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Impact of Transitional Care Model on Readmissions of Adults with Chronic Heart Failure

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Walden University
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Abstract

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Project Submitted in Fulfillment

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Abstract

Chronic heart failure (CHF) is often associated with high morbidity, mortality, and increased health expenditures. The readmission rate of patients with CHF is approximately 30% within 30 to 60 days following discharge. This project examined the literature to identify best practices based on the use of the transitional care model (TCM) in the reduction of hospital readmissions among older patients with CHF. The review included articles that were published between 2015 and 2019, used a quantitative study methodology, were peer-reviewed, and written in English. Keywords used in the search were chronic heart failure, the transitional care model, and hospital readmissions. Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines were used to identify selected studies for review. After evaluation, 10 empirical articles were retained. Findings revealed that the use of the TCM framework resulted in the reduction of hospital readmission among patients with CHF, thereby improving patients' quality of life. The implications of these findings for social change include encouraging healthcare institutions to develop policies aimed at increasing the use of the TCM framework. Such policies could support improved patient outcomes for elderly patients with CHF.

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Section 1: Nature of the Project

Introduction

This DNP project sought to explore the significance of using the transitional care model (TCM) in the reduction of hospital readmissions among elderly patients with chronic heart failure (CHF). Specifically, it sought to examine the impact of TCM on 30-day readmissions of older adults with CHF through the implementation and completion of a systematic review of the literature (Gheorghiade, Vaduganathan, Fonarow, & Bonow, 2013). Utilization of TCM could result in the improvement of the quality of life of patients by reducing the rates of readmissions.

Problem Statement

The local nursing practice problem — the focus of the doctoral project — was CHF, which is often associated with high morbidity, mortality, and increased health care expenditures. According to Gheorghiade et al. (2013), about 1 million hospital readmissions account for approximately $37 billion spent annually for this health condition. There is a need to address the CHF problem due to the associated implications that have significant effects on the healthcare sector. For instance, it has been challenging to reduce readmission rates of CHF, which, as a result lead to increased hospital bills (Bixby & Naylor, 2010).

According to Gheorghiade et al. (2013), the readmission rate of patients with CHF is approximately 30% within 30 to 60 days following discharge. Between 2009 and 2012, the 30-day readmission rate for patients with CHF was 23.0%. The high readmission rates

validate the adoption of the TCM framework that could reduce hospital readmissions for patients with CHF. The doctoral project holds significance for the field of nursing practice because it emphasizes the use of the TCM for reducing readmission rates a focus on quality improvement (Ziaeian & Fonarow, 2016).

Purpose

The healthcare system has succeeded in reducing mortality rates among patients with CHF (Bueno et al., 2010). However, there is a gap in practice regarding the interventions that are effective in mitigating readmission rates among patients, which this doctoral project sought to address. Lack of extensive research regarding the issue continues to pose significant challenges due to the ever-increasing readmission rates (Bueno et al., 2010).

The guiding, practice-focused question for this doctoral project was: How do TCM factors (self-management education, medication management assistance, and lifestyle practices) impact the 30-day readmission rates of older adults with CHF? This doctoral project could address the stated gap in practice because it is based on the use of TCM, a model that has been proven to reduce rates of readmissions among patients with CHF (Ziaeian & Fonarow, 2016).

Nature of the Project

Evidence for the systematic review was retrieved through a comprehensive search of information from the following databases: EBSCOhost, CINAHL, Google Scholar, Sage Journals Online, Emerald Full Text, ProQuest Central, and Research Gate. The

databases were selected because they contain peer-reviewed nursing-related studies based on the TCM. The project used a systematic review to organize and analyze the evidence (Walden University, 2017). The systematic review provided a comprehensive and unbiased summary of the research by incorporating the evaluation of various peer-review research articles that contain information regarding the issue of TCM. The data contained in the articles was examined in order to depict the manner in which TCM helps reduce the readmission of patients (Bixby & Naylor, 2010).

Significance

Among the stakeholders in the project were nurses, government, and non-state agencies. The project was expected to contribute to the nursing project by enhancing the quality of life of elderly patients with CHF (Bixby & Naylor, 2010; Gheorghiade et al., 2013). Additionally, the systematic review should play a critical role in the identification of the appropriate transitional care intervention to prevent 30-day readmissions of elderly patients with CHF.

Summary

CHF is associated with morbidity, mortality, and increased healthcare expenditures due to high rates of hospital readmissions. Approximately 1 million hospital readmissions account for about $37 billion spent annually for this health condition. This study examined the impact of TCM on 30-day readmissions of older adults with CHF through the implementation and completion of a systematic review of the literature.

While Section 1 introduced the doctoral project, Section 2 focused on the background and context of the project.

Section 2: Background and Context

Introduction

The practice problem -- the focus of the doctoral project -- was frequent hospital readmission for individuals with CHF, which is linked to increased healthcare expenditure, mortality, and morbidity (Gheorghiade, Vaduganathan, Fonarow, & Bonow, 2013). The purpose of this project was to explore the significance of using the TCM in the reduction of hospital readmissions among elderly patients with CHF (Bixby & Naylor, 2010; Feltner et al., 2014; Gheorghiade et al., 2013; Verhaegh et al., 2014; Ziaeian & Fonarow, 2016). The practice-focused question that guided the DNP project was as follows: How do TCM factors (self-management education, medication management assistance, and lifestyle practices) impact the 30-day readmission rates of older adults with CHF? The impact of TCM on 30-day readmissions of older adults with CHF were examined by the completion of a systematic review of the literature. Among the areas discussed in this section include the concepts, models, and theories, the relevance to nursing practice, and the role of the DNP student.

Concepts, Models, and Theories

The TCM framework was selected for use in the project because it results in the prevention of health complications and re-hospitalizations among the chronically ill, elderly hospital patients. The model has been implemented across various healthcare settings and has been proven to be effective because it provides patients with comprehensive discharge planning and home follow-up, coordinated by a transitional

care nurse (Feltner et al., 2014; Gheorghiade et al., 2013; Leppin et al., 2014; Verhaegh et al., 2014). The TCM framework is being used in this project because it has been shown to be effective in the reduction of hospital readmissions for elderly patients with CHF.

