

A Quality Improvement Initiative: Motivations and Barriers to Hospital Nursing Employee
Participation in Workplace Wellness Program

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Author Note

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Abstract

Purpose: The purpose of this evidence-based quality improvement (QI) study was to identify the characteristics that are associated with participation in hospital-based workplace wellness programs among hospital nursing employees. The goal was to identify the perceived motivations for and barriers to participation in hospital-based workplace wellness programs faced by hospital nursing employees such that it may provide a basis for increased participation by hospital employees in workplace wellness programs in the future.

Background & Significance: The incidence of chronic diseases has increased dramatically in the last century and physical inactivity is epidemic. The workplace is an ideal setting for health promotion activities because of the amount of time people spend at work. A research study from *Truven Health Analytics* found that hospital employees in the U.S. are less healthy than the general workforce, cost more in healthcare spending than the general employee population, and are more likely to be hospitalized than the overall working adults in the U.S. Despite significant health education among healthcare professionals, it appears that health knowledge often does not translate into their own healthy behaviors.

Method: A one-time anonymous *Wellness Participation Survey* questionnaire was disseminated to eligible advanced practice providers and registered nurses engaged in clinical practice in two large public teaching hospitals as determined by the hospital administration and the nursing leadership. A transmittal letter soliciting participation in the *Wellness Participation Survey* with instructions and pertinent information to submit the survey electronically using the online *REDCap* platform was sent to the eligible participants. The completion and return of the survey questionnaire were considered the respondents' informed consent to participate in the QI

study project. In order to protect the identity and confidentiality of the participants and their responses, no names or identifiable personal information was solicited.

Results & Conclusion: The *Wellness Participation Survey* was sent to a total of 120 eligible hospital nursing employees. A total of 87 participants responded: 52 worked at the state hospital and 35 at the county funded hospital. Of the 87 respondents; 75% were clinical nursing staff and 25% were advanced practice providers. More females responded than males (Female (75, 86.2%); Male (12, 13.8%)) and maximum responses received were from age groups 31-40 and 41-50 years. Response rate among White Caucasians and Asian or Pacific Islanders was higher compared to other ethno-racial backgrounds. The survey results found that two-thirds of the respondents were aware of established hospital-based wellness programs and a third were not aware of program availability. Less than half of the respondents (48.2%) were correctly aware of the availability of wellness programs for their families but the majority (51.8%) either erroneously said “No” or “Did not know.” Results showed that the average and median number of perceived program benefits at the county hospital was lower than for the state hospital, which reflected the true situation. Ninety three percent out of 87 respondents said “Yes” to increased participation if incentives were provided. Gift cards and cash incentives were more popular in the two middle-aged groups (31-40 and 41-50 years) than they were in the youngest and oldest age groups. Results revealed non-availability of a gymnasium at workplace for hospital employees, long working hours, lack of incentives, and work-related stress were ranked highest perceived barriers for participation in workplace wellness programs by all job types.

Keywords: Workplace wellness program, workplace health promotion, hospital employee participation, hospital employee health, motivations, barriers, incentives, employee wellness, employee participation, worksite wellness.

A Quality Improvement Initiative: Motivations and Barriers to Hospital Nursing Employee
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Chapter 1

Workplace wellness programs have been defined differently by different sources ranging from the inclusion of a single program or element to a comprehensive set of components that include programs or resources that cover a broad spectrum of wellness domains. According to Batorsky, Taylor, Huang, Liu, and Mattke (2016), workplace health promotion programs have been associated with a range of several beneficial health outcomes. Likely, because of these perceived benefits, the number of employers offering workplace wellness programs has increased from 27 percent in 2006 to more than 75 percent in 2013 (Batorsky et al., 2016). According to Bailey, Coller, and Porter (2018), workplace wellness interventions that address risk factors for chronic conditions such as physical inactivity, poor nutrition, and obesity have also been shown to positively influence worker absenteeism, stress, and job satisfaction.

Goetzel and Ozminkowski (2008) identified five key components of a comprehensive workplace wellness program adapted from the *Healthy People 2010* initiative: (1) health education, (2) links to related employee services, (3) supportive physical and social environments for health improvement, (4) integration of health promotion into the organization's culture, and (5) employee screenings with adequate treatment and follow up. These work-based initiatives focus on health promotion and disease management, and are aimed at improving employee satisfaction, productivity, and health, and they ultimately yield returns on investments for the organization (Goetzel & Ozminkowski, 2008).

An increased participation in workplace wellness programs has many health benefits including a decreased burden of chronic diseases. According to Mujtaba and Cavico (2013), the

dramatic increase of chronic diseases has become a major burden in the United States (U.S.) which is leading to a decreased quality of life, and severe disabilities, as well as death. As early as 2006, Warburton, Nicol, and Bredin categorically stated there was evidence that regular physical activity contributes to the primary and secondary prevention of several chronic diseases and is associated with a reduced risk of premature death.

Person, Colby, Bulova, and Eubanks (2010) stated that workplace wellness programs have been shown to provide numerous benefits for employees including: weight reduction, increased physical fitness, stamina, decreased stress, while employers have experienced reduced healthcare costs, increased productivity, reduced incidences of sickness, absenteeism, improved recruitment, decreased turnover rates, and enhanced employee morale. According to the Centers for Disease Control and Prevention (CDC), a *culture of health* in the workplace requires that employee health and safety be valued, supported, and promoted through workplace wellness programs, policies, benefits, and environmental supports (CDC, 2018b).

On behalf of the American Heart Association, Fonarow et al. (2015) endorsed the findings that employees who believe that a culture of workplace wellness is strongly supported and encouraged by leadership may be more likely to participate in wellness programs. Succinctly stated, there is a greater need for workplace wellness program champions at all levels within an organization (Fonarow et al., 2015).

Pronk (2015) emphasized that workplace wellness matters for the prevention of premature deaths, chronic diseases, productivity loss, excessive healthcare costs, loss of income or family earnings, and other social and economic concerns. Data from the *2018 Physical Activity Guidelines Advisory Committee Scientific Report* (PAG, 2018) suggested that from 1998 through 2015, the prevalence of individuals, both men and women, who reported doing no

leisure-time with moderate-to-vigorous physical activity had declined from about 40 percent to 30 percent. Pronk (2015) claimed workforce fitness is important to both employers and workers, yet the overall fitness level of the workforce in the U.S. has appeared to be in decline during the past five decades.

On behalf of the American College of Occupational and Environmental Medicine (ACOEM), Hymel et al. (2011) suggested that health is not only of great value to individuals and populations but also to businesses and industry. The workplace offers unique resources and infrastructure for addressing the health problems of the overall U.S. population which creates an opportunity for a *culture of health* in the American workplace.

Pronk (2015) suggested, physical fitness levels of the workforce, directly or indirectly, impact employers, shareholders, employees, family members, the larger community, and the society as a whole. Further, sedentary occupations have become increasingly prevalent over the past several decades and effective workplace wellness programs are needed to counteract the adverse health impacts of prolonged sitting and sedentary behavior (Pronk, 2015).

Clinical Needs Assessment and Significance

Research findings have suggested that the prevalence and the consequences of physical inactivity should be recognized (Kohl et al., 2012). Increasing the number, quality, and types of health promotion programs at workplaces, especially smaller worksites, remains an important public health goal (Goetzel, Roemer, Liss-Levinson, & Samoly, 2008). A core objective of *Healthy People 2020* provides a comprehensive set of 10-year national goals and objectives for improving the health of all Americans with the attainment of high-quality, longer lives free of preventable diseases, disability, injury, and premature death (USDHHS, 2010). Prior to that *Healthy People 2010* had identified two major worksite-specific objectives. The first goal was

that most employers (75 percent), regardless of size, would offer a comprehensive employee health promotion program, while the second objective suggested that most employees (75 percent) would participate in employer-sponsored health promotion activities. These national initiatives along with incentives created under the 2010 Affordable Care Act (ACA) emphasized the urgency, clinical need, priority, and significance of workplace wellness programs (CMS, 2012). Jonsdottir, Borgesson and Ahlborg (2011) declared that healthcare providers were key actors in promoting healthy lifestyles to their patients and others, thus they identified the need to find strategies to engage healthcare providers in activities that promote their own health.

According to the CDC's Workplace Health Model (CDC, 2016), the workplace is an ideal setting for health protection, health promotion, and disease prevention programs. Green, Cheadle, Pellegrini, and Harris (2007) emphasized that the workplace offers an ideal setting for environmental, policy, interventions relating to health promotion, and to adopt more healthy lifestyles because most American adults spend half of their waking hours on their jobs. On average, Americans working full-time spend more than one-third of their day, five days a week at the workplace (CDC, 2018b). Goetzel and Ozminkowski (2008) observed that workplaces are to adults what schools are to children as most working-age adults spend a substantial portion of their waking hours in the workplace. Owen, Sparling, Healy, Dunstan, and Matthews (2010) claimed that the shift from workplaces being physically demanding to one with few physical challenges has been sudden.

Sedentary behaviors and physically inactive lifestyles have contributed to the prevalence of chronic diseases and in turn to the ballooning cost of U.S. healthcare (Pronk, 2015; Buttorff, Ruder, & Bauman, 2017). According to the Centers for Medicare & Medicaid Services (CMS), chronic diseases were the leading causes of death and disability which contributed to an annual

healthcare spending of \$3.3 trillion in 2016 (CMS, 2018). Most chronic diseases are common, costly, preventable, and related to a fairly short list of risk behaviors: tobacco use and exposure to secondhand smoke, poor nutrition, lack of physical activity, and excessive alcohol use (CDC, 2018a).

According to Loprinzia and Beets (2014), healthcare providers play an integral role in promoting health-enhancing behaviors such as the promotion of physical activity. However, Blake, Malik, and Batt (2011) asserted that healthcare providers fail to meet the guideline levels of physical activity despite their knowledge associated with health promotion and health behaviors. In addition, healthcare professionals who were less active were also more likely to report poor health and worse sleep patterns than their active counterparts (Kwasnicka et al., 2017). Lobelo and de Quevedo (2016) found consistent evidence supporting the notion that physically active healthcare providers (physicians, nurses, etc.) are more likely to provide better, more credible, and motivating preventive counseling to their patients on physical activity and there is a significant positive association between providers' own personal physical activity habits and counseling frequency, self-efficacy, and health promotion practice.

Truven Health Analytics used the Truven Health IBM MarketScan® database (a repository of over 245 million de-identified patients' healthcare claims representing the healthcare experience of large number of Americans) and studied health-risk and healthcare utilizations among 350,000 hospital employees and their dependents from more than 200 hospitals and compared them with 12 million general workforce employees and dependents (Taylor & Bithoney, 2012). Hospital employees were less healthy than the general workforce, cost 9 percent more in healthcare spending, had higher utilization of emergency department, and hospital workers and their dependents were 5 percent more likely to be hospitalized than the

overall U.S. workforce. The hospital employees were more likely to be diagnosed with asthma, obesity, and depression, and those burdened with chronic conditions were more likely to be in the “at risk” or “struggling” or “in crisis” categories compared to the overall U.S. workforce.

Luckhaupt, Cohen, Li and Calvert (2014) found that healthcare settings were linked to higher obesity prevalence in their workers. Similarly, Loprinzia and Beets (2014) and Kwasnicka et al. (2017) found that healthcare professionals often exhibit unhealthy lifestyle behaviors with work-related stress identified as the most frequently-cited reason. Healthcare professionals report that hospitals are a highly stressful work environment, and irregular shift work often places an additional strain on hospital employees (OSHA, 2018).

Based on numerous literature reviews such as *The Truven Health Analytics* research study by Taylor and Bithoney (2012), Blake et al. (2011), Kwasnicka et al. (2017), Lobelo and de Quevedo (2016), Luckhaupt et al. (2014), and Loprinzia and Beets (2014); there is wide support for a need for health promotion and workplace wellness programs for hospital employees.

Although, there are workplace wellness programs for hospital employees, there is a dearth of relevant studies that focus on the determinants of participation in workplace wellness programs, and even fewer studies have reported on determinants of participation of those programs within the hospital settings. Most of the published data on workplace wellness program participation merely describe participation rates and demographic data and very few studies describe the characteristics of the program participants. Fitzgerald, Geaney, Kelly, McHugh, and Perry (2016) pointed out that barriers of workplace cultures, structures, and resistance to change need to be considered and overcome for increased participation in workplace wellness programs.

There is general agreement that hospital-based workplace wellness programs provide valuable benefits to hospital employees, however, there are gaps in knowledge regarding their value from the hospital employees' perspectives. This is also true for established workplace wellness programs from two large state and county funded public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S. Each of the two selected hospitals offer various programs which provide different types of benefits, however the eligible employees have not had an opportunity to express their perceptions regarding these programs.

The state funded hospital's program includes medical/dental/vision/pharmacy insurance coverages, annual health risk assessments (HRAs), free flu shots to employees and their family members annually, and a monthly electronic newsletter that covers wellness programs, such as: *Be Active, Eat Right, Stress Less, and Be Healthy*. The county funded hospital's program includes medical/dental/vision/pharmacy insurance coverages, HRAs, free flu shots to employees and their family members and routine annual physical checkups. The county hospital also launched the SPARKS Peer Support Program, which provides confidential and non-judgmental counseling support for employees who have experienced a stressful patient-related event.

Both the state and county funded hospitals promote annual heart walks, in collaboration with the American Heart Association, free blood pressure (BP) and body mass index (BMI) screenings, health consultations with cardiologists and nutritionists, a 1-mile walk to test fitness levels, and heart-healthy food samples and recipes. Both hospitals offer discounted memberships in various fitness centers and programs in Worksite Weight Loss, Tobacco Cessation, Diabetes Prevention, Workplace Violence Education, employee assistance programs, a 24-hour nursing helpline, and monthly wellness newsletters to promote employee health and wellness.

There are no known incentives for participation and no penalties are imposed for non-participation in the two selected hospitals. The investigator is unaware of any protocol to measure how the workplace wellness programs are perceived by the hospital employees. Based on the review of literature and the websites of the two selected hospitals, there is a need to identify the perceived motivations for and barriers to participation or non-participation faced by hospital nursing employees in the hospital-based workplace wellness programs.

