

University of Texas at Tyler

Scholar Works at UT Tyler

MSN Capstone Projects

School of Nursing

Fall 12-5-2021

Evidence-based Individualized Discharge Educational Intervention for Coronary Artery Disease (CAD) patients; A Benchmark Project

SUMITA THAPA

sthapa3@patriots.uttyler.edu

Follow this and additional works at: https://scholarworks.uttyler.edu/nursing_msn



Part of the [Other Nursing Commons](#)

Recommended Citation

THAPA, SUMITA, "Evidence-based Individualized Discharge Educational Intervention for Coronary Artery Disease (CAD) patients; A Benchmark Project" (2021). *MSN Capstone Projects*. Paper 168.

<http://hdl.handle.net/10950/3832>

This MSN Capstone Project is brought to you for free and open access by the School of Nursing at Scholar Works at UT Tyler. It has been accepted for inclusion in MSN Capstone Projects by an authorized administrator of Scholar Works at UT Tyler. For more information, please contact tgullings@uttyler.edu.

Evidence-based Individualized Discharge Educational Intervention

Sumita Thapa

The University of Texas at Tyler, School of Nursing

NURS 5382: Capstone

Dr. Kara Jones

December 03, 2021

Executive Summary

Coronary artery disease (CAD) is the leading cause of death worldwide, whereas in the United States, 16,800,000 people are affected, resulting in 450,000 deaths annually (Thomas et al., 2013). According to Cowper et al. (2019), the post-discharge costs for the acute coronary syndrome of 1 year averaged \$8037, while 48% of patients had readmission, “half within 2 months and 57% with a cardiovascular diagnosis” (Cowper et al., 2019). Patients’ perceptions of self-management in related to treatment adherence, lifestyle modifications, and risk-factor management are significant indicators of outcomes following a cardiac event. The hospital readmissions with CAD patients are preventable cost in any health care settings if the educational or behavioral interventions is designed and implemented to improve patient self-care (Toukhsati et al., 2019). The Centers for Medicare and Medicaid Services (CMS) includes six issues or procedures related to 30-day readmission rates, which includes acute myocardial infarction (MI), chronic obstructive pulmonary disease (COPD), heart failure, pneumonia, coronary artery bypass graft (CABG) surgery, and elective primary total hip arthroplasty and/or total knee arthroplasty (CMS, 2020). Three of these six conditions are cardiac related. Providing adequate care to the patients including the measures to reduce readmissions will help the hospitals from unnecessary fines. As the cardiac care unit for University of Texas Health East Texas (UTHET) Hospital is focused on reducing readmissions and promoting quality life of patients with CAD, standardizing nurse-led discharge education and reenforcing instructions with a follow-up post-discharge phone calls can help reduce readmissions, as well as help influence patients to engage in essential lifestyle changes. Structured nurse-led education including detailed instructions on lifestyle modifications, managing risk factors, and medication adherence can help promote compliance and mental quality of life in patients with CAD (Shim & Hwang, 2017). The cardiac unit at UTHET delivers quality care and provides discharge handouts

for all the patients at discharge. However, there is no standard discharge handouts or education session for CAD patients that focus on self-management post-discharge. Hence, this needs to be addressed by creating a nurse-led discharge educational intervention including detailed instructions on daily weight, diet, monitoring symptoms, and medication adherence followed by a trial of post-discharge phone calls by the nurse educator to reinforce the education provided at discharge. To advance the self-management in CAD patients, this benchmark project aims to evaluate the impact of individualized education interventions that emphasize adherence to self-management and implement the change by establishing a standardized one-on-one teaching session conducted by the primary nurse within hospitalization and by the discharge nurse educator at the time of discharge then follow-up with post-discharge phone calls. These interventions will help prevent future cardiac deterioration, as well as aid in readmission reduction that ultimately reduce costs for the hospital. The evidence-based findings in the studies are supported by the evidence from systematic reviews of RCTs, evidence from systemic reviews of qualitative studies, and the evidence obtained from well-designed RCTs. The databases searched included the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PubMed. Search was limited using the evidence-based practice key, systematic review, and meta-analysis.