The TCM framework which targets high-risk, chronically ill elders was developed at the University of Pennsylvania (Hirschman, Shaid, McCauley, Pauly, & Naylor, 2015). The model improves the quality of life, care, and physical function among patients and family caregivers while ensuring that costs savings are achieved (Gheorghiade et al., 2013). Among the terms used in the doctoral project include *hospitalization, readmission, interventions*, and the *transitional care model* (TCM). Hospitalization means admission to the hospital for treatment, while readmission is an episode in which a discharged patient is readmitted. Intervention refers to strategies .that can be used for the management of a particular condition. The TCM framework has been used in this context as a model that is effective in reducing the rates of readmissions among elderly patients with CHF (Feltner et al., 2014).

Relevance to Nursing Practice

This doctoral project focused on frequent hospital readmission for individuals with CHF as the practice problem. CHF is often associated with high mortality, morbidity, and increased health care expenditures (Bixby & Naylor, 2010; Verhaegh et al., 2014). Currently, there are about 1 million hospital readmissions that account for approximately $37 billion spent annually for CHF (Bixby & Naylor, 2010). Nursing practice should address the problem of CHF due to the associated implications that have

significant effects on the healthcare sector (Bixby & Naylor, 2010). In addition to using TCM, high readmission rates can be decreased through the introduction of positive interventions that can lead to social change within healthcare institutions (Ziaeian & Fonarow, 2016).

One strategy previously used to address the issue included the Teaching and Education for patients with heart failure (TEACH-HF). The intervention focuses on diet modification, self-monitoring skills, medications, and warning signs of action (Howie-Esquivel et al., 2015). The intervention has already been implemented across various healthcare settings and is effective in improving the health outcomes of patients with CHF (Dinh, Bonner, Clark, Ramsbotham, & Hines, 2016; Howie-Esquivel et al., 2015; Peter et al., 2015). The current approaches used for reducing hospital readmission rates among patients with CHF include patient education, medication reconciliation, providing telephone follow-up, and arranging timely outpatient appointments (Kripalani, Theobald, Anctil, & Vasilevaskis, 2014). These interventions reduce readmissions through improved communication, advanced care planning, medication safety, and better training to manage common medical conditions that often lead to readmission (Kripalani et al., 2014).

Though the healthcare system has been successful in mitigating mortality rates among patients with CHF, there is still a gap in practice regarding the interventions that are effective in reducing readmission rates among the patients, which the project seeks to address (Ziaeian & Fonarow, 2016). While there are other approaches of addressing the

issue of hospital readmissions among CHF patients, the focus of the project will be on TCM because it results in the prevention of health complications and hospital readmissions among the chronically ill, elderly patients (Gheorghiade et al., 2013). The doctoral project has the potential of addressing the stated gaps in practice because it is based on the review of evidence regarding the use of the TCM framework in reducing the rates of readmissions among elderly patients with CHF (Bueno et al., 2010).

The focus of the systematic review will be to examine the main TCM factors including self-management education, medication management assistance, and lifestyle practices that have different effects on CHF. According to Ziaeian and Fonarow (2016), self-management education ensures that elderly patients with CHF can take proper care of their health when they transition from an acute hospital setting to the community, consequently reducing the rates of readmission. Medication management assistance provided by healthcare givers also reduces the rates of hospitalizations and improves the well-being of elderly patients. Additionally, lifestyle practices such as engaging in regular physical activity, and eating a balanced diet prevent the development of CHF and help in the management of the health condition among elderly patients, thereby reducing the rates of readmission (Feltner et al., 2016).

Local Background and Context

The practice-focused question seeks to establish how TCM factors, including self-management education, medication management assistance, and lifestyle practices impact the 30-day readmission rates of older adults with CHF (Feltner et al., 2014; Gheorghiade

et al., 2013; Leppin et al., 2014; Verhaegh et al., 2014; Ziaeian & Fonarow, 2016). Based on the practice problem, it is essential to address the issue through a systematic review to better understand the associated implications that have significant effects on the healthcare sector, including increasing hospital bills (Bixby & Naylor, 2010). Institutional Review Board approval (No. 02-21-19-0429964) was acquired before the project was conducted.

Some of the locally used terms in the doctoral project include hospitalization, readmission of patients with CHF, the prevalence of rehospitalization interventions, and the TCM. Hospitalization means admission to the hospital for treatment, while hospital readmission is an episode in which a patient who had been discharged from a hospital is admitted again (Bixby & Naylor, 2010). The prevalence of rehospitalization entails the number of cases of readmission due to a particular health condition. The TCM framework has been used in this context as a model that is effective in reducing the rates of readmissions among elderly patients with CHF. The term *intervention* means the strategies that can be used for the management of a particular condition (Bixby & Naylor, 2010). The federal context applicable to the problem involves change or introduction of policies that would influence the implementation of the TCM framework in various healthcare facilities.

Role of the DNP Student

My role in the doctoral project entailed reviewing literature in order to obtain evidence regarding the relationship between the TCM framework and patient outcomes

based on the rate of hospital readmissions within 30 days after discharge (Bixby, & Naylor, 2010). I will then recommend best practices based on the evidence. In order to complete the process, I obtained information from databases such as EBSCOhost, CINAHL, Google Scholar, Sage Journals Online, Emerald Full Text, ProQuest Central, and Research Gate. The databases contain peer-reviewed nursing-related studies on the TCM. The perspectives that could affect the choices about my motivation include the use of other strategies previously utilized such as the TEACH-HF intervention for reduction of rehospitalizations among elderly patients with CHF. As a DNP student and participant of the project, I do not possess any potential biases towards the doctoral project.