Objectives of the Project

The objectives of this evidence-based quality improvement (QI) study project were:

1. To identify how the hospital-based workplace wellness programs of the two selected large public teaching hospitals are perceived by the hospital nursing employees.
2. To develop an interventional survey instrument that supported the collection of data for the above objective.

Purpose of the Project

The purpose of this evidence-based quality improvement (QI) study project was to identify the characteristics that are associated with participation in the workplace wellness programs among hospital nursing employees. The characteristics included the demographics of the eligible survey participants and their perceptions of the available benefits to participate or not participate in the hospital-based workplace wellness programs. More specifically, the purpose was to identify the perceived motivations and barriers faced by hospital nursing employees for participation in hospital-based workplace wellness programs. Ultimately, the perceptions of the participants of this QI study project regarding their motivations for and barriers to participation provided a basis for increased participation in the established hospital-based wellness programs at the two selected public hospitals located in a metropolitan city in the Southwestern U.S.

Problem Statement

What are the perceived motivations and barriers faced by hospital nursing employees for participation or non-participation in hospital-based established workplace wellness programs?

PICOT Question of Inquiry

What perceived motivations and barriers associated with participation in established workplace wellness programs can be identified through a *wellness participation survey* administered to hospital nursing employees?

Population	(P)	Hospital nursing employees
Interventions	(I)	Implementation of the ' <i>Wellness Participation Survey</i> '
Comparison	(C)	Status
Outcome	(O)	Identification of perceived motivations and barriers associated with participation in established workplace wellness programs
Time	(T)	March 2019

Explanation of Key Terms

Workplace wellness programs: A general definition of a workplace wellness program is “an employment-based activity or employer-sponsored benefit aimed at promoting health-related behaviors (primary prevention) and disease management (secondary prevention) (Mattke, Schnyer, & Van Busum, 2012). The CDC (2018b) defines workplace wellness programs as a coordinated and comprehensive set of health promotion and protection strategies implemented at the workplace that includes programs, policies, benefits, environmental supports, and links to the surrounding community designed to encourage the health and safety needs of all employees. An added benefit of workplace wellness programs is a development of a *culture of health*.

Render (2011) provided a definition of *culture of health* as one that values health and fitness in the workplace and has policies, processes, incentives, and programs to create a healthy workforce and work environment, that reflects an integrated, strategic approach that encompasses much more than a list of programs or classes.

Program Participation: Program participation can range from participation in an established workplace wellness program at a single point in time, such as completion of a Health Risk Assessment (HRA) or a sustained and continuous participation that is ideal for lasting change in healthy behavior (Goetzel & Ozminkowski, 2008).

Motivations for participation: Motivations for participation are considered determinants of goal attainment (Dishman, McIver, Dowda, Saunders, & Pate, 2015). Intrinsic or autonomous motivations may influence participation for its own sake, or for feelings of accomplishment, satisfaction, and enjoyment. Extrinsic or controlled motivations include external circumstances that are related to the need to gain approval from others, praise, fame, or money, to feel worthy, or to ease guilt, or by coercion with rewards or punishments. Amotivation, or the lack of motivation, denotes the absence of an intent to be active (Dishman et al., 2015).

According to the Oxford English Dictionary, incentives are “things that motivates or encourages someone to do something.” Madison, Schmidt and Volpp (2013) stated that ACA continued along the health incentives path forged by the Health Insurance Portability and Accountability Act of 1996 (HIPAA) with which employers have long been interested in tying rewards and penalties (positive and negative incentives) to health-related behaviors and outcomes.

Incentives (positive): An anticipated positive or desirable reward designed to influence the performance of an individual or group in making certain choices or behaviors (CDC, 2018b).

In the ‘carrot and stick’ approach prescribed by Mujtaba and Cavico (2013), carrots are commonly viewed as positive incentives. They are the most popular form of incentives (financial, merchandise, health premium reductions) for workplace health programs (Mujtaba & Cavico, 2013).

Incentives (negative): An anticipated negative or undesirable consequence designed to influence the performance of an individual or group in making certain choices or behaviors (CDC, 2018b). In the ‘carrot and stick’ approach, sticks are disincentives commonly viewed as a negative or undesirable consequence designed to influence the performance of an individual or group (Mujtaba & Cavico, 2013). Typically, these involve some sort of penalty or punishment, such as a premium surcharge.

Barriers to participation: Barriers are defined as factors that impede behavioral change (participation) in a wellness program (Verweij et al., 2012). According to Sherar et al. (2009), perceived barriers to physical activity are defined as factors that make it difficult or completely inhibit participation. Barriers can be personal or situational in nature. Personal barriers are typically defined as intrapersonal barriers, which are factors within an individual that prevent activity (e.g., lack of motivation). Situational barriers can be further delineated into the categories of interpersonal, institutional, community, or public policy (Sherar, et al., 2009).

Hospital nursing employees: For the purposes of this quality improvement (QI) study, hospital nursing employees are defined as Advanced Practice Providers (comprised of Advanced Practice Registered Nurses) and Registered Nurses engaged in clinical services who are employed at the two selected large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S.

Chapter 2

Review of Literature and Theoretical Framework

Review of Literature

The review of literature describes the search process, information relating to the sources of literature review, followed by a broad overview of the workplace wellness programs in general, and hospital-based workplace wellness programs in particular. Further review was conducted regarding the determinants of employee participation in workplace wellness programs with a focus on motivations for and barriers to participation in hospital-based workplace wellness programs.

Literature Review Search Process

A search was performed using Texas Woman's University (TWU) online library to search scholarly peer-reviewed, evidence-based, academic journal articles, as well as authoritative governmental sources, book chapters, reports from non-governmental organizations, thesis and dissertations. Unpublished and informally published works such as internet message boards, social media, wikis, blogs, etc. were excluded. The electronic databases searched included Cumulative Index of Nursing and Allied Health Literature (CINAHL) Complete with Full Text, MEDLINE with Full Text (Ovid and EBSCO), PubMed (National Library of Medicine's database), and Nursing & Allied Health Database (ProQuest).

In order to develop the survey instrument that would support the collection of data for the primary objective of this QI study project, the review of literature drew on evidence-based and published literature from topics related to *workplace wellness, workplace health promotion, hospital employee health, motivations, barriers, incentives, facilitators, employee participation in worksite wellness, and employee wellness*. Various combinations of these keywords were used

in multiple online library databases. Medical Subject Headings (MeSH) terms in PubMed database used were: *wellness program*, *health promotion*. Likewise, Boolean operators OR were used to broaden the search, AND/NOT were used to narrow the search. Wildcards, limiters, filters, and truncations were also used to narrow the search. The searches were limited to materials written in English. As there was a dearth of relevant material that addressed motivations and barriers to participation in hospital-based workplace wellness programs, there was a need to expand the time range of the search from 2000 to the present.

The initial combinations of search terms *workplace wellness program* AND *hospital* using the CINAHL, MEDLINE, PubMed, and ProQuest databases yielded 12, 22, 435, and 3354 results, respectively, in full-text format from the years 2000 to 2018. The most abundant results were generated from ProQuest and PubMed electronic databases. The results varied from year to year between 2000 and the present but the largest yield of materials were published in 2016, 2017, 2006, and 2008, in that order, respectively. Each database had different search methodologies; therefore, variations of other keywords listed above were also used in different combinations and permutations to acquire the most relevant results. Reference lists from the acquired articles were also used as literature sources to discover additional pertinent information. In addition to the TWU library services, literature was acquired through open access sources like Google Scholar and the Public Library of Science (*PLOS*).

After the broad initial search, the results were narrowed down to a handful of published materials that were relevant to this quality improvement study project's PICOT question of inquiry. The following sources provided valuable information: *The American Journal of Health Promotion*, *The American Journal of Preventive Medicine*, *The Annual Review of Public Health*,

BMC Public Health, The Centers for Disease Control and Prevention, The Journal of Occupational and Environmental Medicine, and Preventive Medicine.

Workplace Wellness Programs

Goetzel et al. (2008) introduced policy recommendations which characterized workplace wellness programs as employer-sponsored initiatives directed at improving the health and well-being of workers. Families were often included in the initiative. Goetzel et al. (2008) posited that the workplace presented an ideal setting for introducing and maintaining workplace wellness programs for the following reasons:

- Workplace programs can reach large segments of the population;
- Workplaces share a common purpose and common culture;
- Workplace communication with workers is relatively straightforward;
- Workplace offers social and organizational support to change unhealthy behaviors;
- Workplaces can introduce policies, procedures and practices to promote health;
- Workplaces can offer financial or other incentives to gain program participation; and
- Workplaces tend to foster long-term relationships with their employees; as a result, the duration of interventions can be longer, making it more probable that employees will attain sustained health benefits (Goetzel et al., 2008).

The CDC (2016) defined worksite wellness programs as an organizational policy and/or health promotion activity designed to support health behaviors and improve health outcomes. Programs should include medical screenings, health fairs, health education, coaching, and onsite fitness programs (CDC, 2016). In 2016, the CDC estimated that since 63 percent of the U.S. adult population was employed; workplaces would provide an excellent opportunity to expose a large number of American adults to health promotion programs.

One of the most common components of a workplace wellness program offered by employers or insurance providers is an HRA, which is typically a questionnaire that asks employees to provide information such as personal and family medical history, current diagnosed symptoms, healthcare utilization, use of preventive and screening services, as well as lifestyle behaviors such as diet, physical activity, and tobacco and alcohol use (Draper, Tynan, & Christianson, 2008). The HRA is often used as a gateway to other worksite wellness programs. According to Neyens and Childers (2017), wellness programs are typically voluntary with incentives, and they are often focused on exercise. It has been demonstrated that participation in a workplace wellness program can have a positive impact on physical activity, nutrition, and chronic disease factors, such as weight, BP, BMI, and tobacco and alcohol use among program participants.

Fonarow et al. (2015) reviewed the science supporting workplace wellness on behalf of the American Heart Association and concluded that well-designed, comprehensive workplace wellness programs have the potential to improve cardiovascular health and to reduce mortality, morbidities, and disabilities resulting from cardiovascular diseases and strokes. For this reason, the American Heart Association promotes the adoption of science-based comprehensive workplace wellness programs, as well as the improvement of wellness program quality and workforce health outcomes. Similarly, the ACOEM advocates the use of the workplace to affect health behaviors (cafeteria/food selection, ergonomic office design, landscaping, and the use of stairways) including the utilization of financial and other incentives to gain participation in workplace wellness programs (Hymel et al., 2011).

According to Cook (2012), employers want healthy employees in order to enhance productivity, promote staff camaraderie, decrease absenteeism, and improve morale. Similarly,

Mujtaba and Cavico (2013) stated that employers are looking for ways to reduce healthcare costs and to enhance the health and productivity of their employees. One perceived beneficial measure is in the form of “*wellness*” programs in the workplace, which encourage, or at times attempt to “force,” employees to lose weight, stop smoking, reduce health risks, and overall improve their health (Mujtaba & Cavico, 2013).

The Kaiser Family Foundation’s 2018 Employer Health Benefits Survey (KFF, 2018) found that businesses continue to show interest in programs that help employees identify health issues with HRAs, biometric screenings, and manage chronic conditions. Large firms offer at least one wellness program in at least one of these areas: smoking cessation; weight management; and behavioral or lifestyle coaching (KFF, 2018). In 2013, 40 percent of companies said that cultivating employee health and well-being was a central part of their healthcare strategy (Towers Watson/NBGH, 2012).

A 2011 survey by OptumHealth indicated that 45 percent of large companies plan to increase their workplace wellness program spending. Lack of employee engagement (i.e., low program participation) was cited by 57 percent of large employers as the biggest obstacle to changing employees’ health behaviors (Towers Watson/NBGH, 2012). According to the Gallup Organization (2013), employee engagement could be bolstered by employee well-being, and organizations that find ways to engage their employees and improve their well-being reap the benefits of increased productivity and performance, decreased absenteeism, and enhanced employee quality of life.

Workplace Wellness Programs in Hospital Setting

In 2010, the American Hospital Association (AHA, 2011) focused on “*wellness*” by identifying successful practices in hospital employee health and wellness and expanding those

programs to their communities. An AHA (2011) survey report featured seven recommendations including action steps and examples, for hospitals seeking to create sustainable wellness models: (1) serve as a role model of health for the community, (2) create a *culture of healthy living*, (3) provide a variety of program offerings, (4) provide positive and negative incentives, (5) track participation and outcomes, (6) measure for return on investment, and (7) focus on sustainability.

Sharma et al. (2016) studied the employee wellness policies and practices on how each of the five large hospital systems in Southwestern U.S. supported their employees' health behaviors. Sharma et al. (2016) identified gaps that could be addressed with minimal costs to positively impact hospital employee health and well-being. The four recommendations identified were: (a) implementation of policies around increasing healthy food access and decreasing access to unhealthy foods; (b) implementation of policies that support employee physical fitness onsite and offsite; (c) implementation of performance objectives to monitor worksite health improvement with regard to hospital employee wellness initiatives and outcomes; and (d) implementation of administrative policies requiring that only healthy food and beverage options be served at organization-sponsored meetings (Sharma et al., 2016). Water infused with fresh fruits is an example of an effort to reduce the intake of sugar-sweetened beverages (SSB) and to increase the intake of water (Isoldi & Dolar, 2015).

An excellent and comprehensive workplace wellness program to improve the health of hospital employees helps to stimulate a *culture of health* that improves the quality of life, reduces medical costs, and attracts and helps retain a talented workforce (O'Donnell & Bensky, 2011). Anderko et al., (2011) declared that the workplace is a microcosm of society and has the potential to improve health substantially in the U.S. by building a *culture of health* that facilitates healthy lifestyles for employees. This culture can be created when the employer provides: (1)

financial and organizational support for evidence-based health promotion interventions; (2) consistent communication with workers that encourages positive health behaviors; (3) social and organizational supports from peers and supervisors; (4) policies, procedures, practices, and organizational norms that support a healthy lifestyle (for example, access to healthy foods, drinks, and physical activity or banning smoking on company grounds); (5) financial or other types of incentives for participation in health improvement activities; and (6) a common purpose that is dedicated to a healthier workforce (Anderko et al., 2011).

