

STRETCHING EXERCISE TRAINING AND EDUCATION (SETE) PROGRAM

STRETCHING EXERCISE TRAINING AND EDUCATION (SETE) PROGRAM FOR
HOUSEKEEPING STAFF AT THE QUEEN'S MEDICAL CENTER

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Abstract

Housekeeping staff are important in ensuring cleanliness of the hospital environment. The nature of their work places them at risk for work-related musculoskeletal injuries. There are currently no workplace stretching exercise training and education programs for hospital housekeeping staff in the State of Hawai`i.

The purpose of the 3-week stretching exercise training and education (SETE) program was to improve knowledge, enhance positive attitude, and change behavior among Queen's Medical Center (QMC) housekeeping staff. The Iowa Model of evidence-based practice was used as a framework for the implementation of this program. The multi-step process aided in identifying and synthesizing information in piloting practice change.

The 3-week SETE program included an in-person demonstration of the stretches by a trainer 3 days a week for 3 weeks. Take-home handouts on stretching exercises were distributed to participants. Post-survey evaluation responses were collected during the fourth week of the SETE program.

The number of days the housekeeping staff participated in the SETE program ranged from 1-3 days (36%), 4-6 days (45%), and 7-9 days (18%). Before the SETE program, 26 (79%) of the housekeeping staff reported doing stretching exercises prior to start of the work shift. A total of 33 housekeeping staff completed the post-survey. When asked if participants would be willing to do 10 minutes of stretching at home compared to before the SETE program, the results were positive. There was an increase in knowledge and their perception of the importance of stretching before work and after the SETE program improved. No difference was found for upper and lower body stretches, range of motion and flexibility before and after the SETE program.

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In conclusion, the overall results of the SETE program were positive, however, it is recommended that the SETE program be offered over a longer period of time. The results of the evaluation will be shared with the QMC housekeeping administration.

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Introduction

There are many benefits to stretching in the workplace. Stretching improves core strength, increases range of motion, prevents and promotes good body mechanics, improves psychosocial factors, and prevents injuries. Workplace stretching programs examining decreased occupational injuries are scarce.

According to the Bureau of Labor Statistics (2018), there are nearly 900,000 reported cases of occupational injuries in the United States with one-third of these cases resulting in lost workdays. For example, musculoskeletal disorders (MSDs) account for 37% of U.S. workers compensation cases (U.S Bureau of Labor Statistics, 2015). The number of MSD cases in the state of Hawai'i in 2015 was 2,980 per 10,000 full-time workers, approximately 29.8% of the reported worker's compensation claims (BLS, 2015). Annually, employers spend nearly \$20 billion on worker's compensation for MSDs, 5 times more than the cost of hiring and training (OSHA, 2014). In 2015, Hawaii's incidence rate for MSD were 73.3% for registered nurses and 245% for housekeeping staff. The state median days away from work were 14 for registered nurses and 20 for housekeeping staff. Solutions are needed to prevent occupational injuries in the workplace.

Problem

Housekeeping workers are an integral part to maintaining a clean healthcare environment. They are assigned labor-intensive duties such as lifting, carrying, pulling, transferring, tilting, and repetitive motions. Without proper training and education on body mechanics, physical workloads can lead to irreversible musculoskeletal injuries. The Queen's Medical Center (QMC) provides monthly safety resources as a way of promoting safety in the workplace for QMC staff (e.g. accident prevention, slip/fall, fire safety, personal protective equipment, asbestos,

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bloodborne pathogen), however currently QMC does not provide a stretching training and education program for their housekeeping staff.

The QMC housekeeping staff are represented by the United Public Workers union of the American Federation of State, County and Municipal employees (AFSCME). AFSCME has published a guide to health and safety in the workplace focusing on ergonomics, preventing strains, sprains, and back injuries (AFSCME, n.d.). However, this does not replace having an existing guideline or stretching exercise program for preventing occupational injuries, therefore, it would be beneficial to consider a stretching exercise training and education program in the hospital workplace.

Review of Literature

A literature search was performed using the PubMed database. Using Boolean operators, search terms consisted of “stretching program,” “workplace,” “employment,” “occupational health,” “workplace injuries,” “exercise” and “musculoskeletal injuries.” Inclusion criteria included publication dates within 10 years, studies on humans, English language, and ages 19+. A total of 56 publications were narrowed down to 12 with duplicates being removed and synthesized using Mosby’s quality of evidence (Mosby, 2009). A study of an outpatient setting was removed due to inconsistency with the setting. Eleven articles remained for in-depth review.

Literature Synthesis

Out of the 11 articles from 2010-2016 that were critiqued, the majority of the researchers examined the effects of the stretching exercise programs in office workers in manufacturing companies and hospitals. Studies were critiqued using Mosby’s level of evidence; 10 of the studies were level II and 1 was level I. Meta-analysis results were supported by moderate quality of evidence. The research questions focused on evaluating particular muscle groups, such as the

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neck, back, shoulder or entire muscle group. Settings included the northeastern part of the U.S, southeast Asia, and southern part of the Europe. The intervention groups ranged from 22 and 285 and control groups were between 21 and 282. Data collection periods occurred at baseline, and at 2, 4, 6, 8, and 12 months and were collected from diaries, questionnaires, muscle tests, visual analogue scales (VAS), and pain spots.

The stretching programs were accomplished at the workplace prior to the start of the shift, in the middle of the shift during the break, or at home (along with a stretching exercise brochure to complete at home and log completion of exercises in a diary). The programs lasted for about 8-90 minutes three times a week utilizing physical therapists, athletic trainers, and personal trainers. The therapists or trainers led the exercise sessions working on (a) upper and lower muscle groups with the use of own body weight or resistance bands and (b) flexion and extension. The stretching program focused on strengthening, lengthening and stretching muscle groups. Stretches were held for no longer than 30 seconds.

The four themes identified in the literature were: (a) decreased pain, (b) reduction of symptoms, (c) increased range of motion and strength, (d) knowledge, attitude, and behavior change outcomes. These four themes found in the literature synthesis were most relevant in the development of the evidence-based practice (EBP) project.

Decreased pain. Seven of the articles critiqued by the author provided evidence that the stretching exercise program reduced the intensity of pain significantly, especially the cervical, dorsal, lumbar, shoulder and carpal region (Gross et al., 2016, Level I; Marangoni, 2010, Level II; Moreira-Silva, Santos, Macedo, Trindade, Brito & Socorro Dantas., 2011, Level II; Sihawong, Janwantanakui & Jiamjarasrangi, 2014, Level II; Sihawong, Janwantanakui & Jiamjarasrangi, 2014, Level II; Chen, Wang, Chen & Hu, 2014, Level II). Based on the seven

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studies, the researchers found that musculoskeletal pain can cause discomfort in occupational workers and eventually lead to loss of work days. Sihawong, Janwantanakui and Jiamjarasrangsi (2014), found that the exercise program with office workers had a protective effect and decreased the hazard ratios which in turn decreased the risk of developing low back pain (LBP) in office workers by 60% (HR=0.37, 95% CI 0.22-0.64). Marangoni (2010) completed an analysis of musculoskeletal pain of intermittent stretching exercises in office workers who used computers and found there was a significant reduction in pain by 73% using the VAS scale in the cervical region within 17 work days of intervention ($p=0.000$). Gross et al. (2016) conducted a meta-analysis and found exercise programs had a small beneficial effect on chronic neck pain. They also found that decreasing pain can significantly increase quality of life in occupational workers.