Summary

CHF is associated with increased healthcare expenditures, morbidity, and mortality, due to high rates of hospital readmissions. The doctoral project seeks to determine the significance of using the TCM framework in the reduction of hospital readmissions among elderly patients with CHF by obtaining relevant information from peer-reviewed articles that depict the manner in which the model assists in reducing readmission of patients. The proposed DNP project is guided by the following practice-focused question: How do TCM factors (self-management education, medication management assistance, and lifestyle practices) impact the 30-day readmission rates of older adults with CHF? The impact of TCM on 30-day readmissions of older adults with CHF will be examined through the completion of a systematic review of the literature. The project seeks to address the existing gap in practice regarding the interventions that

are effective in reducing readmission rates among elderly patients with CHF. The doctoral project can effectively address the stated gap in practice because it is based on the review of evidence regarding the use of TCM.

Section 3 will focus on the collection and analysis of data from a systematic review of the literature based on the stated gap in practice.

Section 3: Collection and Analysis of Evidence

Introduction

The local nursing practice problem -- the focus of the project -- was CHF, which is often linked with high morbidity, mortality, and increased healthcare expenditures. Approximately 1 million hospital readmissions that account for about $37 billion in annual expenditures are attributed to CHF (Gheorghiade, Vaduganathan, Fonarow, & Bonow, 2013). The main aim of this doctoral project was to explore the significance of using the TCM in reducing hospital readmissions among elderly patients with CHF. The major parts of Section 3 include the practice-focused question, sources of evidence, and the analysis and synthesis of evidence.

Practice-focused Question(s)

The local problem -- the focus of the project -- was CHF. The gap in practice entailed identifying the interventions that could reduce the rates of hospital readmissions among elderly patients with CHF. The practice-focused question that guided the proposed DNP project was as follows: How do TCM factors (self-management education, medication management assistance, and lifestyle practices) impact the 30-day readmission rates of older adults with CHF? The purpose of the doctoral project was to examine the impact of TCM on 30-day readmissions of elderly adults with CHF by completing a systematic review of the literature. The selected strategy aligns with the practice-focused question because it explored the impact of the TCM factors on the 30-

day readmission rates for elderly patients with CHF (Bueno et al., 2010; Gheorghiade et al., 2013).

Among the operational terms used in the doctoral project include the *transitional care model* (TCM), *readmission of patients*, and the *prevalence of rehospitalization*. Based on the project's context, the TCM framework is a model that has been proven to be effective in reducing the rates of readmissions among elderly patients with CHF (Bixby & Naylor, 2010). Readmission entails an episode in which a patient who had been discharged is readmitted. The prevalence of rehospitalization involves the number of cases of readmission due to a particular health condition (Bixby & Naylor, 2010).

Sources of Evidence

The sources of evidence included an extensive review of published empirical articles in peer-reviewed journals on the effectiveness of the TCM framework in preventing health complications and rehospitalizations among elderly patients with CHF. Evidence collected from the databases were directly related to the purpose of the project, which was to examine the impact of TCM on 30-day readmissions of older adults with CHF through the completion of a systematic review of the literature. The retrieval of data related to the purpose of the doctoral project provided the most effective method for addressing the practice-focused problem.

The databases used to find studies related to the practice problem included EBSCOhost, CINAHL, Google Scholar, Sage Journals Online, Emerald Full Text, ProQuest Central, and Research Gate. The combinations of key search words that were

used included *elderly patients with CHF, readmission of patients with CHF, the prevalence of rehospitalization of convalescents with CHF conditions, interventions for reducing readmission of patients with CHF,* and *the efficacy of TCM in reducing the readmission of senior adults with CHF*.

Primary sources will be used as evidence in the systematic literature review. The peer-reviewed primary sources must have been published between 2015 and 2019. Primary sources of data often contain comprehensive information that is first-hand. Therefore, use of the primary sources for this systematic review will ensure that the information retrieved is comprehensive and can adequately address the project question. Data will be collected through the utilization of peer-reviewed journal articles in the form of empirical results that are presented by the authors. The data collected must be related the purpose and the focus of the project on exploring the significance of using the TCM in reducing hospital readmissions among elderly patients with CHF within 30 days after discharge (Walden University, 2017).

Primary studies will be prioritized when collecting information that will help in answering the project question. The validity of the data from the sources will be dependent on the level of the sources of evidence used. Therefore, careful appraisal and selection of articles with the best evidence will be essential. The articles will be obtained through a systematic literature review using the PRISMA guideline (Moher et al., 2015). The checklist can also facilitate the analysis of the validity and applicability of the articles

retrieved. In order to obtain evidence from the databases, inclusion, and exclusion evaluative criteria will be used to appraise the quality and suitability of selected articles.

For an article to be included in the systematic review and used as evidence, it had to be published in English as a quantitative study with quantitative data; peer-reviewed; and published between 2014 and 2019. Additionally, the systematic literature review focused exclusively on randomized control trials and cohort and case-control studies because they contain the highest level of evidence.

Analysis and Synthesis

An evidence table will be included in the systematic literature review in order to show the rationale and strength of the evidence generated from each study (see Appendix A). Similarly, the 27-item checklist and the flow diagram of the PRISMA model will be used ensure considerable transparency in the process of selecting articles and complete reporting of the systematic literature review findings (see Appendix B and C; Liberati, Altman, Tetzlaff, Mulrow, & Gotzsche, 2009). To ensure the integrity of the evidence, the proposed project will adhere to ethical principles including beneficence, respect for persons, and justice (Slowther, Boynton, & Shaw, 2006). Informed consent was not required because the proposed study is a systematic review; no human participants were involved. It was also important to determine if the selected peer-reviewed journal articles contain any publication bias, conflict of interest, or non-adherence to ethical standards during the systematic literature review (Slowther et al., 2006).

Summary

The local nursing practice problem that will be the focus of the project is CHF that is often linked with high morbidity, mortality, and increased healthcare expenditures. The gap in practice entails the interventions that can effectively reduce the hospital readmission rates among elderly patients with CHF. The practice-focused question that guided the proposed DNP project was: How do TCM factors (self-management education, medication management assistance, and lifestyle practices) impact the 30-day readmission rates of older adults with CHF? Among the sources of evidence that will be relied on in order to address the practice problem include databases that were earlier mentioned. The 27-item checklist of the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) was used for analyzing the evidence as well as reporting the results of the systematic review.