In 2011, the AHA presented findings and best practice recommendations based on lessons from Johnson & Johnson, Blue Cross Blue Shield of K.C., and survey results from 876 hospitals which indicated that 76 percent of hospitals promoted worksite wellness programs through health fairs, 70 percent offered HRAs, and 66 percent used positive incentives to encourage participation such as health insurance premium discounts or gift cards (AHA, 2011).

Again in 2016, the AHA stated that a *culture of health* can be created by hospitals and health systems by providing leadership, and hospital employees can be role models for health and *wellness* in their communities. Developing health and *wellness* strategies and programs at hospitals helps to establish an environment that provides support, resources, and incentives for hospital employees to serve as *role models of health* (AHA, 2016).

Determinants of Participation in Workplace Wellness Programs

Motley and Prelip (2011) measured attitudes regarding health and healthy behaviors from 705 participants in a cross-sectional study. A 28- question survey was developed to measure employees' attitudes and behaviors regarding health, wellness, job stress, and spirituality. Exercise, stress management, and weight control were the top three themes that participants chose to work on. The top three incentives were worksite gym, personal coach, and discounts in

exchange for exercise. Forty percent of the respondents identified some type of stress, often related to their job and job responsibilities while more than forty percent of the respondents were not actively exercising, reducing stress, getting enough sleep, and eating a well-balanced diet as they should, respectively. The findings also revealed that those who were spiritual /religious and in a supportive community reported a higher engagement in health behaviors, such as exercise, nutrition, and healthy weight.

Render (2011) reported that strong determinants of participation in a workplace wellness program are positive incentives, both financial and non-financial, which encourage employee participation and improve outcomes: “Incentives do matter. Positive incentives are a good first step to get people engaged and start the return on investment” (p. 15).

Grossmeier (2013) conducted a retrospective multivariate analysis study by focusing on three levels of participation: enrollment, active participation, and program completion and 11 predictors of employee engagement in a workplace wellness programs, specifically a telephone health coaching program. She found in her literature review that much of the existing research on participation focused on group level analysis rather than individual. Grossmeier (2013) found the most significant individual predictor of participation was age and gender (older and female), followed by lifestyle risk level, and the most significant organizational predictors of participation are monetary incentives and comprehensive program design. In conclusion, health promotion, expanding access, enhancing incentives, and the introduction of intrinsic motivations could increase participation in workplace wellness programs.

Motivations for Participation

According to Kwasnicka et al. (2017), knowledge alone regarding the health benefits of exercise is not a significant motivation to change exercise behavior. Batorsky et al. (2016) stated

that in order to encourage participation in workplace wellness programs, researchers have recommended the use of financial incentives as part of the participation promotion effort. According to Hill-Mey, Merrill, Kumpfer, Reel, and Hyatt-Neville (2013), these incentives can include financial bonuses, reduction in insurance premiums, higher health savings accounts (HSA), paid time off from work, t-shirts, gym bags, gift cards, and discounts but most researchers believe that financial incentives are most effective. They also concluded that HRAs and biometric screening effectively motivate wellness program participation.

A study by Mattke et al. (2013) suggested that incentives, which typically take the form of financial rewards, such as discounts on gym memberships or cash payments for participation can be a significant motivation. Mattke et al. (2013) suggested that employers have a strong interest in the use of incentives to encourage participation in workplace wellness programs because of low participation rates and evidence suggesting that incentives can motivate healthy lifestyles. The majority of workplace wellness participants expressed some intrinsic motivation as a facilitator to participation (Mattke et al., 2013), however, small monetary incentives did not motivate them to engage in programs. In 2018, Transamerica Center for Health Studies (TCHS) reported that workplace wellness programs that involve a health improvement process or a change of healthy behaviors such as eating healthier food, increasing physical activity, or decreasing sedentary behavior are not amenable to financial incentives (TCHS, 2018).

Churchill, Gillespie, and Herbold (2014) used an anonymous survey to examine types of workplace wellness program offerings and incentives that had the highest participation rates among 721 individuals working in higher education, for-profit corporations, and healthcare organizations. Questions included background information, current participation in a wellness program, readiness to change, and current health behaviors and risk factors. Sixty percent of the

respondents were likely to participate or were already participating in offsite gym memberships, onsite gym memberships, personal training, and better food options in the cafeteria. Healthcare industry workers were more likely to participate in an onsite gym when compared to employees working in the higher education industry ($p = .001$). In addition, younger employees were more likely to eat healthier in the cafeteria, participate in the offsite gym membership, and preferred group classes. All incentives, except for nonmonetary incentives, provided motivation 80 percent of the time to the employees (Churchill et al., 2014).

According to Schmidt (2013), both types and levels of incentives matter on effectiveness as well as on ethical grounds, as it cannot be assumed that it is equally easy for all to meet health targets to secure a benefit or avoid a penalty. Workplace wellness programs should be designed to engage, not to frustrate those most in need of health improvement and employee involvement in determining incentive types and levels, and explicit justification for program design can help both employers and employees to reap benefits (Schmidt, 2013).

Batorsky et al. (2016) stated that employers have begun to use financial penalties to encourage participation. As an example, Ballard (2012) reported that the Cleveland Clinic penalized non-participants of a workplace wellness program with a 21 percent increase in their health insurance premiums. Conversely, those employees who met their goals enjoyed the lowest increase in premiums.

Barriers to Participation

Bailey et al. (2018) argued that most businesses are implementing wellness programs with limited policy support, which is a barrier. The successful implementation of workplace wellness programs broadly, and physical activity initiatives specifically, are achievable through

leadership buy-in, employee input, and policy supports, along with highlighting the economic benefits for businesses (Bailey et al., 2018).

Linnan et al. (2008) conducted a nationally representative, cross-sectional telephone survey of workplace health promotion programs stratified by worksite size and industry type, and found that the most commonly reported barriers or challenges to the success of workplace wellness programs were lack of employee interest (63.5 percent), staff resources (50.1 percent), funding (48.2 percent), participation on the part of high-risk employees (48.0 percent), and management support (37.0 percent). Workplaces with a dedicated wellness staff person onsite were more likely to have a comprehensive health promotion and worksite wellness program.

Person et al. (2010) identified barriers that prevent employee participation in wellness programs by using a qualitative review of interviews of 50 subjects at a university setting. The most commonly reported barriers to participation were insufficient incentives, inconvenient locations, time limitations, not interested in topics presented in the wellness program, undefined reasons, schedule, marketing, and health beliefs. The majority of participants found classes to be the most beneficial component of the wellness program which centered on healthy eating, cooking, and shopping habits. Person et al. (2010) concluded that employee health and well-being can be improved by reducing barriers to participation and addressing employee preferences.

According to Lemon et al. (2010), the implementation of hospital-based wellness programs is challenged by round-the-clock staffing and a lack of flexibility in the schedules of clinical employees which make it difficult for many hospital employees to engage in workplace wellness programs. O'Donnell and Bensky (2011) identified how nurses are challenged in self-care because of exhaustion, burnout, and their caregiver psyche when compared to physicians

who are challenged because of a workaholic nature and a perception that they can manage their own health issues. The high stress levels reported by 16.3 percent of respondents in a Mayo Clinic study (Clark et al., 2011) made the case for a greater need of workplace wellness program interventions, yet at the same time demands of the job did not necessarily allow for time out from the workday to participate in any self-care program.

A focus group assessment conducted by Hill-Mey et al. (2013) cited the following as the greatest barriers to participation in workplace wellness programs: time restrictions, feeling that the program was a low priority, distance problems, professional and personal responsibilities getting in the way, not enough incentives, inconvenient locations for participation in biometrics, scheduling, weak program communication, and confidentiality concerns with strangers calling and asking questions about health.

Bright et al. (2012) found that employees noted work schedules (63.7 percent), being too busy at work (40.2 percent), and not feeling like it was feasible to leave work to attend a wellness activity (18.2 percent) as barriers to participation. TCHS (2018) listed the following as critical barriers to participation: employee burnout, long hours at work, nature of work, having a second job, and wellness activities not being appealing or enjoyable. Clancy, Stroo, Schoenfisch, Dabrera, and Ostbye (2018) concluded that workplace wellness programs may be improved by being more flexible around participants' schedules and changing needs, by increasing access to affordable, convenient exercise facilities, and by implementing institutional changes that encourage healthy eating and physical activity during the workday.

Conclusion

The review of literature indicated that researchers have identified motivations for and barriers to participation in workplace wellness programs in general and specifically within the

hospital employment setting. The provision of financial incentives, availability of on-site gymnasiums, use of gymnasiums during break times, indoor/outdoor walking trails, premium discounts, lower deductibles, subsidized health club membership, and higher health savings accounts (HSA) are examples of motivations for participation. Long and odd working hours and shifts, work-related stress, family obligations, non-availability of gym at worksite, distance between workplace and off-site gymnasium, lack of financial rewards, concerns about privacy and security of personal health information, and lack of comfort in using internet-based wellness services are examples of barriers to participation. As the goal of this QI study project was to identify the perceived motivations for and barriers to participation in hospital-based workplace wellness programs faced by hospital nursing employees, the results of this literature review were intended to support the development of the survey instrument named: *Wellness Participation Survey*.

Theoretical Framework

The theoretical framework upon which this QI initiative was based was the Transtheoretical Model (TTM), developed by Prochaska and DiClemente in the 1970s and 1980s, that has been used to measure behavioral readiness for change (Prochaska, & DiClemente, 1983). The model classifies individuals according to their readiness to adopt a healthy behavior. The stages of change are: *pre-contemplation* (unaware, not intending to take action in the next six months); *contemplation* (intending to change in the next six months); *preparation* (intending to take action in the next month); *action* (actively modifying habits within the past six months); *maintenance* (sustaining new, healthier habits for more than six months); and *termination* (the person has no desire to continue unhealthy behaviors). According to Prochaska and DiClemente (1983), movement through these stages does not always occur

linearly but rather cyclically because many individuals have to make several attempts at behavior change before their goals are realized.

The TTM has been revised to include the adoption of preventive health behaviors, stress reduction, depression, and obesity reduction programs (Prochaska, Johnson, & Lee, 1998). The use of TTM focuses on helping individuals identify when their behaviors need to be changed to improve their health. From a general health promotion perspective, if a modifiable risk factor emerges from an assessment of a population's motivational readiness, this should be the focus of future interventions, focusing on those most ready for action (Prochaska et al., 2008).

According to Aldana (2018), people who exercise regularly are in maintenance stage and they are satisfied with the intrinsic rewards (able to sleep better, healthy weight, or better handling of stress). People in maintenance stages do not depend on extrinsic rewards; instead they are motivated by intrinsic rewards. People who are in the action stage are motivated to adopt a new health behavior for an extrinsic reward; like cash or gift award or some form of an incentive. The extrinsic rewards are used to get people started until they recognize and enjoy the intrinsic rewards that come along with a healthy lifestyle. When an employee starts to enjoy the intrinsic benefits of their healthy behavior, they are more likely to adopt those behaviors for life. Extrinsic rewards or incentives are usually not required for people if they fall into the maintenance stage to maintain a healthy behavior, but extrinsic incentives are helpful for people in the action stage of behavior change to nudge them into the maintenance stage (Aldana, 2018).

Schmidt (2013) posited that workplace health programs can lead to change at both the individual (employee) and the organization (employer) levels. According to Mujtaba and Cavico (2013), for individuals, workplace health programs have the potential to impact an employee's health; such as their health behaviors; health risks for disease; and current health status. For

organizations, workplace health programs have the potential to impact areas such as healthcare costs, absenteeism, productivity, recruitment, retention, culture, and employee morale (Mujtaba & Cavico, 2013).

According to Prochaska et al. (2008), the TTM is a continuous cycle in which participants are in different stages of change; intervention strategies are directed at the stage that will move the participant to the next stage. Participants may not be ready to move to the next stage or they may regress to earlier stages. In those situations, it is the role of the interventionist to use motivational interviewing to help the participant advance to the next stage when it is warranted; however, the participant must be ready to change to make lasting behavioral changes with lifestyle interventions (Prochaska et al., 2008).

The TTM has been used to support and measure readiness for change in health behaviors. In the case of workplace wellness programs, employees are encouraged to adopt and maintain healthy behaviors. Not everyone is naturally inclined to make lasting changes in health behaviors. Thus, incentives may be introduced in the form of motivations to remove barriers for progression through a series of stages of change. Extrinsic rewards may be used to motivate hospital nursing employees to progress along the various stages of change until they recognize and enjoy the intrinsic rewards that accrue with a healthy lifestyle. When employees start to enjoy the intrinsic benefits of their healthy behaviors, they are much more likely to adopt those changes for life. This QI initiative is intended to identify the perceived motivations and barriers that hospital nursing employees face to participate or not participate in an established hospital-based workplace wellness programs using the conceptual framework postulated by the TTM.

Chapter 3

Project Design and Description of Intervention

In this chapter, a description of the project design, details of the development of the intervention instrument which is the survey questionnaire, description of the intervention, description of the population, inclusion/exclusion criteria, sample size and power analysis, implementation of data collection, statistical analysis plans, SWOT analysis, and a bare bones cost-benefit analysis of this quality improvement (QI) study project is discussed.

Project Design

The investigator sought a QI study project to identify the perceived motivations for and barriers to participation in a hospital-based workplace wellness program faced by hospital nursing employees in two large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S. The investigator chose to use a descriptive quantitative study method and developed a survey questionnaire as an interventional instrument (See Appendix E - *Wellness Participation Survey*) to answer the question of inquiry using a set of 16 questions.