Reduction of symptoms. Marangoni (2010) evaluated the effects of an intermittent stretching exercise program in discomfort, pain spasms, stiffness, and muscle tension. He found in the intervention group that cervical, upper body, and mid and lower back musculoskeletal symptoms were reduced by 72% as measured by the VAS ($p<0.001$). This was a valuable discovery since the number of stretching sessions was only 17 work days. Lowe et al. (2017) examined the effects of stretching exercises on shoulder symptoms in overhead automotive assembly workers in Ohio. The intervention was assessed monthly for seven months using the Shoulder Rating Questionnaire (SRQ) and Discomfort of the Arm Shoulder and Hand (DASH) and found that the exercise group had significantly reduced symptoms in the upper/lower back region, and shoulder within the first month ($p=0.036$) and the seventh month ($p=0.015$). In the SRQ, there was a 44% reduction in shoulder trouble in the last 7 days.

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Lacaze, Sacco Ide, Rocha, Pereira and Casarotto (2012) used VAS and Chalder fatigue questionnaires to evaluate effects of a stretching exercise program offered 4 times a week. The researchers found that the level of discomfort over time, as measured by the VAS, significantly decreased in the spine and buttocks ($p= 0.004$). In addition, decreasing discomfort in these workers increased concentration and memory ($p=0.001$).

Increased range of motion and strength. Three of the studies examined the effects of a stretching exercise program in manufacturing company workers related to increased range of motion and strength. Muyor, Lopez-Minarro and Casimiro (2014) examined hamstring muscle flexibility as well as sagittal spinal posture in working adult women in a private manufacturing company. They found that upon toe-touch and straight leg raise measurement, the experimental group had significant increases in flexibility in the hamstring muscles ($p < 0.01$), decreased thoracic curve ($p < 0.01$), and increased pelvic inclination ($p < 0.05$). The researchers emphasized that increasing range of motion can help decrease muscle stiffness and prevent injuries when involving the larger muscle groups (e.g. hamstrings and quadriceps). They also stated that pelvic inclination can reduce stress on the spine and improve posture.

Sihawong, Janwantanakul and Jiamjarasrangi (2014) evaluated effects of the stretching exercise program on office workers with neck pain. The intervention was done twice per workday for 12 months and measured by recording incidence of neck pain in a diary. The authors found that the intervention decreased neck pain significantly by 12.1% ($p < 0.001$) in the intervention group as compared to 26.7% in the control group. The researchers claimed decreasing neck pain can increase neck flexion movement and decrease neck strain in workers who deal with computers in the office.

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Carvalho Mesquita, Ribeiro and Moreira (2012) evaluated the influence of an 8-minute daily strength and resistance program that occurred for 11 months with warehouse workers. Results showed that the intervention group significantly increased muscle strength and resistance in the lumbar flexors and extensors in comparison to the control group at baseline and after 11 months ($p=0.014$ and $p=0.006$, respectively).

Improved knowledge, attitude, and behavior change outcomes after participation in a stretching program. Sihawong, Janwantanakul and Jiamjarasrangsri (2014) studied individual work-related physical and psychosocial factors related to work environment conditions. A questionnaire developed by the researchers included a job content survey about job control, job demand, physical and psychological job demand, job security, social support, and hazards at work. This study found that social support ($p=0.040$) and job control ($p=0.122$) improved in the stretching exercise group compared to the control group. Gross et al. (2016) indicated that the importance of stretching exercises improved functional status of (a) person's ability to learn, (b) motivation and (c) emotional status. One of the criteria for primary outcome measures for assessing exercise on quality of life was patient satisfaction. Rendant et al., (2011) conducted a study on mindfulness exercises (Qigong). Results of this study were related to patient satisfaction and improved functional status (CI: -23.1 to -5.4) ($p=0.02$).

Moreira-Silva, Santos Abreu and Mota (2015) examined the effect of their stretching program on musculoskeletal pain and related symptoms in different body regions in workers. Intervention consisted of 10-15 minutes of stretching exercise training 3 times a week focusing on the upper and lower regions of the body. A trainer demonstrated the exercises and provided education on how these exercises can reduce musculoskeletal pain. Workers were also given a take home stretching program illustrating the exercises. After 12 months, workers felt less

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musculoskeletal pain especially in the elbow ($p=0.03$) and dorsal region ($p=0.015$). Another study done by Carvalho, Carlose Riberio and Moreira (2011) examined the effect of an exercise program on improving muscle flexibility and strength in the lumbar muscles. Workers were given educational training on the importance of stretching and strengthening lumbar muscles for preventing muscle weakness, pain, limitation and improving posture. There was a significant difference in the lumbar muscle strength and flexibility ($p=0.037$) after the 11 months of the implementation of the exercise program as measured by the isometric electronic dynamometer. Workers in this study were able to improve their lumbar flexibility and posture after the receiving the educational training.

Chen, Wang, Chen and Hu (2014) found Taiwan nurses who completed the stretching exercise program increased their self-efficacy to prevent low back pain in 6 months ($p=0.003$). Chen, Wang Chen and Hu (2014) described self-efficacy as the potential to learn new behavior and grasp personal ability to adhere to regular exercise in specific situations where they lacked support. Self-efficacy was measured by an exercise self-efficacy scale which included 15-item questions on individual's confidence in overcoming any obstacle to continue any regular exercise. Macedo, Trindade, Brito and Dantas (2010) investigated the effects of a workplace fitness program upon pain perception in office workers and found strong evidence on increasing motivation to continue to stretch after the program ended ($p=0.05$). In addition, Trujillo and Zeng (2006) in a study of workers' perceptions and satisfaction response to the "stop and stretch" stretching software program, 63.3% or 12 of the participants had positive effect on their productivity at work, which is more than half of the participants. Ninety-four percent of participants responded with overall satisfaction that they would recommend the strengthening software program to others.

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Based on the literature synthesis of the 11 studies, the key points related to studies on stretching exercise program for workers were (a) reduced intensity of the pain, (b) decreased symptoms (e.g. discomfort, pain spasms, stiffness, and muscle tension), (c) increased range of motion and strength and, (d) improved knowledge, attitude, and intent for behavior change outcomes. This literature summary provides a justification and rationale for having a stretching exercise training and education program within the hospital setting. The Stretching Exercise Training and Education (SETE) program was a 3-week stretching exercise training and education introduced into the daily routine of housekeeping staff at QMC in efforts to promote stretching as a way to prevent occupational injuries.