Section 4: Findings and Recommendations

The local problem -- the focus of the project -- was CHF, which is associated with increased mortality, morbidity, and high rates of readmissions. This DNP project sought to establish the significance of using the TCM in reducing hospital readmissions among older patients with CHF. The use of TCM could enhance the quality of patients' lives by reducing hospital readmission rates. There is a gap in practice regarding the interventions that are effective in reducing the rates of readmission among patients with CHF, which this doctoral project addressed. The lack of quantitative research regarding the issue continues to pose significant challenges due to the increasing readmission rates (Bueno et al., 2010).

The practice-focused question that guided the proposed DNP project was as follows: How do TCM factors (self-management education, medication management assistance, and lifestyle practices) impact the 30-day readmission rates of older adults with CHF? The purpose of the project was to establish the impact of TCM on 30-day readmissions of older adults with CHF through the completion of a systematic review of the literature using the PRISMA guideline (Gheorghiade, Vaduganathan, Fonarow, & Bonow, 2013). The sources of evidence used in the project included 10 empirical articles published in peer-reviewed journals related to the purpose of the DNP project proposal and the effectiveness of the TCM framework in preventing health complications and rehospitalizations among elderly patients with CHF. The articles were retrieved from the

following online databases: EBSCOhost, Google Scholar, PubMed, and ProQuest Central.

Both the inclusion and exclusion evaluative criteria were applied to establish the suitability of the selected articles. The inclusion criteria comprised of all empirical articles: (a) retrieved from peer-reviewed journals; (b) published in the English language only; (c) describe quantitative methodologies; and (d) published within the past 5 years. Therefore, the articles had to have been published between the year 2015 and 2019. After evaluation, 10 articles were left for the review because they met both the inclusion and exclusion criteria. The selected terms and phrases were used because they are closely linked to the study's practice-focused question.

Findings and Implications

Evidence was collected from four databases, including EBSCOhost, Google Scholar, PubMed, and ProQuest Central. Google Scholar and EBSCOhost search results revealed 10,800 and 623 articles respectively. ProQuest Central generated 191 studies, while the records identified through PubMed were 167. A total of 11,781 articles were generated from the search. Among them, 81 English-language, peer-reviewed, articles were from academic journals. Therefore, the articles were considered to be suitable for consideration. However, after further evaluation, only 10 articles were retained from the list generated because they met both the inclusion and exclusion criteria. The articles were (a) published within the past 5 years (between 2015 and 2019); (b) peer-reviewed; full-text; described quantitative methodologies; and (c) were written in the English

language. The number of articles excluded was 11,700. The articles were excluded because they were non-quantitative; published more than 5 years ago, not published in English, and not peer-reviewed. The number of full-text articles that were excluded from the search was 71. The articles were excluded because the studies were (a) not published in English; and (b) not peer-reviewed (see Appendix B).

The study by Feltner et al. (2014) showed that transitional interventions such as structured telephone support, home-visiting programs and multidisciplinary HF clinic interventions reduced HF-specific readmission and all-cause readmission. Additionally, the authors established that while home-visiting programs reduced HF-specific readmission and the composite endpoint (moderate strength of evidence) (Feltner et al., 2014). It was also established that home-visiting programs, MDS-HF clinics, and STS interventions produced a mortality benefit (Feltner et al., 2014).

In a similar study conducted by Leppin et al. (2014), it was found that transitional interventions tested interventions were effective at mitigating the rates of hospital readmissions. However, more effective interventions were found to be complex and support patient capacity for self-care. The authors concluded that interventions tested more recently were less effective (Leppin et al., 2014). The purpose of the study was to synthesize evidence regarding the efficacy of interventions that reduce early hospital readmissions and identify intervention features and their impact on treatment burden and on patients' capacity to enact post-discharge self-care (Leppin et al., 2014).

Vedel and Khanassov (2015) also established that TCIs significantly reduced risks of readmission and ED visits. The purpose of the study was to determine the impact of TCIs on acute health service use by patients with HF, and to identify the most effective TCIs as well as their optimal duration. It was established that TCIs reduce rates of readmissions and ED visits by 8% and 29%, respectively (relative risk = 0.92; 95% CI, 0.87 – 0.98; P = .006 and relative risk = 0.71; 95% CI, 0.51 – 0.98; P = .04) (Vedel & Khanassov, 2015).

The purpose of the study conducted by Mora, Dorrejo, Carreon, and Butt (2017) was to determine if nurse practitioner led TCM interventions decreases hospital readmission rates in older adults compared to standard care. Various databases were searched with the main focus of RTCs containing NP led TCM interventions with older adults. Findings revealed that TCM interventions including home visits, follow-up phone calls post discharge, and handoff of information to the patient's care provider decreased the rates of hospital readmission (Mora et al., 2017).

Van Spall et al. (2017) also conducted a similar study aimed at comparing the effectiveness of transitional care services in decreasing all cause death and readmissions after hospitalization for HF. The authors established that nurse home visits, nurse case management (NCM), and disease management clinics (DMC) reduced all cause death and mortality after hospitalization for HF. Additionally the services reduced the healthcare system costs to varying degrees (Van Spall et al., 2017). The findings showed that nurse home visits significantly reduced all-cause mortality compared to usual care (ranking P

score 0.6794; relative risk (RR) 0.78, 95% confidence intervals (CI) 0.62 – 0.98). Disease management clinics (DMCs) were the second most effective services (ranking P score 0.6368; RR 0.80, 95% CI 0.67 – 0.97). Nurse home visits were also the most effective in decreasing all-cause readmission rates (ranking P score 0.8365; incident rate ratio (IRR) 0.65, 95% CI 0.49 – 0.86). NCM were considered to be the second most effective in reducing all-cause readmission rates (ranking P score 0.6168; IRR 0.77, 95% CI 0.63 – 0.95), and DMC (ranking P score 0.5691; IRR 80, 95% CI 0.66 – 0.97). Toles, Colon-Emeric, Asafu-Adjei, Moreton, and Hanson (2016) established that compared to usual care, TCIs enhanced clinical outcomes such as readmission rates, mortality, and the functional status.