This QI initiative was the first step in the collection of data to identify perceptions of availability, motivations for and barriers to participation faced by hospital nursing employees associated with an established workplace wellness program. The overall goal of this QI initiative was to use the findings of this project for future study projects to recommend continuous quality improvement and policy recommendations with regards to hospital-based workplace wellness programs. The Deming's Plan-Do-Study-Act (PDSA) model (Taylor et al., 2014) will be used to guide this process. The first step of the process was to develop a plan to collect the necessary data for this QI study project. This entailed a review of the literature and also a review of the

characteristics of the existing workplace wellness programs of the two selected large public teaching hospitals to develop a survey instrument (Holly, 2014). Following an analysis of the data, the investigator was able to identify the perceived motivations for and barriers to the workplace wellness program participation by hospital nursing employees in the two large state and county funded public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S..

Development of the Survey Instrument

A search for a data collection instrument found no existing survey instrument that would support this QI study project. This indicated that the investigator would need to develop a survey questionnaire (Nieswiadomy & Bailey, 2018) as an interventional instrument. The investigator developed the interventional survey questionnaire instrument named '*Wellness Participation Survey*' (See Appendix E for the *Wellness Participation Survey* questionnaire) after studying the characteristics of the existing workplace wellness programs of the two selected large public teaching hospitals. A review of literature supported the questions that were described as determinants of participation in workplace wellness programs as well as associated motivations for and barriers to participation.

The final survey instrument - *Wellness Participation Survey* – was comprised of 16 questions. The first five questions were related to demographic characteristics which are categorical in nature. There were closed-ended questions with alternatives to choose among “yes,” “no,” and “do not know” answers and checklist type of questions for respondents to check all items that apply. The *Wellness Participation Survey* also included two five-point Likert Scale questions which contains five responses for each item, ranging from “strongly agree” to “strongly disagree.” Scores on each item range from 1 to 5. A score of (1) is for “strongly

disagree,” (2) for “disagree,” (3) for “neutral,” (4) for “agree,” and, finally, (5) to “strongly agree.” The survey instrument is listed as Appendix E - *Wellness Participation Survey*.

An expert panel of six seasoned healthcare research professionals brainstormed, reviewed, discussed, and provided feedback, recommendations, and modifications to the investigator to improve the survey questionnaire instrument. This panel of experts was comprised of a director of nursing research program, a manager of clinical research, a professor of internal medicine at a school of medicine, a university statistician, a seasoned and experienced nurse practitioner who is also an educator at the university level, and a *REDCap* survey administrator.

The *Wellness Participation Survey* questions were developed in order to collect data that related to the demographics of the eligible survey participants and to identify their perceptions of the available program benefits, and the motivations for and barriers to participation in hospital-based workplace wellness programs. The survey instrument was reviewed by an expert panel of six healthcare research professionals. The questions were written in simple English keeping in mind the ease with which the respondents would be able to understand and answer the questions without misunderstandings. Poorly constructed question items were re-written, and the revised version was re-submitted to the expert panel for further evaluation. Additions, deletions, or other changes were made based on the feedback given by the panel of experts. Finally, when no additional modifications, comments, or questions remained, the survey instrument was finalized.

Upon finalizing the survey instrument, the investigator circulated it among the panel of six experts to measure the content validity of the instrument. The panel of six experts were also given copies of this QI study project’s objectives and purpose (Nieswiadomy & Bailey, 2018). The 16-question interventional survey instrument was then scored by the expert panel from zero

to 16 with one point for each question for its appropriateness of the reading level of the respondents, objectives, and the purpose of this quality improvement study project. The result was above 95 percent without exclusion of any items using the Lynn Content Validity Index (Lynn, 1986). The final scores were collected and forwarded to the university statistician for content validity and the results are attached as Appendix F: Survey Instrument - Content Validity Index Summary. The university statistician expressed satisfaction with the results of the Content Validity Index Summary.

Description of the Intervention

The QI study project was administered using an interventional survey questionnaire instrument named '*Wellness Participation Survey*' to hospital nursing employees of two large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S. The survey instrument was designed and developed to accommodate an online data collection platform, *Research Electronic Data Capture (REDCap)*, which is a secure, HIPAA-compliant, web-based solution, that is intended to support data collection and data management strategies for studies (Harris, Taylor, Thielke, Gonzalez, & Conde, 2009). The *Wellness Participation Survey* was used by the investigator to identify the demographics of the respondents, their perceptions of the available program benefits, and the motivations for and barriers to participation in hospital-based workplace wellness programs faced by hospital nursing employees.

Population and Inclusion/Exclusion Criteria

For the purposes of this QI study project, the population of hospital nursing employees included Advanced Practice Providers (which comprises of Advanced Practice Registered Nurses) and Registered Nurses engaged in clinical services who are employed at the selected two

large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S. Other employees classified as non-clinical nursing staff who are not involved in direct patient care and hospital administrative staff were excluded from participation in this quality improvement study project.

A non-regulatory research request on Form Y2 was submitted to the Institutional Review Board (IRB) of the two selected hospitals for approval. An IRB approval as well as performance site approval to conduct study related activities at the two selected hospital sites were received and are listed in Appendix C.

Sample Size and Power Analysis

The determination of the sample size (n) was completed with the help of the university statistician (Olson & Zhao, 2013). To determine the smallest sample size that would be appropriate to detect the outcome of the survey questionnaire at the desired level of statistical significance; a power analysis using G*Power 3.1.9 was completed. With a desired level of power set at 0.80, an alpha (α) level at 0.05 (confidence level at 0.95), and a moderate effect size; it was determined that a minimum of 67 respondents would be necessary to ensure meaningful estimation of the power of the study project (Cohen, 1988). It was also decided that the survey questionnaire would be sent to at least 120 eligible participants for the results to be statistically significant. Fisher Exact Probability and Chi-square Tests were employed to test for independence between two categorical variables. Descriptive statistics were used for continuous variables. Mann-Whitney Test was employed to compare perceived availability of wellness program benefits across job descriptions and race/ethnicity in the two selected hospitals. Additionally, Kruskal-Wallis Test was employed to compare perceived wellness program benefits across multiple age groups in the two selected hospitals along with correlation statistic

using Spearman's Rho to determine whether there is a significant age-related trend. A summary table of the proposed statistical analyses of the collected data is listed in Appendix B.

Data Collection

A one-time anonymous '*Wellness Participation Survey*' questionnaire was e-mailed during the month of March 2019 to all on-record eligible advanced practice providers (APP) and registered nurses (RN) engaged in clinical practice. The participants' eligibility was determined by the hospital administration and the nursing leadership of the two selected hospitals to recruit hospital nursing employees with similar practice responsibilities. A transmittal letter soliciting participation in the *Wellness Participation Survey* with instructions and pertinent information including the link to submit the survey electronically using the online *REDCap* platform was sent to the eligible participants (See Appendix D for the transmittal letter).

The completion and return of the survey questionnaire were considered an indication that the respondent had provided informed consent to participate in the QI study project. In order to protect the identity and confidentiality of respondents, no names or identifiable personal information was solicited from the survey participants. The participants of the survey questionnaire were informed of the purpose of the QI study project and they were assured that their responses and identities would be anonymous to the investigator. The respondents were given seven days to complete the survey questionnaire and submit their responses online to the *REDCap* collection website. A reminder email was sent four days after the initial transmittal email urging participation.

The interventional survey instrument for the collection of data developed by the investigator was used as the survey questionnaire and named *Wellness Participation Survey* (Listed as Appendix E). The investigator collected the data by dissemination of the *Wellness*

Participation Survey via the email systems of the two selected public teaching hospitals. The data collection was done electronically through *REDCap* collection website where the survey respondents submitted their responses. A total of 87 responses were received.

Statistical Analysis

The data collected through the interventional survey instrument using the online *REDCap* platform were downloaded in encrypted format and exported to Microsoft Excel. The statistical analysis was performed with IBM SPSS Statistics 25 software for Windows with assistance from the university statistician. To analyze the data, various statistical tools were utilized to identify the demographics of the respondents, their perceptions of the availability of wellness program benefits, and the motivations for and barriers to participation in hospital-based workplace wellness programs faced by hospital nursing employees in two large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S.

Descriptive statistics were used on all 16 questions in the survey instrument to analyze, summarize, and describe the collected data in a meaningful way. Fisher Exact Probability and Chi-square Tests were employed to test for independence on questions one through seven and questions 10, 11, 12, and 14 as they were treated as categorical variables. Question eight was treated as a continuous variable and the sum of the responses to the question was a maximum possible score of 24. Questions nine, 13, 15 and 16, which were Likert Scale data were analyzed using the Chi-square Test. Mann-Whitney Test and Kruskal-Wallis Test was employed to compare perceived availability of wellness program benefits.

Questions 15 and 16 each had 10 possible responses with five continuous levels of Likert Scale data which were treated as continuous variables. The mean scores of each of these items indicated the levels of the agreement. A correlation analysis using Spearman's Rho was

performed to analyze if there was a co-relationship between age and mean perceived motivations and/or barriers to participation in a hospital-based workplace wellness program. Appendix B has a summary table of the proposed statistical analyses of the collected data.

Congruence of Project to Organization's Strategic Plan

The American Hospital Association in its 2011 survey report explicitly focused on the “*wellness*” pillar by identifying successful practices in hospital employee health and wellness and specifically the importance of hospital-based workplace wellness programs given the critical role hospitals play in their communities, and in creating a *culture of health* by being an example of health to the community they serve (AHA, 2011).

Five years later in 2016, the AHA issued another clarion call which stated that a robust health and wellness program should be integrated within the hospital's strategic goals, supported by incentives for participation, and backed by a strong, multi-year financial commitment for sustainability with strong support from senior hospital leadership. Developing health and wellness strategies and programs at hospitals and linking incentives to health and wellness program participation was intended to establish an environment that provides support, resources, and motivations for hospital employees to serve as role models of health (AHA, 2016).

In the U.S., hospitals are the largest employers in most communities, also the largest segment of the health care industry, which is the largest industry in the U.S. economy; therefore, hospitals have the potential to have a significant impact on the well-being of their communities, their employees, and on health promotion (O'Donnell & Bensky, 2011).

The purpose of this evidence-based QI initiative was to identify perceived motivations for and barriers to participation in a hospital-based workplace wellness program faced by hospital nursing employees in two large public teaching hospitals located in the hospital district of a

metropolitan city in the Southwestern U.S. The purpose of this study project aligns with and supports the organizational goals of the two selected hospitals to create a healthier hospital workforce, enhanced employee morale, higher productivity, lower healthcare expenditures, and commitment to prevention activities (CDC, 2018b).

SWOT Analysis

A SWOT analysis in the context of this QI study project consists of the strengths and weaknesses presented to a hospital-based workplace wellness programs and the opportunities and threats it faces within the existing environment. According to the CDC (2018b), an established hospital-based workplace wellness program will help lessen the burden of a number of preventable diseases and also help to create a healthier hospital workforce, with decreased absenteeism, increased productivity, enhanced employee morale, lower healthcare expenditures, partnerships with public health, commitments to prevention activities, and set an example of healthy behavior in the communities the hospitals serve. This QI initiative presents an opportunity to collect data from eligible hospital nursing employees to express their perceptions associated with their perceived motivations for and barriers to participation in the established hospital-based workplace wellness programs of the two selected hospitals.

In the opinion of the investigator, a successful hospital-based workplace wellness program would provide strengths and opportunities while reducing weaknesses and threats to both the hospital employees and the employing hospitals thus creating a win-win environment to: maximize employee participation with minimal cost, engage management with support from hospital leadership, create a *culture of health* in hospitals and hospital employees, provide incentives and motivations and reduce barriers and hurdles to achieve the adaptation of long-

term healthy behaviors in hospital employees such that they are examples of good health to the communities they serve and not just providers of health to the patrons they encounter.

Strength: Both of the selected hospitals have established workplace wellness programs and it is assumed that the hospital administration and the nursing leadership of the hospitals would wish to be able to identify the perceived motivations and barriers the hospital employees face to increase participation in these programs.

Weakness: There is no established protocol for evaluating the existing workplace wellness programs in the two selected hospitals. This leaves many unknowns about the perceived motivations for and barriers to hospital employees' participation in established programs. In some ways, this gap in their knowledge defeats the purpose of having workplace wellness programs that serves the intended hospital employees.

Opportunity: This QI initiative presents an opportunity to identify the motivations and barriers for hospital employee participation in established workplace wellness programs which is good for the employees and their families and equally good for the employing hospitals.

Threat: Since responding to the survey instrument developed for this QI study project is voluntary, it was uncertain how many hospital nursing employees will enthusiastically respond to the *Wellness Participation Survey* to enable collection of data on perceived motivations for and barriers to participation in workplace wellness program which could have been a threat to the purpose of this QI study initiative.

Cost-Benefit Analysis

Cost-benefit analysis is not quite relevant at this point in this study project. This study project is a quality improvement initiative which used a survey questionnaire to identify the perception of the availability of hospital-based wellness programs and the perceived motivations

for and barriers to participation in a hospital-based workplace wellness program faced by hospital nursing employees in two large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S. The findings provide information about the motivations and barriers associated with participation in hospital-based workplace wellness programs.

While a return on investment (ROI) or other business metrics could provide insights into effectiveness, feasibility, or profitability of a hospital-based workplace wellness programs, the investigator believes that there may be other metrics to consider, such as, value of investment (VOI) and cost-effectiveness analysis (CEA) instead of the traditional cost-benefit analysis (CBA). Baxter (2016) suggested that establishing programs that align with the strategic direction of the overall wellness to maximize the health benefits for the employees is the key and not the metric selection. The investigator believes that the key to designing and implementing a workplace wellness program which encourages maximum participation by hospital employees at a minimal cost to the employing hospitals, rests on the leadership who must determine the benefits and values that promote the well-being of hospital employees.

Chapter 4

Results and Outcomes

The Study Question

The purpose of this evidence-based quality improvement (QI) study project was to identify the characteristics that are associated with participation in established hospital-based workplace wellness programs among hospital nursing employees. The characteristics included the demographics of the eligible survey participants and their perceptions of available benefits to participate or not participate in the hospital-based workplace wellness programs. More specifically, the purpose was to identify the perceived motivations and barriers faced by hospital nursing employees for participation in hospital-based workplace wellness programs.

