the exercise project?

A. Negative change B. None C. small positive change D. Moderate positive change

E. High positive change

6. Is there a notable difference in the severity of cardiovascular disease among patients following the implementation of the exercise project?

A. Negative change B. None C. small positive change D. Moderate positive change

E. High positive change

7. Is the current plan on exercise implemented in the hospital effective in your view?

A. Not effective B. Little effective C. Moderately effective D. Very effective

8. Would you recommend the implementation of the project in other healthcare settings?

A. Yes B. No.

Part B

1. How long have you worked as a nurse in the hospital?

A. Less than one month B. between one and six months C. Between 6 and 12

months D. Over one year

2. Do you attend to cardiovascular disease patients in your practice?

A. Yes B. No.

3. How frequently do you attend to them?

A. Almost daily B. At least one a week B. At least once every two weeks C. At least once a month D. Rarely or never