Rationale

CVD is a leading cause of mortality and morbidity globally; patients who have had an acute MI and with cardiac stents are at a higher risk for having a future MI or other adverse cardiac events. The patient's knowledge and understanding of effective implementation of current treatment guidelines are very essential for primary and secondary prevention of CAD (Barnason et., al 2017). Interventions such as lifestyle modification education are vital in

preventing future cardiac risks (Mentrup, et al., 2020). One approach to enhance patient and family knowledge about the treatment plan and adoption of self-management behaviors and lifestyles to improve psychosocial and physical health outcomes and prevent avoidable complication is therapeutic patient education (Barnason et al., 2017). In addition to this, strategies to help reduce hospital readmissions for cardiovascular disease are detailed discharge instructions on medications and diet, post-discharge plans during transitions of care within hospitalization, follow-up appointments, and post-discharge phone calls within one week to ensure patient is adhering to the prescribed discharge regimen (Frishman & Alpert, 2013). These interventions will help prevent future cardiac deterioration, promote quality of life, as well as aid in readmission reduction that ultimately reduce costs for the hospital.

Literature Synthesis

Several RCTs and systematic review of evidence-based findings showed improved medication adherence, effectively reduced cardiovascular risk, improved lifestyle changes, and quality of life with the standardized one-on-one discharge education intervention in an inpatient setting (Perry et al., 2016; Ghisi et al., 2014; Lee et al., 2021; Rahmati-Najarkolaei et al., 2015; Commodore-Mensah et al., 2012). The systematic reviews of quasi-experimental studies concluded reduction in 30-day readmission rate in patients with CAD (Bates et al., 2014; Lee et al., 2021; Saffi et al., 2014). A significant increase in lifestyle changes and improved quality of life were found in the RCTs reviews (Broers et al., 2020; Saffi et al., 2014; Guo & Harris, 2016; Palacios et al., 2017). Some qualitative studies supported patients' perception and changes in illness belief and self-management, thereby increasing engagement in self-care and lifestyle changes with the personalized patient education protocol (Mentrup et al., 2020; Lau-Walker et al., 2016).

Stakeholders

The stakeholder to consider for this project are the unit manager, nurses of the unit, unit nurse educator, nursing director, and administration. While the project aimed to establish a discharge nurse educator and to design a primary nurse to deliver one-time comprehensive education about self-care post-discharge, the support and role of the above stakeholders were extremely important for this change project to succeed. Since this is a benchmark project, it was anticipated that presenting the short-term and long-term goals to the executive team including the rationale for the evidence-based nurse-led educational intervention would aid in gaining administrative support and proceed to the implementation.

Implementation/Timetable

The most important step of implementing the change will be sharing the vision of prospective change and its outcome. Sharing the vision is an essential step for excellence in practice, as well as for promoting EBP (Melnik et al., 2019). In this change project, the first step proposes brainstorming with colleagues, managers, and clinicians regarding the change process and the goal of the project. In addition to this, after completing some important steps of change interventions including appraising, evaluating, and synthesizing the evidence, the steps to consider are formulating practice recommendations, gaining stakeholder support, assessing, and eliminating barriers, developing clinical tools, gaining approval for the change, and disseminating evidence and educate staff, and finally, the next step will be implementing the practice change then measuring the outcomes, which are discussed in following steps.

Formulating Practice Recommendation – 1 week

The systematic review of patient education delivered by inpatient individualized education interventions and nurse-led communication has shown the effectiveness of improving healthcare self-management outcomes, decreased CVD risk, and reduced the rate of re-admissions. These findings will be shared with the stakeholders as well as the implementation team.

Assessing and eliminating barriers – 1 week

With the change implementation, the lack of knowledge and skills regarding the evidence-based recommendations, inadequate understanding of EBP principles, and the unawareness of EBP improving patient outcomes are the barriers to EBP implementation (Melnik et al., 2019). As adding another employee as a discharge educator would be costly, the executive team may be hesitant to bring this protocol. The written summary of evidence-based findings, the effectiveness, and the description of possible outcomes are to be incorporated to eliminate the barriers.

Developing clinical tools – 1 week

The unit nurse educator will be involved in developing the educational materials and posters about the self-management strategies post-discharge on CAD patients. Each patient will be provided with handouts at the end of an individualized teaching session on how they can manage at home to improve their quality of life.

Gaining approval for change and disseminating evidence and educate staff – 1 week

After the completion of the above steps, it may take 2-4 weeks to gain a change approval from stakeholders. The implementing team will be notified of the evidence-based findings, shared the plan and gathered the input, set the time frames, and be assigned the responsibility. In

this step, determining if the team needs more training or knowledge about change and repeat the above actions will be considered before proceeding to implementation.