The QI study project included the development of an interventional survey instrument named the '*Wellness Participation Survey*' questionnaire and its administration to selected hospital nursing employees at the two large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S. The survey instrument was developed by the investigator because a search for a data collection instrument found no existing survey instrument that would support this QI study project. The survey instrument was designed and developed to accommodate an online data collection platform, *Research Electronic Data Capture (REDCap)*, which is a secure, HIPAA-compliant, web-based solution, that is intended to support data collection and data management strategies for studies (Harris et al., 2009).

The *Wellness Participation Survey* instrument was sent to a total of 120 eligible hospital nursing employees. Out of the 120 participants, a total of 87 participants responded to the survey questionnaire. Of the 87 respondents; 52 worked at the state funded hospital and 25 worked at the county funded hospital at the two large selected public teaching hospitals. Out of the 87

respondents; 22 were advanced practice providers and 65 were clinical registered nurses that worked at the two large selected public teaching hospitals. The collected data for the responses to all 16 questions in the *Wellness Participation Survey* are described, summarized, and analyzed below.

Demographics Data: Questions 1 through 5

The first five questions of the survey questionnaire related to the demographic information of the respondents. A frequency table was considered appropriate for data that are categorical in nature - when responses can be neatly placed in one category or the other – for example; job descriptions or age groups. Frequency tables tell the number and percentage of responses in each category. Each frequency table is accompanied by a bar chart and a figure that is a pie chart. The bars correspond to a category and the length of the bar represents the value of that category in a bar chart. Similarly, in a pie chart, the categories and their values are represented as proportions of a total and they are visualized as slices of a circle in a pie chart.

Table 1		
<i>Job Position</i>		
Job Description	Frequency	Percentage
Advanced Practice Provider	22	25.3%
Nursing Staff	65	74.7%
Total	87	100.0%
<i>Note: Adapted from the Wellness Participation Survey response on REDCap to Question # 1: As of January 1, 2019, what is your job position?</i>		

From Table 1, it can be seen that 74.7% (the majority) of the 87 respondents to the *Wellness Participation Survey* were nursing staff and the remainder 25.3% were advanced practice providers. Figures 1a and 1b, represents the data collected in Table 1 as a bar chart and a pie chart, respectively.

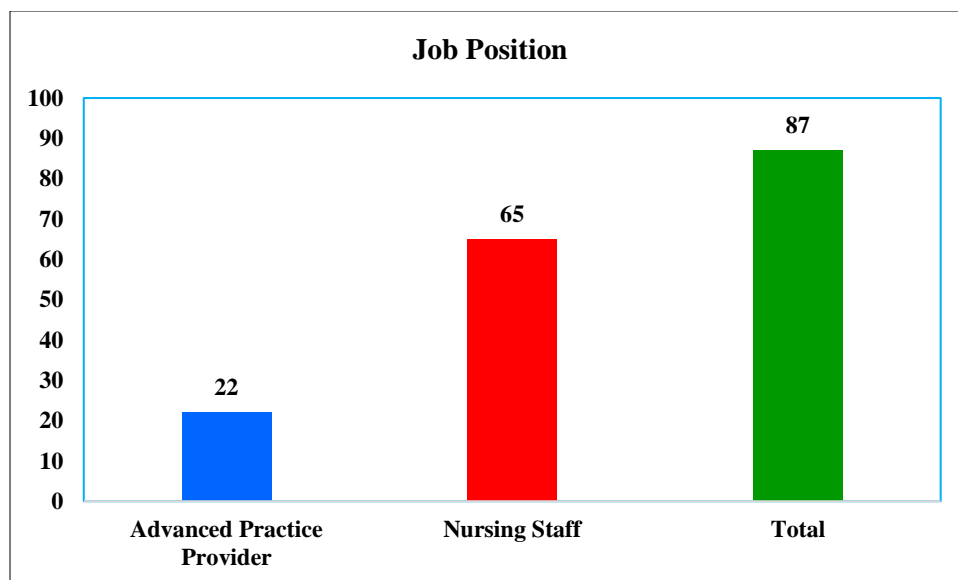


Figure 1a. Job Position by count.

Figure 1a is a bar chart of the information in Table 1. There were more members of the clinical nursing staff who responded to the survey than advanced practice providers.

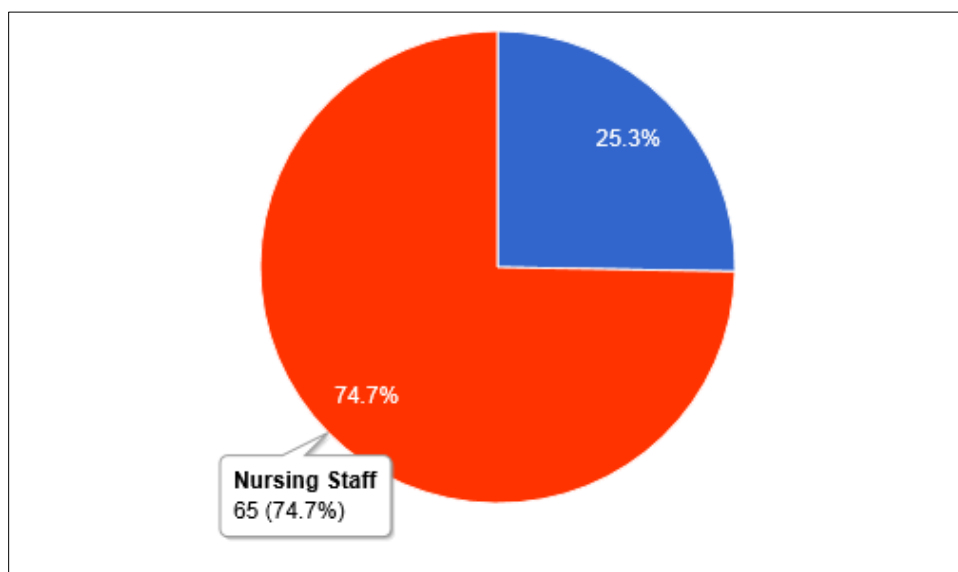


Figure 1b. Job Position by percentage.

Figure 1b is a pie chart of the information in Table 1. The percentage of the clinical nursing staff who responded to the survey was almost three times greater than the percentage of the advanced practice providers respondents.

Table 2		
<i>Hospital Type</i>		
Type of Hospital	Frequency	Percentage
State Hospital	52	59.8%
County Hospital	35	40.2%
Total	87	100.0%
<i>Note: Adapted from the Wellness Participation Survey response on REDCap to Question # 2: Are you employed by the State or County Hospital?</i>		

As displayed in Table 2, 59.8% (the majority) of the 87 respondents to the *Wellness Participation Survey* were employed by the state hospital and the remainder 40.2% were employed by the county hospital, respectively. Figures 2a and 2b, represents the data collected in Table 2 as a bar chart and a pie chart, respectively.

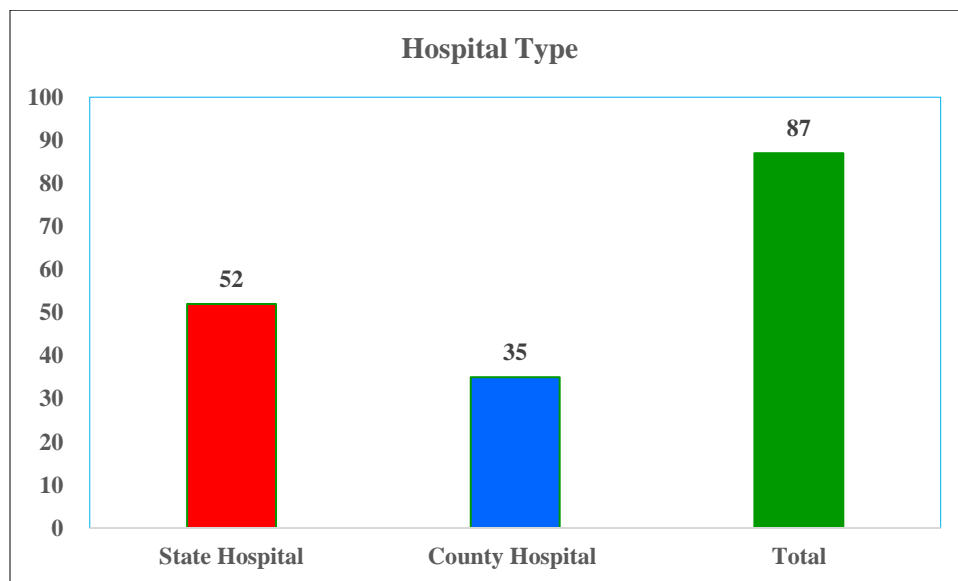


Figure 2a. Number of respondents by hospital type (state or county hospital).

Figure 2a is a bar chart of the information in Table 2. More state-funded hospital nursing employees responded to the survey than employed by the county-funded hospital.

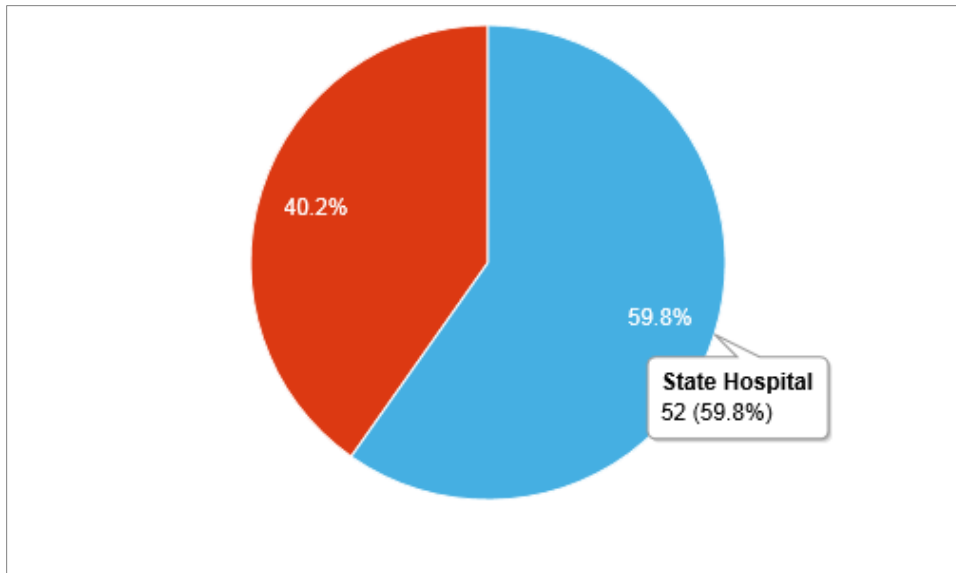


Figure 2b. Percentage of respondents by hospital type (state or county hospital).

Figure 2b is a pie chart of the information in Table 2. Much higher percentage of hospital nursing employees from state hospital responded than county hospital.

Table 3		
<i>Gender</i>		
Gender	Frequency	Percentage
Female	75	86.2%
Male	12	13.8%
Total	87	100.0%
<i>Note: Adapted from the Wellness Participation Survey response on REDCap to Question # 3: What is your gender?</i>		

Table 3 displays an overwhelming majority of respondents to the *Wellness Participation Survey* were females (75 or 86.2%) and only (12 or 13.8%) were males; perhaps indicative of the female/male ratio among hospital nursing employees in the two selected hospitals.

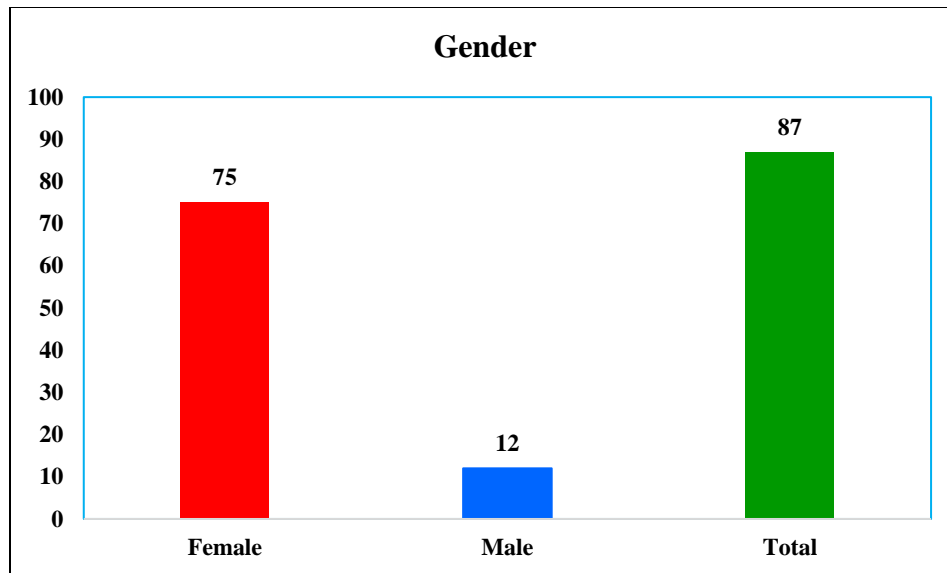


Figure 3a. Number of respondents by gender (female or male).