Application to EBP Project

Although there is a limited amount of established evidence in the literature on stretching training and education programs for housekeeping staff in the healthcare setting, there is evidence from other employment settings to support the piloting and evaluation of an EBP project. The project included stretching activities as well as written educational information for the QMC housekeeping staff. Stretching exercises consisted of an in person trainer demonstration of the stretches over a 3-week period. The educational component consisted of the distribution of handouts on stretching exercises. The SETE program's teaching and learning strategies were selected based on evidence in the literature of workers who had positive outcomes from participating in a stretching training program.

Conceptual Framework

The Iowa Model of EBP to promote quality care was developed by a group of researchers in 1994 and outlines a multiphase process with feedback loops to establish better patient care, enhance the process of nursing, and save healthcare costs (Titler et al., 2001). This model is

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widely used in healthcare settings to aid in implementation of EBP which promotes sustainable change. The ten steps to The Iowa Model include (a) identifying problem triggers, (b) prioritizing the issue, (c) forming a team, (d) assembling relevant research and pertinent literature, (e) disseminating and critiquing research, (f) determining whether there is enough research, (g) piloting change of practice, (h) adapting to practice, (i) carrying out practice, and (j) monitoring outcomes (Titler et al., 2001) (see Appendix A for a visual overview of the conceptual framework).

The first step in the Iowa Model is identifying problem and knowledge focused triggers related to the topic. The problem-focused trigger for this project was that there was no stretching training and education program for housekeeping staff at QMC. The knowledge-focused trigger for this project was that stretching programs have proven to be beneficial for workers. Based on the literature synthesis findings, there have been successful stretching programs for workers who were exposed to occupational injuries in the workplace.

PICO Question

The PICO question is based on how the practice change will influence the QMC housekeeping staff. How will the implementation of SETE (I) for QMC housekeeping staff (P) improve their knowledge, enhance positive attitude and change behavior towards participating in a stretching training and education (SETE) program (O) given workers had no prior SETE program at QMC (C)?

Purpose and Goals

The purpose of this EBP project was to improve knowledge, enhance positive attitude, and change behavior towards participating in the SETE program among QMC housekeeping staff. The goal of this EBP project was to provide a 3-week SETE program for the QMC

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housekeeping staff. The objectives were to (a) have in-person demonstration of the stretches by a trainer, (b) provide supplemental take-home handouts on stretching exercises during the first three weeks, and (c) provide an evaluation at the end during the fourth week of SETE.

Methods

The start date for the EBP project was in November 2018 and the end date for implementation was December 2018. The program efficacy was evaluated once at the fourth week following the participation in the SETE program. This trial project was to explore the feasibility of the SETE program and to influence the organization to potentially develop and implement a stretching exercise training and education program for the QMC housekeeping staff.

Project Design

The EBP is to provide practice recommendations based on a thorough literature review synthesis and translating EBP recommendations into current practice. Limitations of the EBP design were that a majority of the studies were done on office workers and not with hospital housekeeping staff. Eleven articles that were used were Mosby's level of evidence II and one Mosby's level of evidence I which limits finding the highest quality of evidence.

The first week of the SETE program included the introduction of stretching exercises and distribution of take home handouts. The take home handouts provided all of the stretching exercises reviewed during the 3-weeks of SETE program (see Appendix B, C, and D).

Participants practiced the stretches at the work site with the SETE program trainer before the start of work for 10 minutes (Tuesday, Wednesday, and Thursday) and at home using the take home handout. Participants who had existing MSDs or had recent injuries or surgeries in the past 6 to 12 months were asked to voluntarily opt out of stretching for the sake of their safety, but they were encouraged to observe the SETE program during the pre-shift. The second week of the

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program focused on upper body stretches, and the third week focused on lower body stretches. Each stretching exercise was held for 30 seconds per side. At the fourth week, a post survey was given to participants on Tuesday, Wednesday and Thursday to evaluate the project (see Appendix E).

Human Subjects Considerations

This EBP project did not require Research and Institutional Review Committee (RIRC) review (see Appendix F – QMC Memo from J. Chee on December 6, 2018). Participants' identification was anonymous. Participants were asked to not place their names on the post-survey and all post-surveys were kept in a locked box with the trainer. The trainer completed the mandatory Human Subjects Protection (HSP) training through Collaborative Institutional Training Initiative (CITI) at University of Hawai'i at Mānoa. The procedure to follow if a housekeeping staff became injured during the SETE program was based on the guidelines set by QMC Human Resources Policy #616-14-041 and Workers Compensation Policy #616-18-100. The project was supported by Dr. Jennifer Chee, QMC Content Expert and Mr. Barry Ratcliff, QMC Housekeeping General Manager.

Participants/Setting

The EBP project was conducted at QMC, Punchbowl site. The QMC is a private, not-for-profit acute care hospital in the State of Hawai'i (QMC, n.d.). The target population was housekeeping staff employed at QMC-Punchbowl, Queen Emma Tower (QET) 2. The inclusion criteria for all SETE program participants was that they were over 18 years of age and the exclusion criteria was that SETE program participants could not participate if they had a recent MSD injury or surgery. The SETE program was held in the morning during pre-shift for 10 minutes in the food services conference room with the housekeeping staff. The number of the

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QMC housekeeping staff during the SETE program was approximately 25 to 40 for each session (7:30AM to 4:00PM – 42 participants; 3:00PM to 11:30PM – 20 participants; 4:00PM to 12:30PM – 15 participants).

Data Collection Procedures and Tools

The trainer was present at the pre-shift meeting on Tuesday, Wednesday and Thursday of the fourth week to ensure all the participants had a chance to complete the post-survey. A Gantt chart was provided for visual overview of the project timeline (see Appendix G). The survey included brief assessment information as well as knowledge, attitude, and behavior change questions related to the SETE program (see Appendix H).

Data Analysis

Descriptive data used to analyze the responses from the post-survey included frequency, percentages, means, standard deviations, and paired-sample t-test. The data was analyzed using Excel and SPSS. Frequency and paired-sample t-test tables were created to visually display the results. The level of significance was set at $p < .01$.

Results

The result section will include a description of the SETE program participants and results of the post-survey. The post-survey results include self-reported perceptions of knowledge, attitude, and behavior changes before and after the SETE program.

Table 1

Description of participants who attended the SETE program

<u>Days</u>	<u>Frequency</u>	<u>Percent</u>
0	0	0.00
1-3	12	0.36
4-6	15	0.46
7-9	6	0.18
Total	33	100%

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Note. $N = 33$.

Zero (0%) participants reported not attending the SETE program, 12 (36%) reported participating to 1-3 days, 15 (45%) reported coming to 4-6 days, and 6 (18%) reported attending to 7-9 days. Majority of the housekeeping staff attended the SETE program at least 4-6 days. (see Table 1).