Based on the synthesis and analysis collected from the studies by Feltner et al. (2014); Leppin et al. (2014); Vedel & Khanassov (2015); Mora et al. (2017); Van Spall et al. (2017); and Toles et al. (2016), it was concluded that the TCM interventions play a critical role in improving the quality of life of patients with CHF. The researchers concluded that enhancement in the quality of life was mainly influenced by the reduction in the rates of mortality, hospital re-admissions, and ED visits.

The TEACH intervention is also likely to reduce the rates of hospitalizations among elderly patients with HF. The systematic review conducted by Dinh et al. (2016) was aimed at determining the evidenced on using the teach-back method in health education programs among patients with chronic conditions. Five studies established that there was a reduction in readmission rates among the patients. However, one study

revealed that there was no significant improvement in the quality of life of patients after using the intervention ($p = 0.59$; Dinh et al., 2016). The authors indicated that more research regarding the effect on the quality of life among patients applying the interventions needs to be conducted.

Howie-Esquivel et al. (2015) also found that the TEACH intervention resulted in significantly lower hospital readmissions and savings in bed days. The purpose of the study was to determine the effect of a disease management intervention on the rates of rehospitalization among patients hospitalized due to HF. The authors found that patients in the intervention group were 1.5 times less likely to be hospitalized (95% CI; 1.2 – 1.9; $P = 0.001$) compared to the usual care group. Additionally, there was a savings of 641 bed days with potential revenue of $640,000 occurred after TEACH-HF (Howie-Esquivel et al., 2015). Based on the findings, both Dinh et al. (2016) and Howie-Esquivel et al. (2015) agreed that the teach-back method was effective in reducing the rates of hospital readmissions among patients with HF. The authors believed that the deterioration in the quality of life among patients with HF is the main unanticipated outcomes after use of the teach-back method (Dinh et al., 2016; Howie-Esquivel et al., 2015).

Utilization of TCM will improve partnership among healthcare stakeholders that include nurses, government, and non-state agencies (Cacchione, 2016). Therefore, the use of the TCM approach promotes communal diversity, a concept that supports Walden's mission that underscores the importance of collaboration in order to promote positive social change. Reduction of high rates of readmission through use of TCM has the

potential of influencing social change within healthcare institutions (Cacchione, 2016). Additionally, the findings support social change because it will influence various healthcare institutions to develop policies aimed at increasing the utilization of the TCM framework within their practice. Therefore, various healthcare providers will be motivated to adopt the TCM framework in their practice because it has been proven to result in improved healthcare outcomes among patients with CHF (Cacchione, 2016).

Recommendations

The gap in practice entails a lack of interventions that are effective in reducing readmission rates among elderly patients with CHF. The recommended solution that will potentially address the gap in practice involves the use of TCM. TCM has been proven to be effective in reducing the rates of readmissions among elderly patients with CHF. The TCM framework was developed at the University of Pennsylvania (Hirschman, Shaid, McCauley, Pauly, & Naylor, 2015). The model improves the quality of life, care, and physical function among high-risk chronically ill elderly patients and family caregivers while ensuring achievement of minimum health expenditure (Gheorghiade et al., 2013).

The main TCM factors that include lifestyle practices, self-management education, and medication management assistance have different effects on CHF. Lifestyle practices such as engaging in regular physical activity and eating balanced diet prevent the development of CHF and help in the management of the health condition among elderly patients, thereby reducing the hospital readmission rates (Feltner et al., 2016). On the contrary, self-management education ensures that elderly patients with

CHF can take proper care of their health when they transition from an acute hospital setting to the community, thereby reducing the rates of readmission (Ziaeian & Fonarow, 2016).

Medication management assistance offered by healthcare providers also reduces the rates of hospital readmissions, while enhancing the well-being of elderly patients (Feltner et al., 2014; Ziaeian & Fonarow, 2016). The TEACH-HF intervention that includes teaching and education for patients with heart failure is also likely to address the gap in practice. The intervention focuses on self-monitoring skills, diet modification, medications, and warning signs of action (Howie-Esquivel et al., 2015).

Strengths and Limitations of the Project

The main strength of the doctoral project is that it facilitates the establishment of a suitable intervention for dealing with CHF. CHF is associated with high mortality, morbidity, and increased healthcare expenditures (Bixby & Naylor, 2010; Verhaegh et al., 2014). Approximately one million-hospital readmission account for about $37 billion spent annually for CHF. Therefore, the project plays a critical role in addressing the problem of CHF due to the associated implications that have significant effects on the health of individuals and the overall healthcare system. Additionally, findings from the project will enhance the knowledge of nurses regarding appropriate strategies to apply in order adequately prevent health complications and rehospitalizations among the chronically ill, elderly patients (Ziaeian & Fonarow, 2016). The main limitation of the DNP project is that evidence was only collected from randomized control trials (RCTs),

and cohort and case-control studies. Future projects addressing the same practice problem should consider using various sources with different levels of evidence in order to obtain adequate information regarding the application of TCM in reducing CHF related readmission rates.

Section 5: Dissemination Plan

DNP Project findings will be disseminated through use of fliers, brochures, posters, and research briefs (Brownson, Eyler, Harris, Moore, & Tabak, 2018). Creation of flyers, brochures, posters, or research briefs based on the findings provide a concise and visually-appealing way to disseminate information to broad audiences. Through the strategies require extensive simplification of data due to limited space, information created involves visuals such as tables and graphs that are particularly adaptable for this format (Brownson et al., 2018).

The findings could also be disseminated through policy briefs that may be utilized to advocate for policy and legislative change at local, state, and national levels (Brownson et al., 2018). Through the policy briefs, legislators and advocacy groups may establish current research trends and obtain vital information that would enable them to make various decisions. The DNP project information may also be disseminated through media coverage, by use of television and radio outlets, and the newspapers (Brownson et al., 2018).