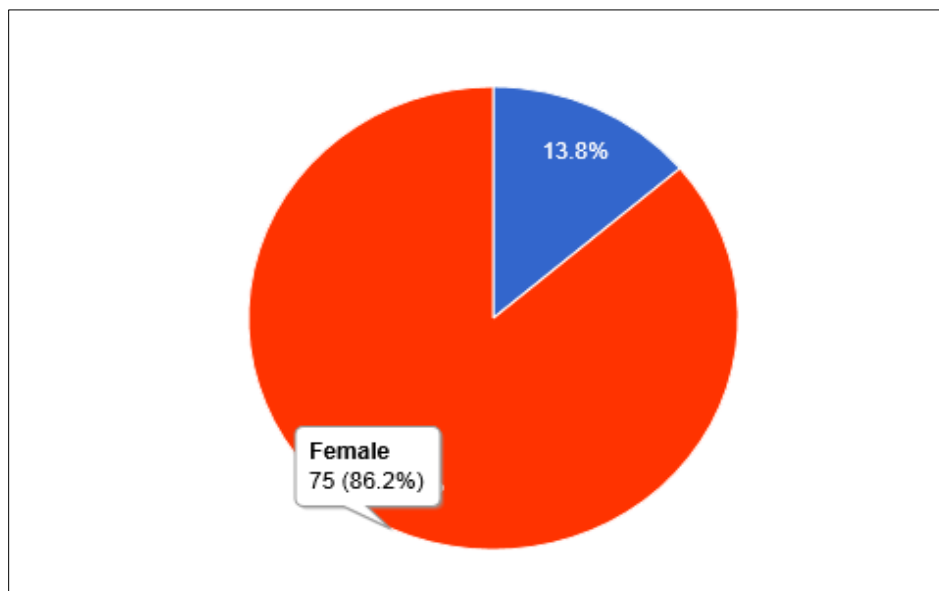


Figure 3b. Percentage of respondents by gender (female or male).

Figures 3a is a bar chart that represents the counts and Figure 3 is a pie chart that represents the percentages of the data collected in Table 3. Both figures visually display that substantially (six times) greater hospital nursing employees employed by both the state and county hospitals combined, who responded to the survey questionnaire, were females than males; perhaps indicative of the female/male ratio employed as hospital nursing employees.

Table 4		
<i>Age Group</i>		
Age Group	Frequency	Percentage
22-30	14	16.1%
31-40	34	39.1%
41-50	26	29.9%
51-60	5	5.7%
61-70	7	8.0%
71-above	1	1.1%
Total	87	100.0%
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response on <i>REDCap</i> to Question # 4: What is your age?		

Table 4 shows the frequency distribution of the respondents to the *Wellness Participation Survey* by age groups with almost 40% of the respondents in the age group of 31-40 years being most responsive and second highest response rate of almost 30% from age group 41-50 years, accounting for close to 70% of the total responses. Therefore, for the purposes of additional analyses, respondents in age groups 51-60, 61-70, and 71 and above shall be combined into one consolidated 51 and above age group. This aggregation will result in a total of four age groups.

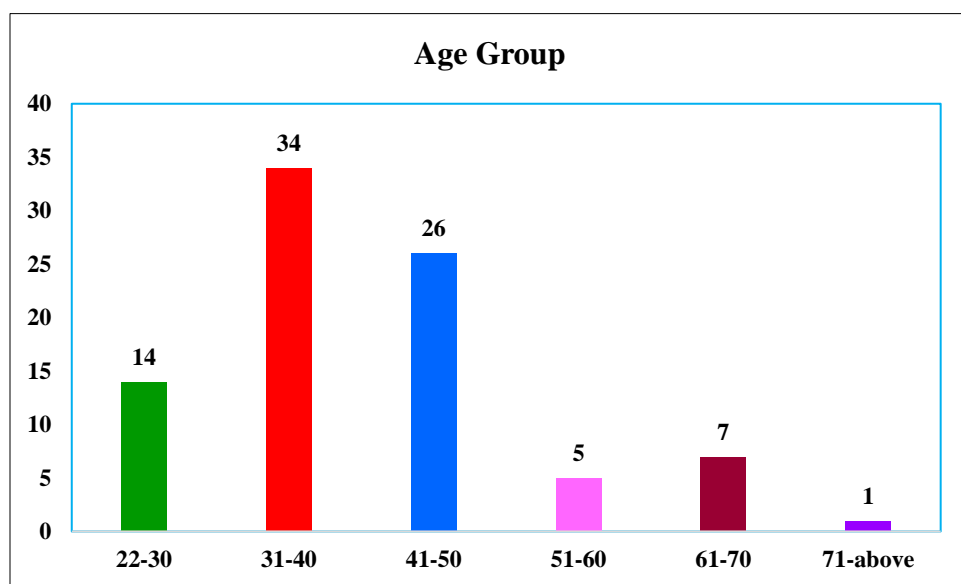


Figure 4(a).

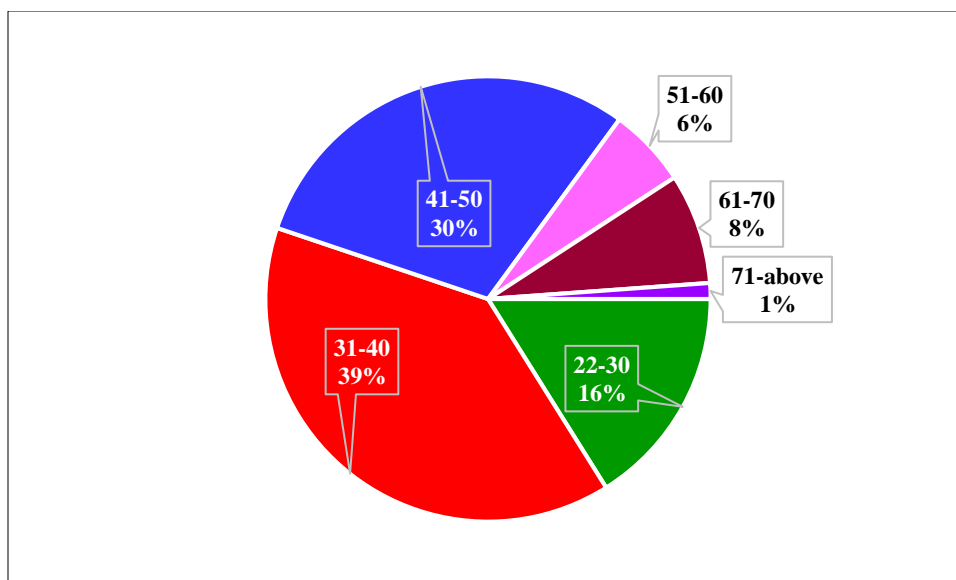


Figure 4b. Percentage of respondents according to age group.

Figures 4a is a bar chart that displays the counts of respondents in six age groups without regards to their gender or hospital employment type. It is clear from the tall bars that age groups 31-40 years and 41-50 years had the highest and second highest response rate, respectively.

Figure 4b is a pie chart of the information in Table 4 which conveys that over 85% of the respondents to the survey were of age 50 or below. It makes sense to combine all respondents of age 51 years and above in to a new age group for additional analyses.

Table 5		
<i>Race</i>		
Race	Frequency	Percentage
African American or Black	10	11.5%
Asian or Pacific Islander	30	34.5%
Hispanic	6	6.9%
White Caucasian	37	42.5%
Other or Mixed Race	4	4.6%
Total	87	100.0%
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response on <i>REDCap</i> to Question # 5: What is your race?		

Table 5 displays that over three-fourths of the respondents to the *Wellness Participation Survey* belong to two ethno-racial groups combined: White Caucasian and Asian or Pacific Islander. This is pronounced by the bar chart and the pie chart in Figures 5a and 5b, respectively. The other groups are small, and therefore, unlikely to yield statistically significant results. Instead of performing an analysis that would be misleading and lacking statistical significance, a comparison of the White Caucasian and Asian or Pacific Islander groups was performed for meaningful additional analyses.

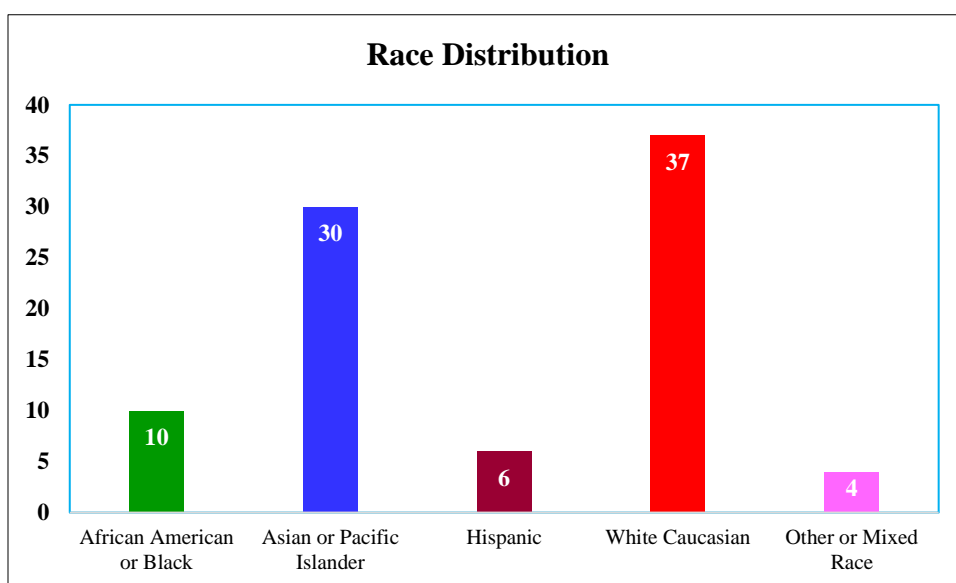


Figure 5a. Number of respondents by race.

Figure 5a is a bar chart of the information in Table 5 that displays that the vast majority of the respondents to the *Wellness Participation Survey* questionnaire were in two ethno-racial groups: White Caucasian and Asian or Pacific Islander. Similarly Figure 5b is a pie chart of the information in Table 5 which shows that 77% of the respondents belonged to the White Caucasian and Asian or Pacific Islander ethno-racial groups combined.

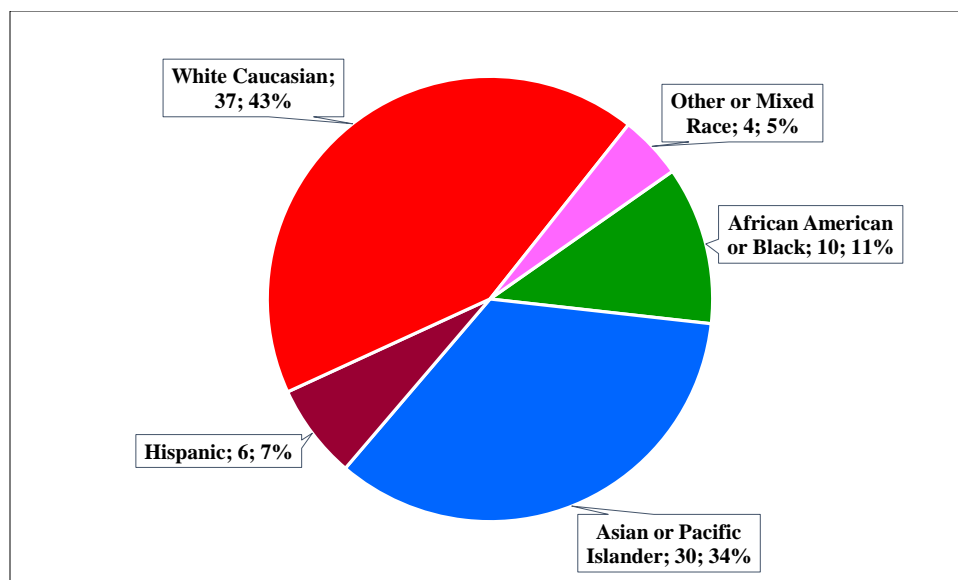


Figure 5b. Percentage of respondents by race.

Perception of Availability of Wellness Programs: Questions 6 and 7

Questions six and seven of the *Wellness Participation Survey* questionnaire was to identify the perceptions of the hospital nursing employees regarding availability of workplace wellness programs and the number of programs offered to the employees and their families. To describe this data, frequency distribution bar chart and pie chart were used to indicate the responses of the participants to whether or not workplace wellness programs were available at their hospital.

Table 6		
<i>Perception of Availability of Workplace Wellness Programs</i>		
Responses	Frequency	Percentage
Yes	67	77.0%
No	6	6.9%
Do Not Know	14	16.1%
Total	87	100.0%
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response on REDCap to Question # 6: Does your employing hospital currently have a health & wellness program?		

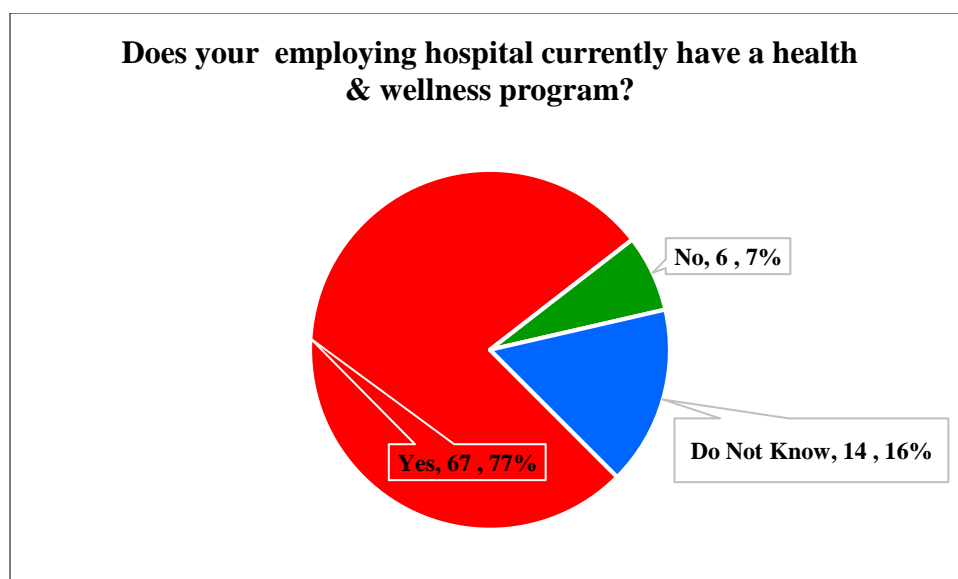


Figure 6. Frequency distribution of responses to perception of availability of health and wellness programs.

Table 6 shows that the majority of respondents to the survey (77%) were aware of the health and wellness program at their hospital but still there were a good portion of respondents who either erroneously said “No” or “Did not know.” Figure 6 displays the frequency distribution of responses to Perception of Availability for Employees. It clearly displays that the majority of respondents (67; 77%) were aware of the health and wellness programs available.