Table 2

Summary of participants who have or have not warmed up prior to start of work shift before the SETE program

<u>Variables</u>	<u>Frequency</u>	<u>Percent</u>
Yes	26	0.79
No	7	0.21
Total	33	100%

Note. $N = 33$.

Housekeeping staff were asked whether they have ever warmed up prior to the work shift. Twenty-six (79%) participants responded “yes” to warming up prior to their work shift and 7 (21%) reported “no” (see Table 2).

Post-survey questions 3-15 were assessment/attitude questions and 16-20 were knowledge questions (see Appendix E). Results will be displayed in Tables 3 – 6.

Table 3

Summary of Means, Standard Deviations, and P-value for Scores on questions 3, 4, and 15

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<u>Questions</u>	<u>Total (n)</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u>P-value</u>
SBL	33	6.1	2.7	0.42
SAL	33	7.0	2.7	
SBL	33	6.1	2.7	0.00**
STWTMH	33	8.2	2.4	

Note. SBL = SETE Before Likely (“Before the SETE, how likely were you to stretch at home?”); SAL = SETE After Likely (“After the SETE, how likely are you to continue doing SETE at home?”); STWTMH = SETE Today Willing Ten Minutes at Home (“As of today, how willing are you to do 10 minutes of SETE at home?”). ** $p < .01$

A paired-sample t-test was conducted to compare before and after the SETE program conditions for Likert scale attitude questions 3-4, 5-6, 7-8, 9-10, 11-12, and 13-14. When asked in question 3 if participants were likely to stretch at home before the SETE program, no difference was found in the scores for before ($M=6.1$, $SD=2.7$) and after ($M=7.0$, $SD=2.7$) conditions; $t(32) = -2.1$, $p=0.42$. However, question 15 asked how willing they were to do 10 minutes of SETE program at home ($M=8.2$, $SD=2.4$). A difference was found in the scores for before ($M=6.1$, $SD=2.7$) and doing 10 minutes of SETE program at home ($M=8.2$, $SD=2.4$) conditions; $t(32) = -5.0$, $p=0.00$ (see Table 3).

Table 4

Frequencies, Means, Standard Deviations, and P-value for questions 5 and 6

<u>Questions</u>	<u>Total (n)</u>	<u>Mean</u>	<u>Standard Dev</u>	<u>p-value</u>
SBKS	33	6.9	2.4	0.00**
SAKS	33	7.8	2.5	

Note. SBKS = SETE Before Know Stretching (“How much did you know about stretching before the SETE?”); SAKS = SETE After Know Stretching (“As of today, how much do you know about stretching after the SETE?”).

** $p < .01$

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Knowledge improved after the SETE program. There was improved difference in the knowledge for before ($M=6.9$, $SD=2.4$) and after ($M=7.8$, $SD=2.5$) the SETE program; $t(32) = -3.4$, $p=0.002$ (see Table 4).

A total of 5 knowledge questions were asked in the post-survey to evaluate the content taught in the 3 weeks of SETE program. In the knowledge question section, the mean knowledge score was 72%, which was derived from sum of total score 5 out of 5 questions divided by the number of participants ($n=33$). When asked, “why is stretching important to do”, 27 (82%) answered correctly and 6 (18%) answered incorrectly. When asked, “which is an example of musculoskeletal disorders (MSDs)”, 31 (94%) answered correctly (C, back pain), 1 (3%) answered B (diabetes), and 1 (3%) answered D (high blood pressure).

In order to test the upper body stretching knowledge, participants were asked, “what stretch opens up the shoulders and increases circulation in the upper body?” Twenty-eight (85%) answered correctly (B, shoulder rolls), and 4 (12%) answered A (forearm/wrist stretch), and 1 (3%) answered C (quadriceps stretch). A question about which cross body stretch affects which upper muscle group, 28 (85%) answered correctly (shoulder), 1 (3%) answered B (wrists), and 4 (12%) answered D (feet). The last question tested knowledge regarding lower body stretches and asked, “standing heel to butt stretch works with which muscle group?” Six (18%) answered correctly (quadriceps), 18 (55%) answered C (hamstrings), 5 (15%) answered D (shoulders) and 4 (12%) answered B (glutes).

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Table 5

Frequencies, Means, Standard Deviations, and P-value for questions 13 and 14

<u>Questions</u>	<u>Total (n)</u>	<u>Mean</u>	<u>Standard Dev</u>	<u>p-value</u>
SBSBW	33	7.7	2.5	0.005**
SASBW	33	8.3	2.3	

Note. SBSBW = SETE Before Stretching Before Work (“Prior to the SETE, how strongly did you feel about stretching before work?”), SASBW = SETE After Stretching Before Work (“As of today, how do you feel like stretching is important to do before work?”). ** $p < .01$

Question 13 asked how strongly participants felt about stretching before work prior to the SETE program, and the results revealed improved difference before ($M=7.7$, $SD=2.5$) and after ($M=8.3$, $SD=2.3$) conditions; $t(32) = -2.9$, $p=0.005$ (see Table 5).

Table 6

Summary of Frequencies, Means, Standard Deviations, and P-values for score on questions 7-8, 9-10, and 11-12

<u>Questions</u>	<u>Total (n)</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u>P-value</u>
SBUC	33	7.7	2.4	0.66
SAUC	33	7.9	2.6	
SBLC	33	7.8	2.5	0.06
SALC	33	7.9	2.5	
SBRFC	33	7.2	2.4	0.73
SARFC	33	7.3	2.5	

Note. SBUC = SETE Before Upper Body Comfortable (“How comfortable were you to do upper body stretching exercises before SETE?”); SAUC = SETE After Upper Body Comfortable (“As of today, how comfortable are you with doing upper body stretching exercises after SETE?”); SBLC = SETE Before Lower Body Comfortable (“How comfortable were you to do lower body stretching exercises before SETE?”); SALC = SETE After Lower Body

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Comfortable (“As of today, how comfortable are you with doing lower body stretching exercises after SETE?”); SBRFC = SETE Before Range of Motion and Flexibility Comfortable (“How much range of motion/flexibility did you feel you had before SETE?”); SARFC = SETE After Range of Motion and Flexibility Comfortable (“As of today, how much range of motion/flexibility do you feel you have after SETE?”). $**p < .01$

Question 7 asked how comfortable participants were to do upper body stretching exercises before and after the SETE program. There was no improved difference in the scores for before ($M=7.7$, $SD=2.4$) and after ($M=7.9$, $SD=2.6$) the SETE program; $t(32) = -0.43$, $p=0.66$.

Question 9 asked how comfortable participants were with lower body stretching exercise before and after the SETE program. There was a marginally improved difference in the scores for before ($M=7.8$, $SD=2.5$) and after ($M=7.9$, $SD=2.5$) the SETE program; $t(32) = 1.8$, $p = 0.06$.