The target audience of the fliers, brochures, posters, and research briefs mainly included patients with CHF. Information presented in these formats assisted the patients in managing their health condition effectively, and thereby improving their well-being (Brownson et al., 2018). On the other hand, the target audience for the policy briefs included legislators, because they are often involved in policymaking. Information presented in the policy briefs enabled them to make appropriate policy changes based on

CHF management at the local, state, and national level. Use of the media coverage strategy focused on the general population because nearly all individuals have access to media outlets (Brownson et al., 2018).

Analysis of Self

As a scholar, my role in the doctoral project entailed reviewing the literature in order to obtain evidence regarding the relationship between the TCM framework and patient outcomes based on the rate of hospital readmissions within 30 days after discharge (Bixby & Naylor, 2010). Based on the evidence gathered, I was in a position to recommend the best practices for reduction of the rates of hospital readmissions among the patients. I obtained information from the following databases: EBSCOhost, CINAHL, Google Scholar, Sage Journals Online, Emerald Full Text, ProQuest Central, and Research Gate, and limited my project to peer-reviewed nursing-related studies on the TCM. Based on my findings, I recommend the use of the TCM framework for addressing the gap in practice. Evidence revealed that the TCM framework is effective in reducing the rates of readmissions among elderly patients with CHF (Bixby & Naylor, 2010; Gheorghiade et al., 2013; Verhaegh et al., 2014; Ziaeian & Fonorow, 2016).

The DNP project was aimed at determining the significance of using the TCM framework in the reduction of hospital readmissions among older patients with CHF. The project was mainly based on evaluating the impact of TCM on 30-day readmissions of older adults with CHF through the implementation and completion of a systematic review of the literature (Gheorghiade et al., 2013). The practice problem was CHF, which is

often associated with high mortality, morbidity, and increased health care expenditures (Bixby, & Naylor, 2010); Verhaegh et al., 2014). Evidence collected from various studies showed that the TCM framework significantly reduced the rates of hospital readmissions among elderly patients with CHF, thereby improving their quality of life, while ensuring the achievement of minimum health expenditure (Bixby & Naylor, 2010; Gheorghiade et al., 2013; Verhaegh et al., 2014; Ziaeian & Fonorow, 2016). Therefore, the project was completed with the assumption that the TCM framework is highly effective and should be recommended for use among elderly patient with CHF.

The challenges encountered while conducting this project included difficulties in finding appropriate studies based on the topic. The systematic review was basically limited to RCTs and cohort and case-control studies. Although RCTs, and cohort and case-control studies were only included in the project because they contain the highest level of evidence, this limited the number of articles used. The solution to the problem would entail including other sources of evidence such as cross-sectional studies and critically appraised individual articles.

The scholarly journey significantly improved my knowledge regarding CHF. In particular, I enhanced my knowledge about the use of the TCM framework and the transitional care interventions that are appropriate for treatment and management of CHF among elderly patients. By conducting this DNP Project, I learned that the TCM interventions including structured telephone support (STS), home-visiting programs and multidisciplinary HF (MDS-HF) clinic interventions were more effective in reducing HF-

specific readmission and all-cause readmission compared to standard care (Feltner et al., 2014).

Summary

The local nursing practice problem that was the focus of the project is CHF. The health condition is often associated with high morbidity, mortality, and increased health care expenditures. The purpose of the doctoral project was to explore the significance of using the TCM framework in the reducing hospital readmissions among older patients with CHF. The proposal was particularly aimed at determining the impact of TCM on 30-day readmissions of older adults with CHF through the implementation and completion of a systematic review of the literature.

The TCM framework was used because it has been proven to improve the quality of life, care, and physical function among high-risk chronically ill elderly patients, while ensuring achievement of minimum health expenditure. Finding revealed that the use of the TCM framework resulted in significant reduction of hospital readmission among patients with CHF, thereby improving their quality of life. Therefore, the TCM framework should be widely adopted across various healthcare settings because it provides the patients a comprehensive discharge planning and home follow-up, that ultimately results in reduced rehospitalizations.

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Appendix A: Table of Evidence

Appendix A: Table of Evidence						
Author/ Year	Level of Evidence /Study Design/ Participants/Inclusion Criteria	Intervention and Control Groups	Outcome Measure	Results	Limitations	Implications
Braet, A., Weltens, C., & Sermeus, W. (2016).	Systematic review	**Intervention** Transitional care interventions that prevent problems after hospital discharge.	The primary outcome measure included hospital readmission within three months after discharge. Secondary outcomes were mortality, patient satisfaction, and return to emergency departments.	The relative risk for hospital readmission was 0.77 [95% CI, 0.70–0.84] ($p<0.00001$). The relative risk for return to the emergency department was 0.75 [95% CI, 0.55–1.01] ($p=0.06$) The relative risk for mortality was 0.70 [95% CI, 0.48–1.01] ($p=0.06$).	Lack of control groups prevented the comparison of results from patients who did not participate in the study.	Findings suggest that interventions to reduce hospital readmissions should begin during hospital stay and continue in the community.

				There was an improvement in patient satisfaction in favor of the intervention group among five studies evaluating patient satisfaction.		
Dinh, T. T. H., Bonner, A., Clark, R., Ramsbotham, J., & Hines, S. (2016).	Systematic review with randomized and non-randomized controlled trials, cohort studies, before-after studies and case-control studies.	**Intervention** All interventions that included the teach-back method in an education program for people with chronic diseases. **Control** Chronic disease education programs that did not involve the teach-back method.	Self-management, adherence, disease-specific knowledge, readmission, self-efficacy, knowledge retention, and quality of life.	Positive effects on various healthcare outcomes. However, the effects were not always statistically significant.	There was significant heterogeneity in selected studies; meta-analysis was impossible and the results were presented in the form of narrative.	Evidence from the systematic review supports the use of the teach-back method in educating people with chronic disease to improve their understanding of chronic diseases and promote adherence, knowledge, self-efficacy and self-care skills.
Feltner, C., Jones, C. D.,	A systematic review and meta-	**Intervention** TCIs including home visiting	Rates of hospital re-admissio	Over 3 to 6 months, home-visiting	Few trials reported 30-day readmission	The study's findings offer guidance to

Cené, C. W., Zheng, Z. J., Sueta, C. A., Coker-Schwimmer, E. J., ... & Jonas, D. E. (2014).	analysis	programs, educational programs, and nurse-led HF clinic interventions **Control** Usual care, including follow-up with outpatient provider or standard discharge instructions	ns.	programs and multidisciplinary HF (MDS-HF) clinic interventions reduced all-cause readmission (high SOE). Structured telephone support (STS) interventions reduced HF-specific readmission (high SOE) but not all-cause readmissions (moderate SOE). Home-visiting programs reduced HF-specific readmission and the composite end point (moderate SOE). Home-visiting programs,	rates. Usual care was heterogeneous and not adequately described.	quality improvement efforts aimed at mitigating readmission and mortality rates for individuals with HF.