Table 7		
<i>Perception of Availability of Workplace Wellness Programs to Families</i>		
Responses	Frequency	Percentage
Yes	41	48.2%
No	9	10.6%
Do Not Know	35	41.2%
Missing	2	-
Total	87	100.0%
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response on REDCap to Question #7: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?		

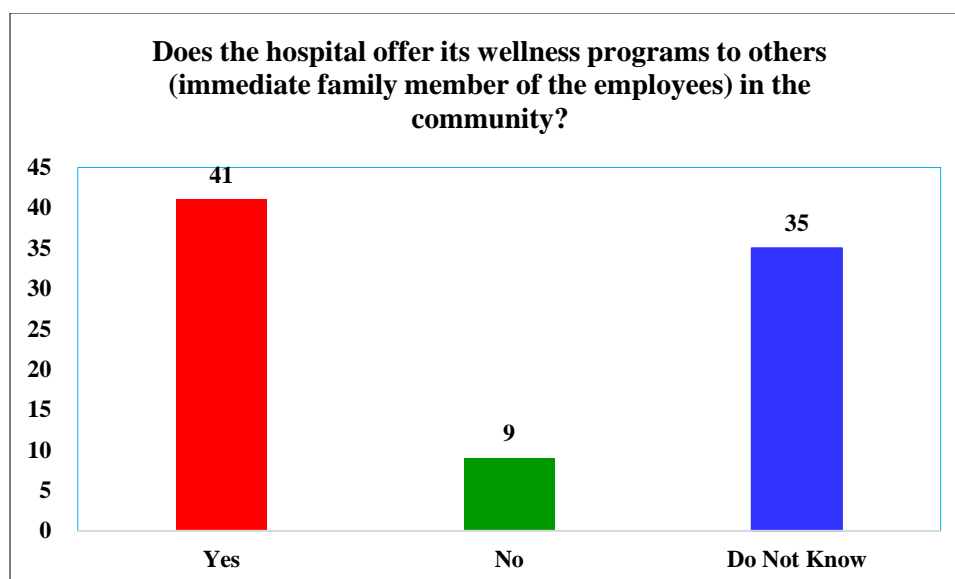


Figure 7. Frequency distribution of responses to perception of availability of wellness programs to families.

Both Table 7 and Figure 7 shows that less than half of the respondents (48.2% of the 85 who responded) were aware that immediately family members could participate in their hospital-based workplace wellness programs. Conversely, the majority (44 out of 85 or 51.8%) of the respondents to Question #7 in the *Wellness Participation Survey* either erroneously said “No” or “Did not know.”

Perception of Availability of Number of Wellness Programs: Question 8

The perceived number of wellness program benefits available to hospital nursing employees was described using summary statistics. Summary statistics are appropriate for variables that are numeric and approximately continuous (many possible values between the lowest and highest values). Table 8 summarizes the response data separately for state and county hospital employees as there are different numbers of program benefits available at each of the two selected hospitals. The county hospital offers 17 wellness program benefits, whereas the state hospital offers 24 wellness program benefits. The survey questionnaire allowed the participants to choose up to the maximum of 24 programs.

Table 8					
<i>Summary Statistics for Perceived Number of Available Wellness Programs</i>					
Hospital Type	Mean	Median	Standard Deviation	Minimum	Maximum
State Hospital	13.12	15.5	6.419	1	20
County Hospital	8.80	7.0	6.116	1	19
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response on REDCap to Question #8: Does hospital workplace has following Wellness Programs and Benefits to Hospital Employees?					

The five statistics included are the mean (i.e., the average), the median (the number in the middle if all responses are lined up from smallest to largest, i.e. the 50th percentile), the standard deviation (a measure of variability among responses, e.g., the “typical” county hospital respondent gives an answer within +/- 6.116 of the average of 8.80), and the minimum and maximum (the smallest and largest number of programs perceived across all respondents). On closer look, the following information stands out from Table 8:

- The average and median number of perceived program benefits is lower than the actual number for both state and county hospitals
- The average and median number of perceived program benefits at the county hospital is lower than for the state hospital, which reflects the true situation
- No respondent selected 0 program benefits for either hospitals (as the minimum is 1)
- No respondent selected all 24 program benefits available, in fact, the highest number of perceived wellness programs available for state hospital is 20, which is less the true number of 24 programs.

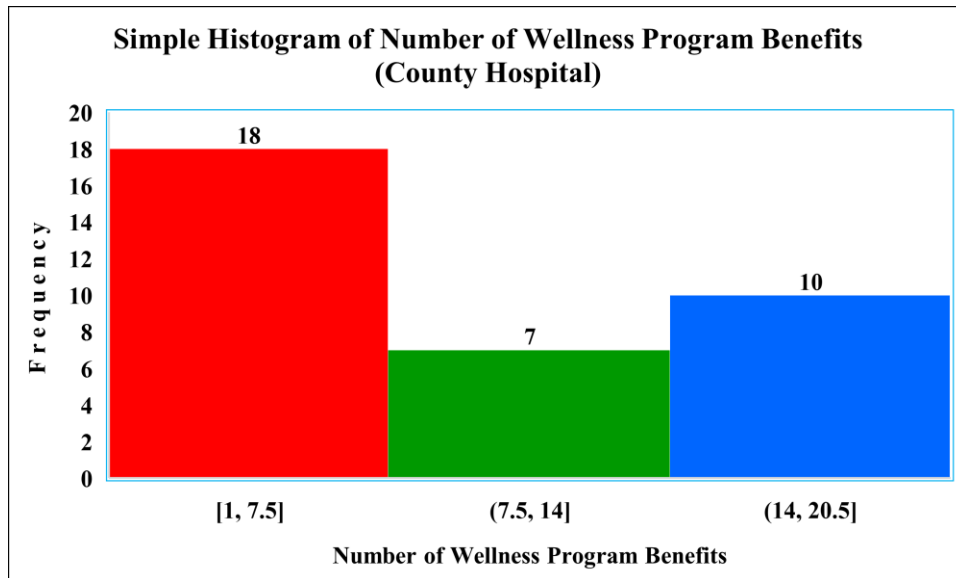


Figure 8a. Histogram of Number of Wellness Benefits Available for County Hospital.

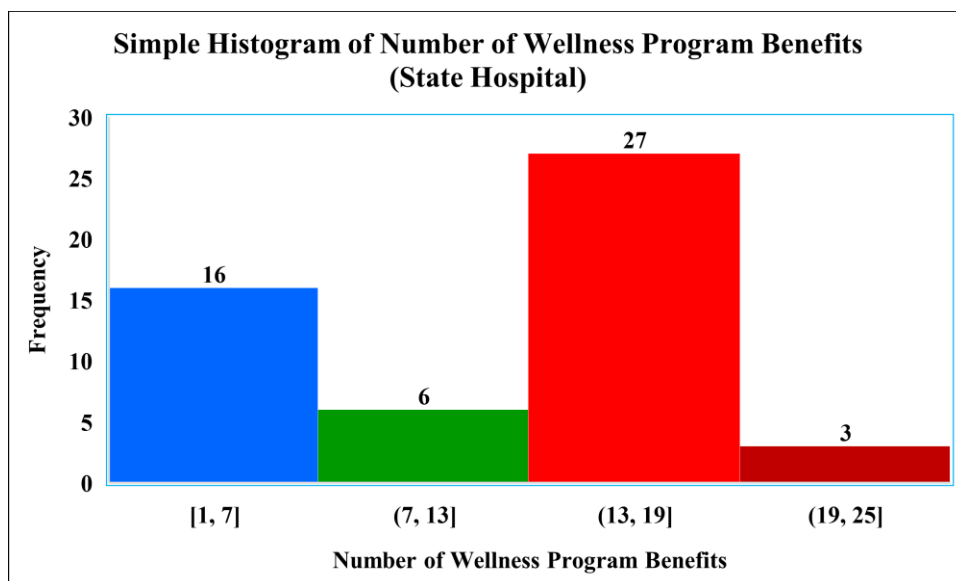


Figure 8b. Histogram of Number of Wellness Benefits Available for State Hospital.

Figures 8a and 8b are histograms of the responses. These are similar to bar charts but for continuous data. From Figure 8a for county hospital, it appears that there was one group of individuals who tended to select a small number of benefits and a separate group who tended to select a higher number of benefits. From Figure 8b for state hospital, it appears that many

respondents selected a large number of benefits and fewer individuals chose smaller number of wellness program benefits.

Perception of Level of Wellness Programs Availability: Question 9

Participants in the *Wellness Participation Survey* questionnaire were asked a second question about the level of wellness program availability. This question asked survey participants to rate the availability of the programs on a scale from 1 to 10 (10 being very available). This question also uses summary statistics to describe the responses, but the respondents are combined (rather than separated by hospital type). It must be noted that the sample size for this question was only 86, as one participant did not respond.

Table 9				
<i>Summary Statistics of Perception of Program Availability</i>				
Mean	Median	Standard Deviation	Minimum	Maximum
5.08	5.00	1.989	1	10
<i>Note: Adapted from the Wellness Participation Survey response on REDCap to Question #9: What is the level of availability of the programs?</i>				

The mean and the median are both around 5, which was used to indicate moderate availability. Additionally, it must be noted that there was at least one respondent who said “1” (the least available option) and at least one respondent who said “10” (the most available option). The histogram displayed in Figure 9 makes it abundantly clear that the most common response from all respondents to the *Wellness Participation Survey* questionnaire was a 5 (which was moderate availability).

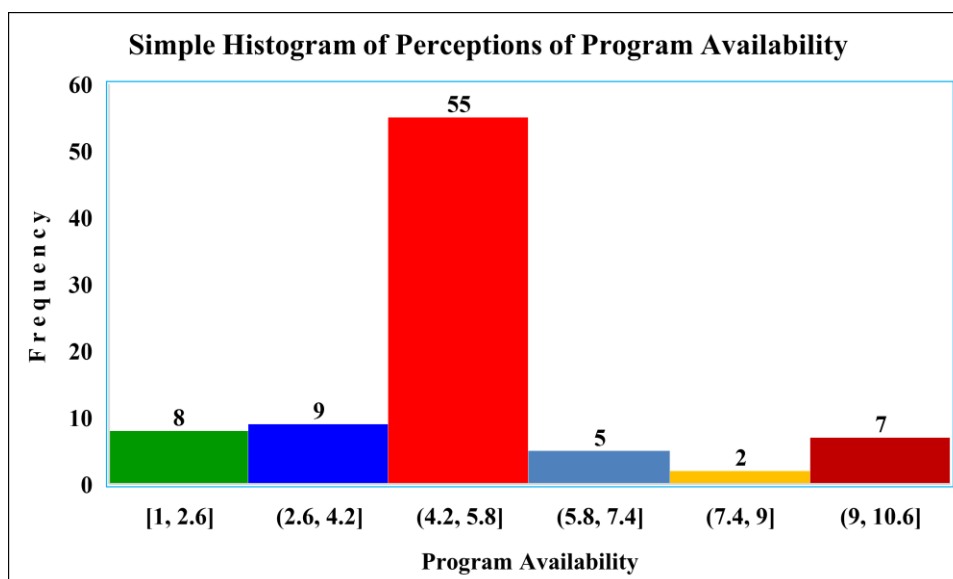


Figure 9. Histogram of Perceptions of Program Availability.

Perception of Incentives and Penalties

There were five questions, 10 through 14 that focused on penalties and incentives with regards to participation or non-participation in workplace wellness programs. Table 10 gives the frequency distribution of responses to “Does the hospital offer positive incentives to employees who do participate in health and wellness programs?” The correct answer was “No” with just under half of those who responded providing this answer.

Table 10		
<i>Frequency Distribution of Responses to Offer of Positive Incentives</i>		
Responses	Frequency	Percentage
Yes	10	11.6%
No	42	48.8%
Do Not Know	34	39.5%
Missing	1	-
Total	87	100.0%
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response on <i>REDCap</i> to Question #10: Does the hospital offer positive incentives to employees who do participate in health and wellness programs?		

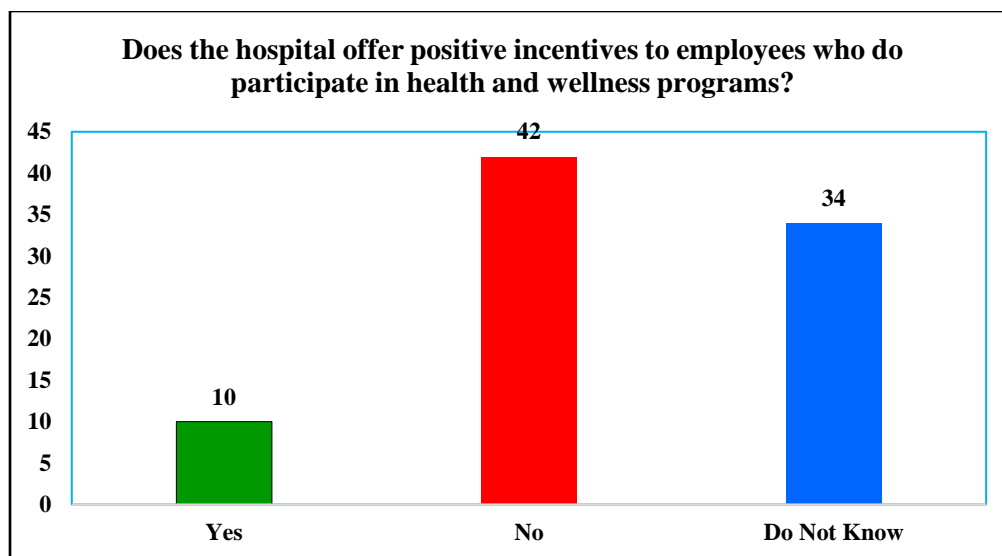


Figure 10. Frequency distribution of responses to offer of positive incentives.

The bar chart in Figure 10 shows all responses received for question #10 to “offers positive incentives to employees who do participate in established health and wellness programs.” The majority (44 out of 86 or 51.2%) of the respondents to Question #10 in the *Wellness Participation Survey* either erroneously said “Yes” or “Did not know.”