Question 11 asked how much range of motion/flexibility participants felt they had before and after the SETE program. There was no improved difference in the scores for before ($M=7.2$, $SD=2.4$) and after ($M=7.3$, $SD=2.5$) the SETE program; $t(32) = -0.33$, $p=0.73$ (see Table 6).

Discussion

The purpose of the 3-week SETE program was to introduce change into the daily work routine of housekeeping staff at QMC in efforts to promote stretching as a way to prevent occupational injuries. Overall, the main findings revealed that incorporating the SETE program received a positive evaluation/feedback by the housekeeping staff at QMC in regard to knowledge gained, positive attitude, and intention to change behavior.

The intent for this EBP project was to evaluate whether housekeeping staff would be interested in a stretching program like the SETE program if QMC were to implement one in the future. Approximately half of the participants attended about 4-6 days of the SETE program. A majority of the housekeeping staff had previously warmed up prior to the start of the work shift

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before the SETE program. The QMC housekeeping general manager had concurred that the housekeeping staff have been warming up prior to start of the work shift but it had been intermittent.

In the SETE program, time was a critical point as to whether housekeeping staff would be involved in stretching at home. There were no significant changes in likely to continue to do stretching at home, however housekeeping staff responded positively to performing 10 minutes of stretching at home. Similar studies also had the same results. Lacaze, Sacco Ide, Rocha, Pereira and Casarotto (2012) found that performing 10 minutes of stretching exercise 4 times a week at work led to decreasing level of mental fatigue, memory and decreased tiredness. Stretching exercises were performed before and during breaks for 10 minutes at a time which allowed them enough time to stretch. An important point is that housekeeping staff seemed to prefer performing 10 minutes of stretching at home as compared to stretching for an unknown amount of time. Overall, housekeeping staff displayed increased motivation in continuing to do 10 minutes of SETE program at home and at work. Macedo, Trindade, Brito and Dantas's (2010) study postulated that office workers in the study also did not seem to want to take much of the working time stretching as they preferred to not use breaks during work. Negotiating 10 minutes of stretching seemed like a feasible enough time to stretch without jeopardizing too much time lost.

The SETE program results confirmed housekeeping staff's increased general knowledge after the course of the SETE program. Similar results were found by Moreira-Silva, Santos, Abreu, and Mota (2015). They found a significant association in increased general knowledge from their stretching program. The workers in the study were given a take home stretching program illustrating exercises and were also given an in-person demonstration of upper and

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lower body exercises. During the in-person demonstration of the exercises, the trainer explained the exercises focusing on decreasing muscle tension in some body regions to reduce musculoskeletal pain. A significant decrease in pain was found after the stretching program, demonstrating that workers retained knowledge about the importance of doing stretches to gain health benefits.

In the SETE program post-survey, the majority of the housekeeping staff answered correctly on general knowledge questions about the importance of stretching. However, when asked, “Standing heel to butt stretch works which muscle group?” more than half of the housekeeping staff did not select the correct answer. During the SETE program, the SETE trainer repeatedly informed which muscle group was being stretched for each stretching exercises. Perhaps the questions asked about knowledge on the survey were more anatomical-based and housekeeping staff were not familiar with the muscle group and names of the stretches. Moreira-Silva, Santos, Abreu, and Mota (2015) offered a good example of providing general knowledge about stretching by referring the stretches to decrease and prevent musculoskeletal pain within the body region (upper or lower muscle groups). Future recommendation for developing knowledge questions should include “which of the following stretches for upper muscle groups are performed to decrease carpal tunnel syndrome.”

A study by Carvalho, Carlos Ribeiro and Moreira (2011) examined effects of a stretching program in warehouse workers and found that they increased lumbar muscle flexibility and strength compared to baseline. In this study, workers were educated on the importance of stretching and strengthening muscles for preventing muscle weakness, pain, limitation and posture. Physiotherapists were present at the warehouse twice a month to answer questions about the exercise program. The workers were able to see improvement in muscle flexibility and

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strength after the stretching program which demonstrated that they retained knowledge about flexibility and strength.

Housekeeping staff were overall positive about the SETE program. Macedo, Trindade, Brito and Dantas (2010) found improvement in the work atmosphere and quality of life at the workplace as well as increasing motivation to stretch after their stretching program. In this study, some workers in the beginning assumed they did not think they would benefit from the stretching program. However, participants showed adherence in the workplace fitness program as evidenced by half the workers participating in the program, which was considered a success in terms of motivation. Housekeeping staff at QMC have also shown participation amounting to 50% of attendance in the SETE program. Trujillo and Zeng (2006) in a study of data entry workers in the “stop and stretch” software program, found workers were satisfied with the stretching program and all workers would recommend the program to their co-workers. In the SETE program, housekeeping staff also felt increased importance in stretching and were more likely to do stretching at home and at work. A study conducted by Chen, Wang and Chen. (2012) found that their stretching exercise program improved motivation and attitude towards stretching after the stretching exercise program for nurses in the program.

In the SETE program, results found that housekeeping staff were not comfortable in performing upper and lower body stretches, and with their range of motion/flexibility. The author speculated that this outcome may be due to the short length of the SETE program, which may not have allowed a sufficient amount of time for housekeeping staff to become familiar with the stretching exercises. Muyor, Lopez-Minarro and Casimirro (2014) conducted one of the shortest stretching programs that was successful in increasing hamstring flexibility in industrial workers. The researchers found that their participants increased their lower body flexibility and

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range of motion by evaluating through the passive straight leg raise test and toe-touch test. The stretching program consisted of 3 hamstring stretches that were held for 20 seconds each per exercise, 3 sessions a week for 12 weeks. The stretching program was conducted by a Physical Therapist who explained reasons for doing the stretches as well as instructing them to feel a strain on the hamstring muscles without feeling pain, which demonstrated connection to the meaning of the stretches. The 3 week SETE program may not have been long enough for housekeeping staff to grasp the more detailed information about stretching such as names of the muscle groups, upper and lower body stretches, and range of motion as compared to the study by Muyot, Lopez-Minarro and Cassimirro (2014). Another study by Sihawong, Janwantanakul and Jiamjarasrangi (2014) found that participants showed best neck range of motion and flexibility at 3 months. However, at 9 months, participants of this study showed less neck range of motion and flexibility than at 3 months. This result could mean that perhaps stretching exercises have become repetitive and mundane. It should be recommended that the program should promote participants to continue to stretch by continued reinforcement. Perhaps a longer length of the implementation of the SETE program that is at least 12 weeks should be considered for improving housekeeping staff's understanding about stretching.

Limitations

The SETE program was limited to only morning shift housekeeping staff and on certain days of the week (Tuesday, Wednesday, and Thursday). This could possibly have led to less accessibility to people. Another study limitation was that self-reported data on the survey may have contained potential bias such as housekeeping staff not providing accurate and honest information, lack of memory, boredom, and exaggeration of answers (Trujillo & Zeng, 2006).