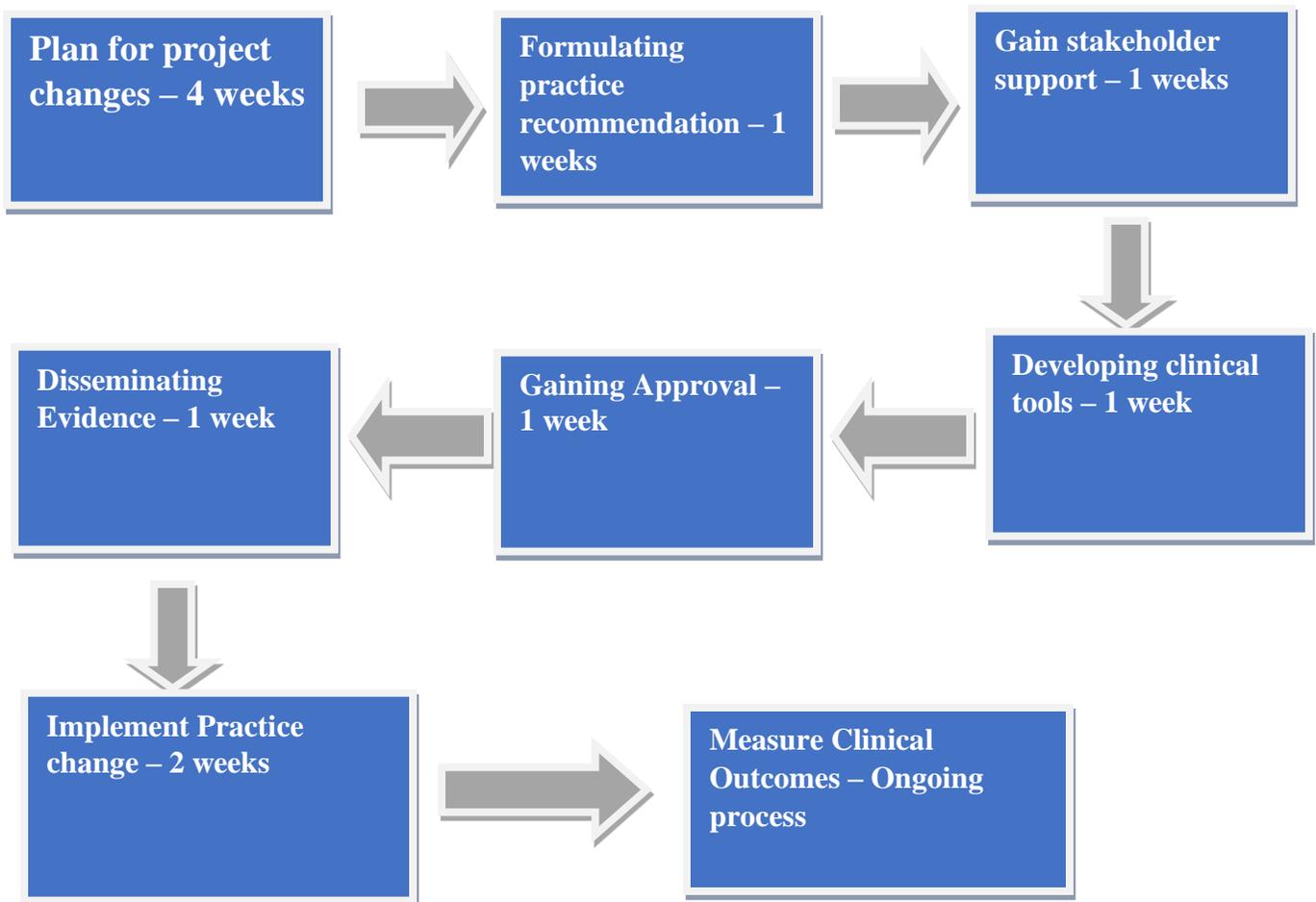
Implementing the practice change - 1 week

This project requires all the nurses and administration within the organization to support the education bundle intervention and encourage participation. This step will identify the responsible person for implementation, such as the nurse educator actively working on developing educational materials based on patients' admitting diagnosis. The discharge nurse educator will provide standardized patient education at discharge, one patient at a time that is comprehensive, and followed by one phone call in a week of discharge to ensure if the patient has been following the education measures. The primary nurse will reiterate the instructions depending on patient understanding of educational intervention.

Measurement of outcomes

This step evaluates the outcomes of evidence-based decision-making through the hospital re-admission data and feedback on the practice of the implementation team including nurses, nurse managers, nurse educators, and patient outcomes. This will be an ongoing process.