				MDS-HF clinics, and STS interventions produced a mortality benefit.		
Howie-Esquivel, J., Carroll, M., Brinker, E., Kao, H., Pantilat, S., Rago, K., & De Marco, T. (2015).	Prospective cohort design	**Intervention** Patients treated with the TEACH-HF intervention that included Teaching and Education, prompt follow-up appointments, from January 2010 to January 2012 **Control** Patients treated from January 2007 to January 2008.	Primary outcome measure included rates of hospital admissions, quality of life, self-management, and improvement in knowledge.	Group baseline characteristics were similar with 30-day readmission rates significantly different (19% usual care vs. 12% for the intervention respectively (P = 0.003)) Patients in the usual care group were 1.5 times more likely to be hospitalized compared to the intervention group (95% CI: 1.2 - 1.9; P = 0.001).	Lack of a concurrent control group prevented direct comparison to patients who did not participate in the TEACH-HF intervention in the same time period. Findings from the study can only be applied within the context of the study's setting and application of the main elements of the intervention may not provide similar outcomes elsewhere.	The key components within the TEACH-HF intervention may provide a framework for investigators to apply to future HF interventions. The study may help launch further research to provide a potential solution to the challenge in hospital readmissions.

					Possible admissions to other hospitals could not be accounted for during the study observation period. Inability to conduct a complete cost analysis that includes the outpatient setting due to lack of data.	
Le Berre, M., Maimon, G., Sourial, N., Guériton, M., & Vedel, I. (2017).	Systematic review	**Intervention** TCIs including education on self-management, discharge planning, structured follow up and coordination among the different healthcare professionals. **Control** Usual care	Mortality rates, rates of hospital re-admissions, and rates of ED visits	Findings revealed a lower mortality at 3 (RD: −0.02 [−0.05, 0.00]; NNT: 50), 6, 12 and 18 months post discharge Reduced rate of ED visits at 3 months (RD: −0.08 [−0.15, −0.01]; NNT: 13), Reduced	Significant heterogeneity in the selection of studies.	Findings offer guidance towards quality improvement efforts that can lead to reduction in mortality rates, hospital re-admissions, and mitigation in rates of ED visits.

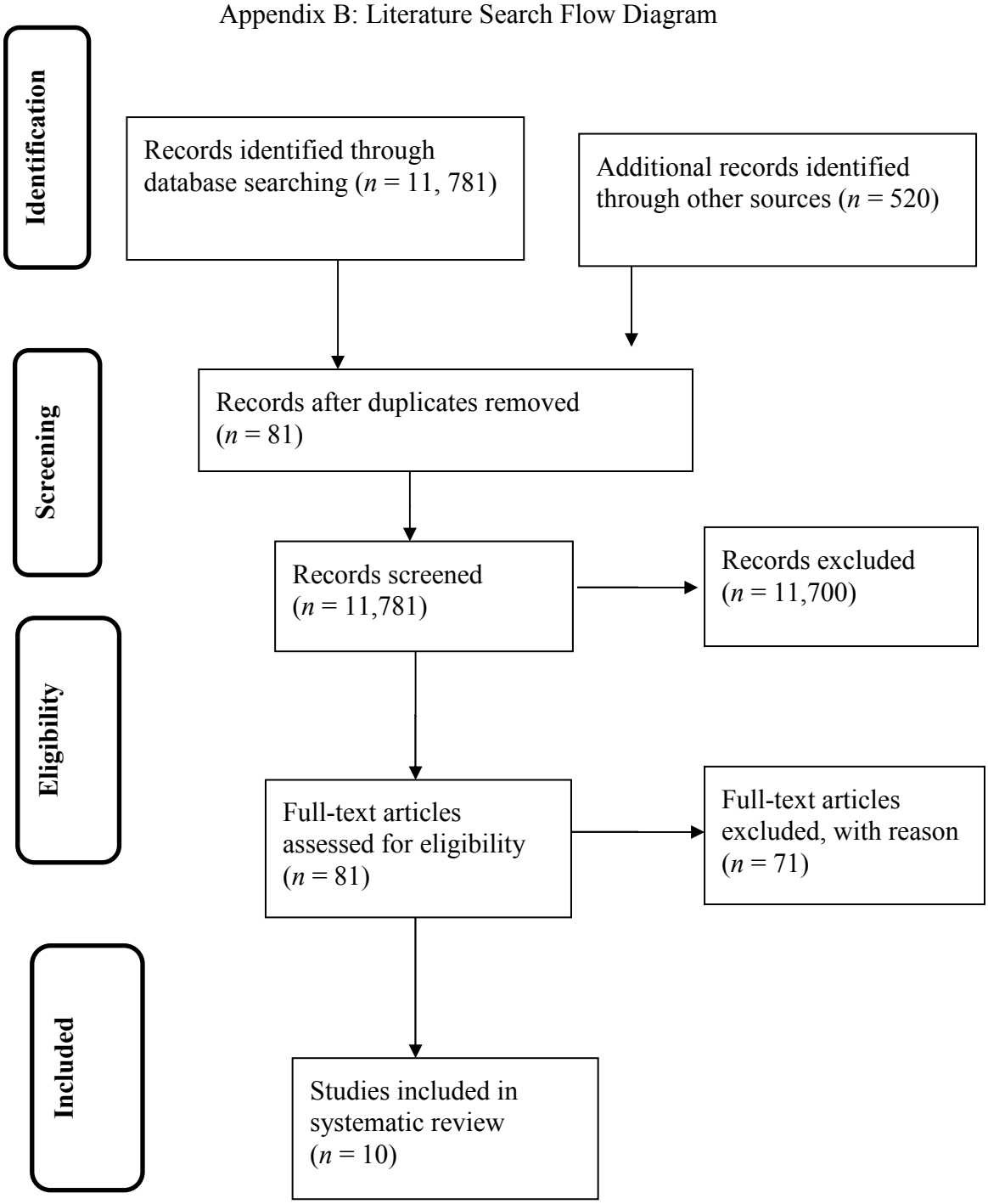
				readmission rates at 3 (RD: −0.08 [−0.14, −0.03]; NNT: 7), 6, 12 and 18 months Lower mean of readmission days at 3 (MD: −1.33; [−2.15, −0.52]), 6, 12 and 18 months.		
Leppin, A. L., Gionfriddo, M. R., Kessler, M., Brito, J. P., Mair, F. S., Gallacher, K., ... & Ting, H. H. (2014).	A systematic review and meta-analysis of randomized trials	**Intervention** TCIs	Relative risk of all-cause or unintended readmission with or without out-of-hospital deaths at 30 days after discharge.	The tested interventions in 42 trials prevented early readmissions (pooled random-effects relative risk, 0.82 [95% CI, 0.73-0.91]; P < .001; I2 = 31%) Studies published before 2002 reported interventions that were 1.6 times	Findings cannot be generalized because many studies in the review were conducted in single, academic centers. The scales that we used to evaluate intervention effects on patient workload and capacity relied on global judgments.	Based on the findings, interventions that utilized a complex and supportive strategy to address contextual issues were effective at reducing early hospital readmissions. Information gained from patients through home visits,