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The EBP project had time limitations as the implementation occurred for only 4 weeks. The majority of the literature search article studies had implemented the project between 3-12 months. Space was also an issue during the implementation of the SETE program as the housekeeping staff were not given ample room to perform the stretches as there were chairs occupying most of the space.

Implications

There are many different avenues for the future practice projects in this area. The next project for the SETE program would be to offer this program over a longer period of time and to do another evaluation. As a DNP nurse it is imperative that she shares her findings with the QMC housekeeping management and works collaboratively with them to ensure that there is sustainability and follow-up. The SETE trainer and the stakeholders must work together to create a practice environment that fosters optimal health care delivery within the organization.

Conclusion

In conclusion, the initiation of the SETE program included the Iowa Model of EBP Practice steps to identify problem triggers, determined priority of the issue, formed a relevant interdisciplinary team, assembled relevant research and pertinent literature, disseminated and critiqued research, determined whether there is enough research done on this subject, piloted change of practice, made efforts to encourage adaptability of practice and carry out the practice, and evaluated outcomes.

In summary, the implementation of the SETE program demonstrated the need for hospital organizations like QMC to further evaluate the need for stretching programs among housekeeping staff. This initial step to pilot change this practice, revealed positive results in

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increasing housekeeping staff's general knowledge, enhancing positive attitude, and changing behavioral intentions.

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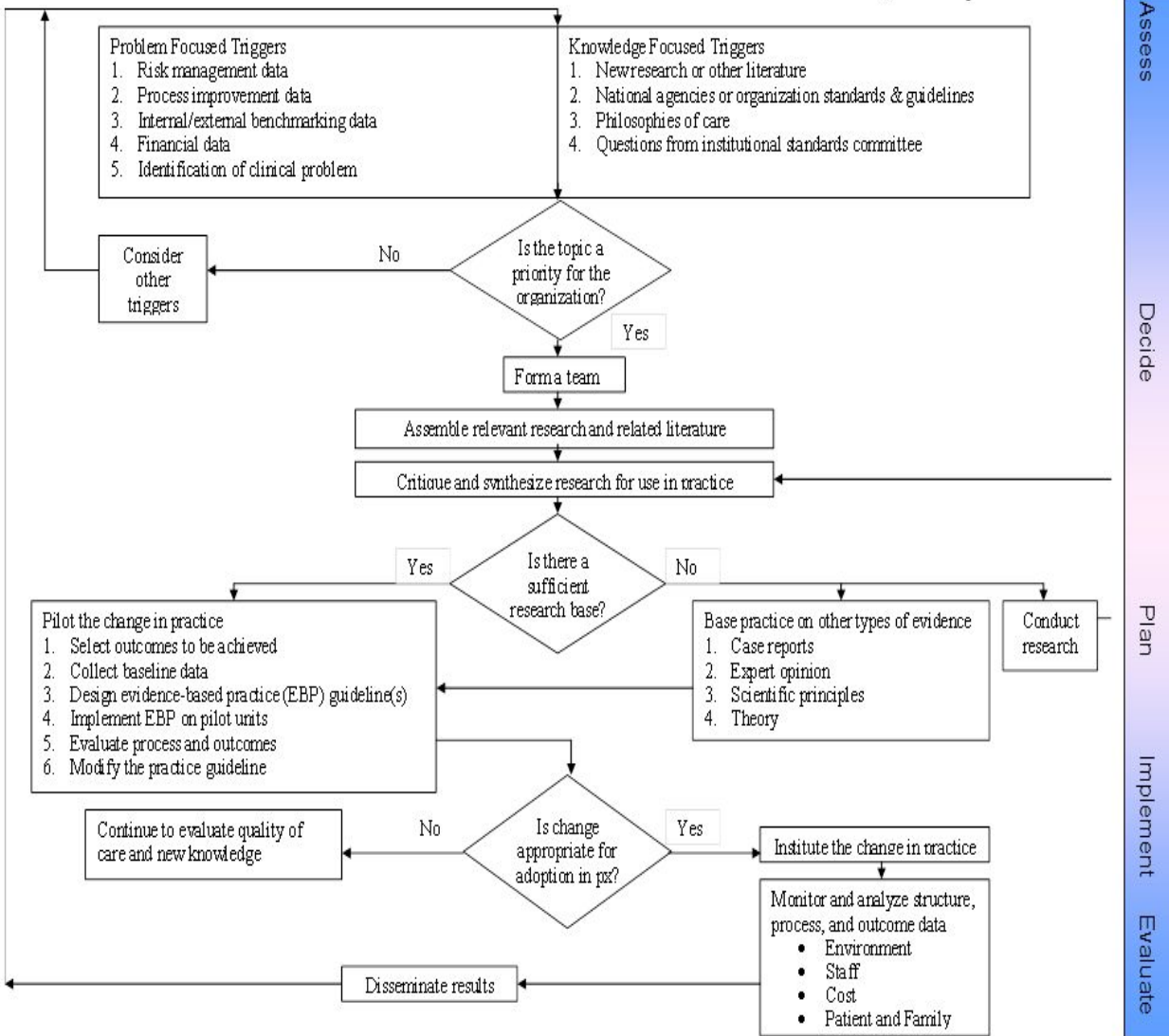
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Appendix A

Iowa Model of Evidence

Iowa Model of Evidence-Based Practice to Promote Quality Care



Titler, Kleiber, Steelman, et al., 2001

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Appendix B

SETE Take Home Handout – Week 1



Importance of stretching

- Improves mood
- Prevents injuries & musculoskeletal disorders
- Decreases pain
- Improves range of motion and strength
- Increases motivation
- Increases quality of life

Initiation of Stretching Exercise Training and Education (SETE)- A 3 week program led by Doctorate of Nursing Practice student, Class of 2019 candidate, Joo Sun (Jennifer) Kim

Contact info

E-mail: Jenjkim@hawaii.edu

Appendix C

SETE Take Home Handout – Week 2

Week 2 of SETE

UPPER BODY STRETCHES



UPPER CROSS-BODY STRETCH

Standing tall, bring one arm across the chest to the opposite arm and pull it across your body until you feel a stretch. Hold for 30 seconds. Do 2 sets of 30 seconds on each side



CHEST STRETCH

Standing tall, bring your interlocked fingers back behind your buttocks. With keeping the back straight and keeping shoulder blades together, pull until you feel a stretch in your chest. Hold for 30 seconds. Do 2 sets of 30 seconds on each side



LATERAL NECK/TRAPEZIUS STRETCH

Looking straight forward with not letting the chin drop down, bring your ear towards the shoulder without letting the shoulder lift up. Hold neck with support for 30 seconds. Do 2 sets of 30 seconds on each side.



BICEPS WALL STRETCH

Stand tall facing the wall and bring one arm extended and place palm against the wall. Then gently rotate the chest to make the arm parallel to the wall or until you feel the stretch. Hold for 30 seconds. Do 2 sets of 30 seconds on each side



OVERHEAD TRICEPS STRETCH

Standing tall, bring one arm overhead with forearm resting between your shoulder blades. Keep biceps close to your ear. Hold for 30 seconds. Do 2 sets of 30 seconds on each side.