Flowchart



Data Collection Methods

Following the completion of change implementation, evaluation of the evidence-based interventions would take place by the process of monitoring and analyzing the outcomes at frequent intervals to decide whether the improvement is needed, or the outcome is being effective. This benchmark project presents the evaluation plan of evidence-based change through integrating the hospital re-admission data of the patients with coronary heart disease and feedback on the practice of the implementation team including nurses, nurse managers, nurse educators, and patient outcomes. This will also include a patient survey. The outcomes in the evaluation step will be measured by the qualitative and quantitative techniques. The focus of this evidence-based intervention is nurse-led discharge education for patients with coronary artery disease. The qualitative approach entails the assessment of the experiences and perceptions of the participating nurses and patients through interviews, surveys, or group discussions (McCombes, 2021). The quantitative technique will be applied in gathering data of CAD discharges and analyzing the number of readmitted patients within 6 weeks period. This project anticipates the results including better patient outcomes, preventing 42-day readmissions as well as reduced costs for the hospital.

Cost/Benefit Discussion

According to Cowper et al. (2019), based on the interventions performed at 233 US hospitals, the hospital costs averaged \$18931 for the acute coronary syndrome, with 45% PCI related and 20% associated with postprocedural hospital stay. Additionally, the post-discharge costs of 1 year averaged \$8037, while 48% of patients were readmitted, “half within 2 months and 57% with a cardiovascular diagnosis” (Cowper et al., 2019). For this change project implementation, the anticipated cost would be about \$1000 that will be used to train the nurses about the intervention, which may take an hour of training session. Since the nurse educator is

already assigned in the unit, role and responsibilities can be adjusted without additional costs.

With this intervention, the potential loss of revenue related to readmissions of CAD patients will be reduced effectively.

Overall Discussions/Results

With this nurse-led educational intervention initiation, it is expected that the results will be based on the statistics of comparing the patient admission data of prior and post interventions. Although this change project was not implemented due to Covid-19 pandemic, the individualized patient education would aid in patient understanding of discharge instructions about self-care and post-discharge management, thereby reducing future cardiovascular risks and prevent re-hospitalization. In addition, patient may not retain all the information that is given during a discharge teaching. Therefore, the post-discharge calls would help catch the knowledge deficit and reenforce the education to ensure patient is following the self-management measures that helps prevent future cardiac events and improve quality of life in general.

Recommendations

There are multiple patient education delivery methods to meet needs of patients. However, evidence from research interventions has been synthesized with the recommendations of individualized nurse-led discharge educational intervention for patients with CAD to improve their outcomes, promote quality of life, as well as reduce re-admission rate of hospital. The self-management awareness can be enhanced and 30-day readmissions rates among CAD patients can be reduced through the use of the personalized educational initiation utilizing existing staff and resources. These interventions can potentially influence readmissions and enhance patient's outcome for more than just the CAD patients. However, if the intervention results succeed and

remain sustained, the interventions can be modified to apply in other patient populations, such as congestive heart failure, stroke, post-cardiac surgery, and many other health issues.

References

- Al, G. A. H., Perry, L., Gholizadeh, L., & Alotaibi, A. M. (2016). Cardiovascular medication adherence among patients with cardiac disease: a systematic review. *Journal of Advanced Nursing (John Wiley & Sons, Inc.)*, 72(12), 3001–3014. <https://doi-org.ezproxy.uttyler.edu/10.1111/jan.13062>
- Barnason, S., White-Williams, C., Rossi, L. P., Centeno, M., Crabbe, D. L., Lee, K. S., McCabe, N., Nauser, J., Schulz, P., Stamp, K., & Wood, K. (2017). Evidence for therapeutic patient education interventions to promote cardiovascular patient self-management: A scientific statement for healthcare professionals from the American Heart Association. *Circulation: Cardiovascular Quality and Outcomes*, 10(6). <https://doi.org/10.1161/hcq.0000000000000025>
- Bates, O. L., O'Connor, N., Dunn, D., & Hasenau, S. M. (2014). Applying STAAR Interventions in Incremental Bundles: Improving Post-CABG Surgical Patient Care. *Worldviews on Evidence-Based Nursing*, 11(2), 89–97. <https://doi-org.ezproxy.uttyler.edu/10.1111/wvn.12028>
- Broers, E. R., Kop, W. J., Denollet, J., Widdershoven, J., Wetzels, M., Ayoola, I., Piera-Jimenez, J., & Habibovic, M. (2020). A personalized eHealth intervention for lifestyle changes in patients with cardiovascular disease: Randomized controlled trial. *Journal of Medical Internet Research*, 22(5). <https://doi.org/10.2196/14570>
- Commodore-Mensah, Y., & Dennison Himmelfarb, C. R. (2012). Patient education strategies for hospitalized cardiovascular patients: a systematic review. *Journal of Cardiovascular Nursing*, 27(2), 154–174. <https://doi-org.ezproxy.uttyler.edu/10.1097/jcn.0b013e318239f60f>
- Cowper, P. A., Knight, J. D., Davidson-Ray, L., Peterson, E. D., Wang, T. Y., & Mark, D. B. (2019). *Acute and 1-Year Hospitalization Costs for Acute Myocardial Infarction Treated With*

Percutaneous Coronary Intervention: Results From the TRANSLATE-ACS Registry. Journal of the American Heart Association.