				more effective than those tested recently (Interaction P = .01).		and reported cost savings can be used to guide the design and testing of future interventions.
Mora, K., Dorrejo, X. M., Carreon, K. M., & Butt, S. (2017).	Systematic literature review	**Intervention** TCM interventions including home visits, follow up phone calls post discharge, and handoff of information to the patient's primary care provider.	Rates of hospital re-admission	Significant reductions in hospital readmission rates after utilization of the TCM interventions.	Few studies were included in the review.	Nurse practitioner (NP)-led TCM interventions have the potential to decrease readmissions, but the findings cannot be generalized due to low levels of evidence that warrants further study.
Toles, M., Colón-Emeric, C., Asafu-Adjei, J., Moreton, E., & Hanson, L. C. (2016).	A systematic review	**Intervention** TCIs **Control** Usual care	Readmission rates, mortality, quality of life or functional status.	Significant reductions in the rates of re-admissions and mortality across all studies include in the review.	It was unclear how comparable conditions were maintained throughout the study. Risk of bias in all studies was high.	Findings in the review suggest the need of developing strategies for testing whether transitional care services improve clinical outcomes,

						including the quality of life of patients.
Van Spall, H. G., Rahman, T., Mytton, O., Ramasundarahettige, C., Ibrahim, Q., Kabali, C., ... & Connolly, S. (2017).	A systematic review and network meta-analysis	**Intervention** Transitional care services **Control** Usual care	All cause readmissions and all cause mortality.	Nurse home visit services were most effective in preventing all-cause mortality [ranking P score 0.6794; relative risk (RR) 0.78, 95% confidence intervals (CI) 0.62–0.98] Nurse-home visits were also effective in preventing all-cause readmissions nurse [ranking P score 0.8365; incident rate ratio (IRR) 0.65, 95% CI 0.49–0.86].	The study could not account for the quality of care provided within each category of services, or fidelity to the intervention.	The review offers the first comparative effectiveness network meta-analysis of transitional care services The review also updates previous studies that evaluated the effectiveness of discharge planning services compared with usual care.
Vedel, I., & Khanass	Systematic review and meta-	**Intervention** TCIs	Hospital readmission rates.	TCIs significantly reduced	Results cannot be generalized	The findings can be implemente

ov, V. (2015).	analysis of RCTs			risks of hospital readmissions and ED visits by 8% and 29% respectively (relative risk = 0.92; 95% CI, 0.87–0.98; P = .006 and relative risk = 0.71; 95% CI, 0.51–0.98; P = .04).	due to lack of a control group.	d by clinicians and managers in their primary healthcare settings to determine the optimal balance between intensity and duration of TCIs.

Appendix B: Literature Search Flow Diagram



Adapted from Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., ... & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *PLoS Medicine, 6*(7), e1000100. doi:10.1371/journal.pmed.1000100

Appendix C: Checklist of Items to Include When Reporting a Systematic Review or Meta-Analysis

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	
ABSTRACT			
Structured summary	2	Provide a structured summary including the background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	1
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	1
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed.	
Eligibility criteria	6	Specify study and report characteristics used as criteria for eligibility, giving rationale.	13
Information sources	7	Describe all information sources in the search and date last searched.	2
Search	8	Present full electronic search strategy for at least one database, including any limits used.	
Study selection	9	State the process for selecting studies.	13
Data collection process	10	Describe method of data extraction from reports and any processes for obtaining and confirming data from investigators.	13
Data items	11	List and define all variables for which data were sought, and any assumptions and simplifications made.	

Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies, and how this information will be used in any data synthesis.	
Summary measures	13	State the principal summary measures.	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency for each meta-analysis.	
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence.	
Additional analyses	16	Describe methods of additional analyses, if done, indicating which were pre-specified.	
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	16
Study characteristics	18	For each study, present characteristics for which data were extracted, and provide the citations.	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome-level assessment.	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group and (b) effect estimates and confidence intervals, ideally with a forest plot.	
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	16/17
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	16/17
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups.	16
Limitations	25	Discuss limitations at study and outcome level, and at review level.	

Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	16
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support, and the role of funders for the systematic review.	