FOREARM/WRIST FLEXOR AND EXTENSOR STRETCH

Bring arm in front of you with palm flexed, facing away. Keep elbows straight and keeping it at shoulder height. Using the other hand, gently bend wrist towards you until you feel a stretch. Hold for 30 seconds. Do 2 sets of 30 seconds on each side.



LATERAL NECK/TRAPEZIUS STRETCH



Looking straight forward with not letting the chin drop down, bring your ear towards the shoulder without letting the shoulder lift up. Hold neck with support for 30 seconds. Do 2 sets of 30 seconds on each side.

Appendix D

SETE Take Home Handout – Week 3


Week 3 of SETE

LOWER BODY STRETCHES




STANDING HEEL TO BUTTOCKS STRETCH- QUADRICEPS

Standing tall, bend one knee to the buttocks and hold with opposite arm for 30 seconds. Do 2 sets of 30 seconds on each side.



STANDING HAMSTRING STRETCH

From a standing position, extend one leg out in front with heel on the floor and foot flexed. Bend the back leg with supporting the back knee with both hands and lower the back with keeping the back flat to feel the stretch. Hold for 30 seconds. Do 2 sets of 30 on each side.




TWISTING GLUTE (BUTTOCKS)/ILLIOTIBIAL (IT) BAND STRETCH

Begin with sitting on floor with one leg bent and the other straight. Cross the bent leg over to the straight leg with feet flat on the floor. Twist your torso to anchor the bent leg with your arm and feel the stretch. Hold for 30 seconds. Do 2 sets of 30 seconds on each side.



INNER THIGH STRETCH- ADDUCTORS

Step off to the side with one leg. Bend the knee (do not let knee go over toe) and move your leg further to feel the stretch in your inner thigh. Hold for 30 seconds. Do 2 sets of 30 seconds on each side.



STANDING CALF STRETCH

Stand facing the wall, with placing both hands on the wall with one leg forward and other behind you with the back leg extended and front leg bent at the knee. Lean forward with keeping heels on the ground and feel the stretch in the calf muscles. Hold for 30 seconds. Do 2 sets of 30 seconds on each side.



LATERAL NECK/TRAPEZIUS STRETCH

Looking straight forward with not letting the chin drop down, bring your ear towards the shoulder without letting the shoulder lift up. Hold neck with support for 30 seconds. Do 2 sets of 30 seconds on each side.

STRETCHING EXERCISE TRAINING AND EDUCATION (SETE) PROGRAM

Appendix E

Post-survey

Assessment:

1. How many days did you participate in the Stretching Exercise Training and Education (SETE)? (Circle only one)

[] 0

[] 1-3

[] 4-6

[] 7-9

2. Before the SETE, have you ever warmed up prior to start of your work shift?

Yes No

Directions: For the next following questions (Questions 3-13), please assign rating between 1 and 10 to Indicate your opinion. A rating of “1” indicates “never”, a rating of “5”

indicates “sometimes”, a rating of “10” indicates “always”. Please circle only one.

3. Before the SETE how likely were you to stretch at home?	1	2	3	4	5	6	7	8	9	10
4. After the SETE, how likely are you to continue doing SETE at home?	1	2	3	4	5	6	7	8	9	10
5. How much did you know about stretching before the SETE?	1	2	3	4	5	6	7	8	9	10
6. As of today, how much do you know about stretching after the SETE?	1	2	3	4	5	6	7	8	9	10
7. How comfortable were you to do upper body stretching exercises before SETE?	1	2	3	4	5	6	7	8	9	10

STRETCHING EXERCISE TRAINING AND EDUCATION (SETE) PROGRAM

8. As of today, how comfortable are you with doing upper body stretching exercises after SETE?	1	2	3	4	5	6	7	8	9	10
9. How comfortable were you to do lower body stretching exercises before SETE?	1	2	3	4	5	6	7	8	9	10
10. As of today, how comfortable are you with doing lower body stretching exercises after SETE?	1	2	3	4	5	6	7	8	9	10
11. How much range of motion/flexibility do you feel you had before SETE?	1	2	3	4	5	6	7	8	9	10
12. As of today, how much range of motion/flexibility do you feel you have after SETE?	1	2	3	4	5	6	7	8	9	10
13. Before the SETE, how strongly did you feel about stretching before work?	1	2	3	4	5	6	7	8	9	10
14. As of today, how strongly do you feel like stretching is important to do before work?	1	2	3	4	5	6	7	8	9	10
15. As of today, how willing are you to do 10 minutes of SETE at home?	1	2	3	4	5	6	7	8	9	10

Knowledge/Attitude section:

16. Why is stretching important to do? (Circle only one)
- A. Prevents injuries and musculoskeletal disorders
 - B. Clears acne
 - C. Balances the hormones in your body
 - D. Increases collagen in your body

STRETCHING EXERCISE TRAINING AND EDUCATION (SETE) PROGRAM

17. What is an example of musculoskeletal disorders (MSDs)? (Circle only one)
- A. Obesity
 - B. Diabetes
 - C. Back pain
 - D. Hamstrings stretch
18. What stretch opens up the shoulders and increases circulation in the upper body? (Circle only one)
- A. Forearm/wrist stretch
 - B. Shoulder rolls
 - C. Quadriceps stretch
 - D. Hamstrings stretch
19. Upper cross-body stretch is used for which muscle group? (Circle only one)
- A. Shoulders
 - B. Wrists
 - C. Calves
 - D. Feet
20. Standing heel to butt stretch works which muscle group? (Circle only one)
- A. Quadriceps
 - B. Glutes
 - C. Hamstrings
 - D. Shoulders

STRETCHING EXERCISE TRAINING AND EDUCATION (SETE) PROGRAM

Appendix F

QMC Memo of Assurance – EBP – Not Human Subjects Research



THE QUEEN'S MEDICAL CENTER

Memo



Date:	12/6/2018
To:	Joo Sun Kim (Jennifer Kim)
From:	Jennifer Chee PhD RN CHSE Clinical Instructor
Subject:	Project required by UH School of Nursing Doctor of Nursing Practice (DNP) Program

Dear Joo Sun Kim,
Per your submitted documentation (project proposal) titled *Initiation of Stretching Exercise Training and Education (SETE) for Housekeeping Employees at the Queens Medical Center* translates existing knowledge into practice and does not develop or contribute generalizable knowledge; is not systematic investigation.

Your project is an evidence based practice project and is not a research project because you have confirmed the following.