Centers for Medicare and Medicaid Services. (2020). Hospital Readmissions Reduction Program (HRRP). Retrieved from <https://www.cms.gov/Medicare/Medicare-Fee-for-ServicePayment/AcuteInpatientPPS/Readmissions-Reduction-Program>

Frishman, W. H., & Alpert, J. S. (2013). Reducing hospital readmissions for cardiovascular disease: Is it feasible? *The American Journal of Medicine*, *126*(9), 753–754.
<https://doi.org/10.1016/j.amjmed.2013.02.027>

Ghisi, G. L., Abdallah, F., Grace, S. L., Thomas, S., & Oh, P. (2014). A systematic review of patient education in cardiac patients: Do they increase knowledge and promote health behavior change? *Patient Education and Counseling*, *95*(2), 160–174. <https://doi.org/10.1016/j.pec.2014.01.012>

Guo, P., & Harris, R. (2016). The effectiveness and experience of self-management following acute coronary syndrome: A review of the literature. *International Journal of Nursing Studies*, *61*, 29–51. <https://doi.org/10.1016/j.ijnurstu.2016.05.008>

Lau-Walker, M., Landy, A., & Murrells, T. (2016). Personalised discharge care planning for postmyocardial infarction patients through the use of the personalised patient education protocol - implementing theory into practice. *Journal of Clinical Nursing*, *25*(9-10), 1292–1300.
<https://doi.org/10.1111/jocn.13177>

Melnyk, B. M., Fineout-Overholt, E., Rodgers, C. C., Brown, T. L., & Hockenberry, M. J. (2019). Implementing Evidence in Clinical Settings. In *Evidence-Based Practice in Nursing and Healthcare* (pp. 270–273). Wolters Kluwerin.

- Mentrup, S., Harris, E., Gomersall, T., Köpke, S., & Astin, F. (2020). Patients' Experiences of Cardiovascular Health Education and Risk Communication: A Qualitative Synthesis. *Qualitative Health Research, 30*(1), 88–104. <https://doi-org.ezproxy.uttyler.edu/10.1177/1049732319887949>
- Oh, E. G., Lee, H. J., Yang, Y. L., & Kim, Y. M. (2021). Effectiveness of Discharge Education With the Teach-Back Method on 30-Day Readmission: A Systematic Review. *Journal of Patient Safety, 17*(4), 305–310. <https://doi-org.ezproxy.uttyler.edu/10.1097/PTS.0000000000000596>
- Palacios, J., Lee, G. A., Duaso, M., Clifton, A., Norman, I. J., Richards, D., & Barley, E. A. (2017). Internet-Delivered Self-management Support for Improving Coronary Heart Disease and Self-management--Related Outcomes. *Journal of Cardiovascular Nursing, 32*(4), E9–E23. <https://doi-org.ezproxy.uttyler.edu/10.1097/JCN.0000000000000392>
- Rahmati-Najarkolaei, F., Ghaffarpasand, E., Gholami Fesharaki, M., & Jonaidi-Jafari, N. (2015). Nutrition and Physical Activity Educational Intervention on CHD Risk Factors: A Systematic Review Study. *Archives of Iranian Medicine (AIM), 18*(1), 51–57.
- Saffi, M. A., Polanczyk, C. A., & Rabelo-Silva, E. R. (2013). Lifestyle interventions reduce cardiovascular risk in patients with coronary artery disease: A randomized clinical trial. *European Journal of Cardiovascular Nursing, 13*(5), 436–443. <https://doi.org/10.1177/1474515113505396>
- Thomas, S., Gokhale, R., Boden, W. E., & Devereaux, P. J. (2013). A Meta-analysis of Randomized Controlled Trials Comparing Percutaneous Coronary Intervention With Medical Therapy in Stable Angina Pectoris. *Canadian Journal of Cardiology, 29*(4). <https://doi.org/10.1016/j.cjca.2012.07.010>

Toukhsati, S. R., Jaarsma, T., Driscoll, A., & Hare, D. L. (2019). *Self-care interventions that reduce hospital readmissions in patients with heart failure; towards the identification of Change Agents*. SAGE Journals. Retrieved October 10, 2021, from <https://journals.sagepub.com/doi/full/10.1177/1179546819856855>.