- The project is not a systematic investigation
- The project will not be assigning patients or staff to groups that will receive different types of procedures, devices, treatments, intervention or interactions
- The project does not target members of a protected group (i.e. under 18 years of age, developmentally or cognitively disabled, prisoner, HIV+ status, pregnant female, etc.)
- The project does not involve interventions, procedures, tests or hospital stays beyond what is standard practice (non-experimental) for patient care
- The project does not pose additional risk to patients, healthcare providers or staff beyond what is standard practice for patient care.
- The project does not pose any risk to patient or staff confidentiality
- The project does not collect/use/study/generate data that is private and identifiable (e.g. linking to a person by name, medical record number, social security number, date of birth, date of admission or any other identifiers)
- In addition, you will only be using aggregate data to evaluate your project

At the Queen's Medical Center (QMC) quality improvement and evidence based practice projects are considered "NOT human subjects research" and do not require Research and Institutional Review Committee (RIRC) review. Please note that if you need human subjects review due to your university regulation or future dissemination requirements, the QMC RIRC will not provide a retroactive review.

Thank you,
Jennifer Chee

STRETCHING EXERCISE TRAINING AND EDUCATION (SETE) PROGRAM

Appendix G

Gantt chart

	2017	2018				2019				
Objectives	Nov-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan	Feb	Mar	Apr	May
Literature search	■						■	■		
Design intervention										
Engage stakeholders	■	■	■	■	■	■	■	■	■	■
Collect data					■					
Enter data						■	■	■		
Analyze data						■	■	■		
Interpret data						■	■	■		
Prepare/finalize surveys				■	■					
Implement practice change					■					
Training and education to housekeeping staff				■	■					
EBP project defense				■				■		
Graduation										■

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Appendix H

Evaluation questions per week breakdown

Stretching Exercise Training and Education (SETE)				
	Topic	Objective	Content	Evaluation
Week 1	Importance of stretching	Participants understand why it is important to stretch to prevent workplace musculoskeletal injuries	Monday- Importance of stretching Wednesday- Risk factors for MSDs, symptoms of MSDs Friday- Ways to prevent MSDs	Survey questions: <ul style="list-style-type: none"> • (#5) Assessment- Attitude: “How much did you know about stretching before the SETE?” • (#6) Assessment- Attitude: “As of today, how much do you know about stretching after the SETE?” • (#11) Assessment- Attitude: “How much range of motion/flexibility do you feel you had before SETE?” • (#12) Assessment- Attitude: “As of today, how much range of motion/flexibility do you feel you have after SETE?”

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				<ul style="list-style-type: none"> • (#13) Assessment- Attitude: “Before the SETE, how strongly did you feel about stretching before work?” • (#14) Assessment- Attitude: “As of today, how strongly do you feel like stretching is important to do before work?” • (#16) Knowledge: “Why is stretching important to do?” • (#17) Knowledge: “What is an example of MSDs?”
Week 2	Upper body stretches	Participants understand the importance of upper body stretches	Monday- Shoulders, chest and neck exercises Wednesday- Arms, forearm, wrist exercises Friday- Lower back	<p>Survey questions:</p> <ul style="list-style-type: none"> • (#7) Assessment- Attitude: “How comfortable were you to do upper body stretching exercises before SETE?” • (#8) Assessment- Attitude: “As of today,

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				<p>how comfortable are you with doing upper body stretching exercises after SETE?"</p> <ul style="list-style-type: none"> • (#18) Knowledge: "What stretch opens up the shoulders and increases circulation in the upper body?" • (#19) Knowledge: "Upper cross body stretch is used to stretch which muscle group?"
Week 3	Lower body stretches	Participants understand the importance of lower body stretches	<p>Monday- Quadriceps, hamstrings, glutes</p> <p>Wednesday- Iliotibial band, adductor</p> <p>Friday- calves, glutes, hips</p>	<p>Survey question:</p> <ul style="list-style-type: none"> • (#20) Knowledge: "Standing heel to butt stretch works which muscle group?" • (#9) Assessment- Attitude: "How comfortable were you to do lower body stretching exercises before SETE?"

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				<ul style="list-style-type: none"> • (#10) Assessment- Attitude: “As of today, how comfortable were you with doing lower body stretching exercises after SETE?”
Week 4	Evaluation	To evaluate whether SETE improved knowledge and enhanced positive attitude and behavior change towards participating in the SETE program among QMC housekeeping staff.	Post-survey	Post-survey

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Appendix I

DNP essentials

In order to fulfill *The Essentials of Doctoral Education for Advanced Nursing Practice* found by The American Association of College of Nursing (AACN), the following foundational core competencies have been deemed essential for the graduates of the DNP program (AACN, 2006, p. 8). The doctoral program focuses on innovative and EBP to improve and enhance leadership clinical skills, knowledge, develop advanced competencies in complex practice roles, and quality of patient delivery and outcomes. The following paragraphs demonstrate evidence of meeting foundational competencies as defined by the *DNP Essentials*.

Essential I: Scientific Underpinnings for Practice. This practice for underpinnings of the complexity of practice focuses on integrating nursing science with science-based theories and concepts. This includes combining knowledge from ethics, biophysical, psychosocial, analytical and organizational sciences from nursing practice.

Essential II: Organizational & Systems Leadership for Quality Improvement and Economics. The DNP student was able to develop and evaluate strategies in managing the current and future needs of the population and community that is sustainable and cost effective.

Essential III: Evidence-Based Practice & Translation Science. Scholarly nursing practice is “the integration of knowledge from discoveries in increasingly complex practice situations” (AACN, 2006, p.11). The DNP student have been prepared to apply analytic methods and other evidence to implement the best practice by collecting, informing, analyzing, designing, and examining behavior and outcomes.

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Essential IV: Information Systems & Technology. DNP graduate has demonstrated the ability to design, select, use and evaluate programs with the use of information systems/technology in improving patient care and health systems. Statistical software SPSS was used to analyze data in demonstrating the ability for the project to execute its efficacy of improving health care.

Essential V: Health Care Policy & Ethics. The policy development in SETE in the state of Hawaii would address the health care needs of the population with prevalence of occupational injuries. Engagement of the process of this policy development is critical in creating a healthcare system that would influence the delivery of healthcare.

Essential VI: Inter-professional Collaboration. Effective communication with the interdisciplinary teams led to the result of accomplishing the Institute of Medicine (IOM) mandate for safe, timely, effective, efficient, equitable and patient-centered care in a complex organizational environment. The SETE project collaborated with a team of housekeeping department and DNP project chair and committees in developing a possible practice change.

Essential VII: Prevention and Population Health. The implementation of SETE is central to promoting health and preventing risk and reduction of possible occupational injuries. SETE program was designed to encourage housekeeping staff to have increased motivation to stretch, increase knowledge, and to have positive attitude toward something that is evidence-based to have a positive influence in this particular population.

Essential VIII: Advanced Nursing Practice & Education. The DNP student with focus of Adult/Gerontology Nurse Practitioner have demonstrated evidence of designing,

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implementing and evaluating an implementation based on utilizing evidence-based practice. The SETE provided education and demonstration with culturally sensitive approaches.