Table 11		
<i>Frequency Distribution of Response to Hospital Imposes Penalties for non-participation</i>		
Responses	Frequency	Percentage
Yes	4	4.6%
No	59	67.8%
Do Not Know	24	27.6%
Total	87	100.0%
<i>Note: Adapted from the Wellness Participation Survey response on REDCap to Question #11: Does the hospital impose penalties on employees who do not participate?</i>		

Slightly over two-thirds of respondents (67.8%), as Table 11 shows, correctly answered question #11 that no penalties are imposed for lack of participation or non-participation in the hospital-based workplace wellness programs. Figure 11 is a bar chart that displays all 86

responses received for question #11 that asked if the hospital imposed penalties on employees who do not participate in the hospital-based wellness programs.

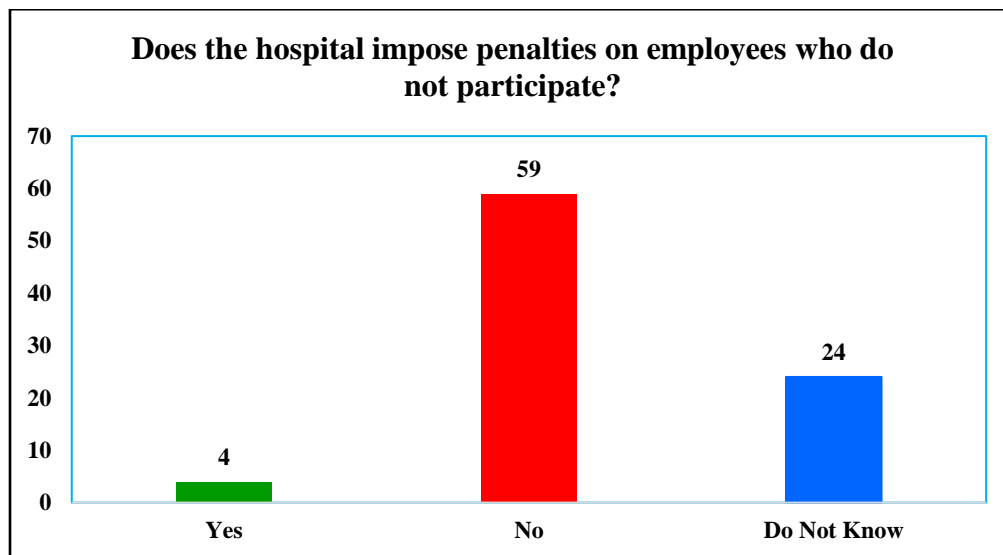


Figure 11. Frequency distribution of responses regarding penalties for non-participation.

Table 12		
<i>Increase in Participation with Positive Incentives</i>		
Responses	Frequency	Percentage
Yes	81	93.1%
No	6	6.9%
Do Not Know	0	0%
Total	87	100.0%
<i>Note: Adapted from the Wellness Participation Survey response on REDCap to Question #12: Would your participation increase if you are given some positive incentives for participation?</i>		

Table 12 provides a stark representation of the responses received in answer to question #12 since this was not limited to a job description, gender, hospital type, age group, or race/ethnicity. Respondents appear to be quite certain of their response since there were no “Do not know” responses. Figure 12 is a pie chart which provides a visual that indicates that very few respondents said “No” and a vast majority (93.1%) said “Yes” to their intention to participate in

the hospital-based workplace wellness programs if hospital nursing employees were provided positive incentives for participation in them. Therefore, it appears no additional analyses is needed; hence none will be presented involving this question (#12) item.

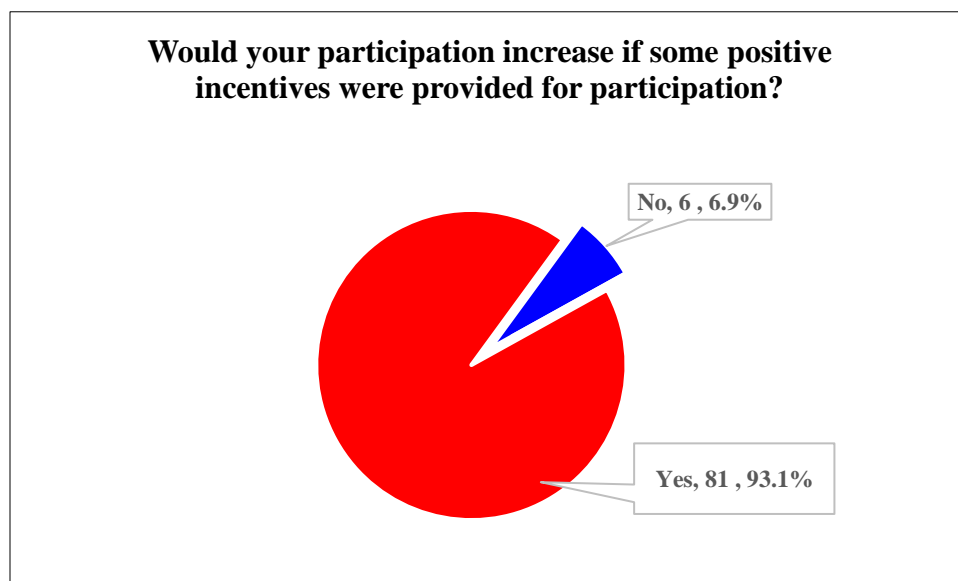


Figure 12. Frequency distribution of responses to increase participation in wellness program with positive incentives.

Table 13		
<i>Frequency Distribution of Responses to the Choice of Eight Incentives</i>		
Incentives	Frequency	Percentage
Gift Cards/Cash	57	65.5%
Premium Discounts	53	60.9%
Travel Tickets for a Vacation	50	57.5%
Lower Deductibles	47	54.0%
Subsidized Health Club Memberships	30	34.5%
Higher Employer Health Savings Account	19	21.8%
Recognition	17	19.5%
Small Tokens	7	8.0%
<i>Note: Adapted from the Wellness Participation Survey response on REDCap to Question #13: Your preference of incentives: Choose from below:</i>		

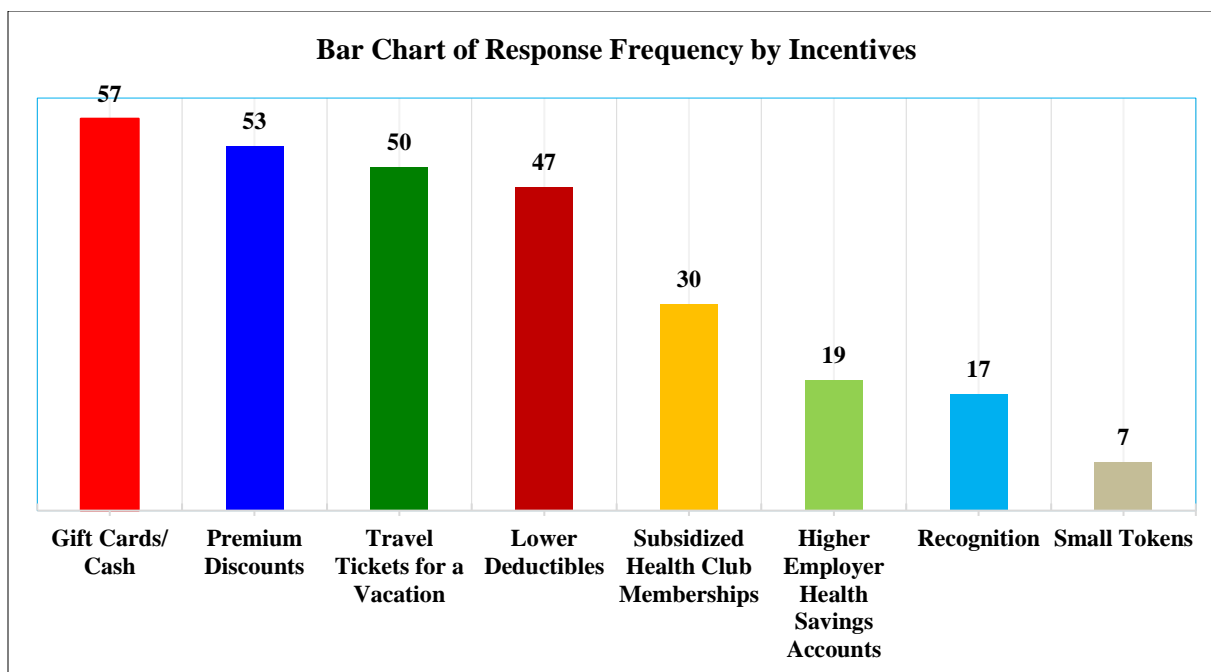


Figure 13. Bar chart of responses to the choice of Eight Incentives.

Table 13 is a slightly different kind of frequency table, that shows the number (out of 87 respondents) and percent of participants who selected each incentive. Participants were asked to choose which incentives (out of eight choices) would encourage them to participate in the hospital-based workplace wellness program? They could choose as many or as few as they wanted. These have been ordered from greatest percent selection to lowest percent selection, which shows the most popular choice of incentive was gift cards or cash and the least popular choice was small tokens. Figure 13 is a bar chart which provides a visual that indicates the popularity of the eight incentives among respondents based on the height of the bar.

Table 14		
<i>Frequency Distribution of Responses to “Does hospital offer any of the mentioned incentives?”</i>		
Responses	Frequency	Percentage
Yes	15	17.4%
No	46	53.5%
Do Not Know	25	29.1%
Total	86	100.0%

Note: Adapted from the *Wellness Participation Survey* response on REDCap to Question #14: Does your hospital offer any of the above-mentioned incentives?

In Table 14, a matter of fact question (#14) was asked, like question #10, for which the correct answer is “No,” and just over half (53.5%) of the 86 respondents answered it correctly. The data collected in Table 14 is shown through a pie chart in Figure 14.

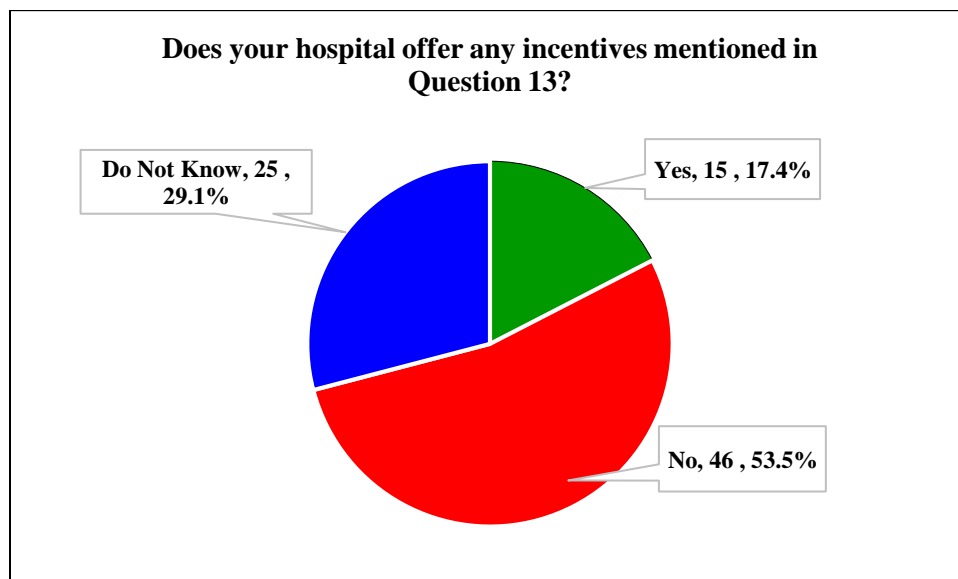


Figure 14. Bar chart of responses to hospitals offering any incentives?

Perception of Barriers & Motivations

In question #15, participants were asked to rate (on a scale from 1 = Strongly Disagree to 5 = Strongly Agree) how strongly they agreed that each of the 10 potential barriers was, in fact, perceived a barrier to their participation in a hospital-based workplace wellness program. Table 15 provides summary statistics, as well as the percent of participants responding with “Agree” or “Strongly Agree,” for each barrier sorted from the highest rates to the lowest. While summary statistics may be helpful for interpreting the participants’ responses, it is an issue of debate among statisticians whether they are appropriate for ordinal responses such as Likert scales. The frequency and percent of agree/strongly agree responses have been used in later analyses.

Table 15							
<i>Summary Statistics for Ratings of 10 Potential Barriers</i>							
Barriers	N	Mean	Median	Standard Deviation	Min.	Max.	Agree/ Strongly Agree
Non-availability of a gymnasium at workplace for employees	87	4.68	5	0.638	2	5	81 (93.1%)
Long working hours	86	4.41	5	0.886	1	5	76 (88.4%)
Lack of incentives	87	4.33	5	0.972	1	5	76 (87.4%)
Distance between workplace, workout sites and home	86	4.35	5	1.003	1	5	74 (86.0%)
Work-related stress	87	4.16	4	1.044	1	5	69 (79.3%)
Family obligations	86	4.09	4	1.013	1	5	65 (75.6%)
Odd shifts (switch between day, evening and night shifts)	85	3.79	4	1.440	1	5	57 (65.5%)
Worries about security of personal health information online	87	2.85	3	1.215	1	5	23 (26.4%)
Privacy reasons	87	2.93	3	1.129	1	5	19 (21.8%)
Lack of comfort in using internet access to utilize online health programs	86	2.70	3	1.149	1	5	18 (20.9%)
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response on <i>REDCap</i> to Question #15: How much do you agree or disagree on the scale below about each of the barriers listed as a hindrance in participation in a wellness program?							

According to Table 15, the most highly rated barrier was non-availability of a gymnasium at workplace for employees (93.1% of respondents agreeing or strongly agreeing); the lowest rated barrier was “lack of comfort in using internet access to utilize online health programs (20.9% of respondents agreeing or strongly agreeing). Figure 15 is a bar chart showing the count

and percentage of respondents who agreed or strongly agreed with each barrier (percent was used for sorting rather than count/number, as all respondents did not answer every question).

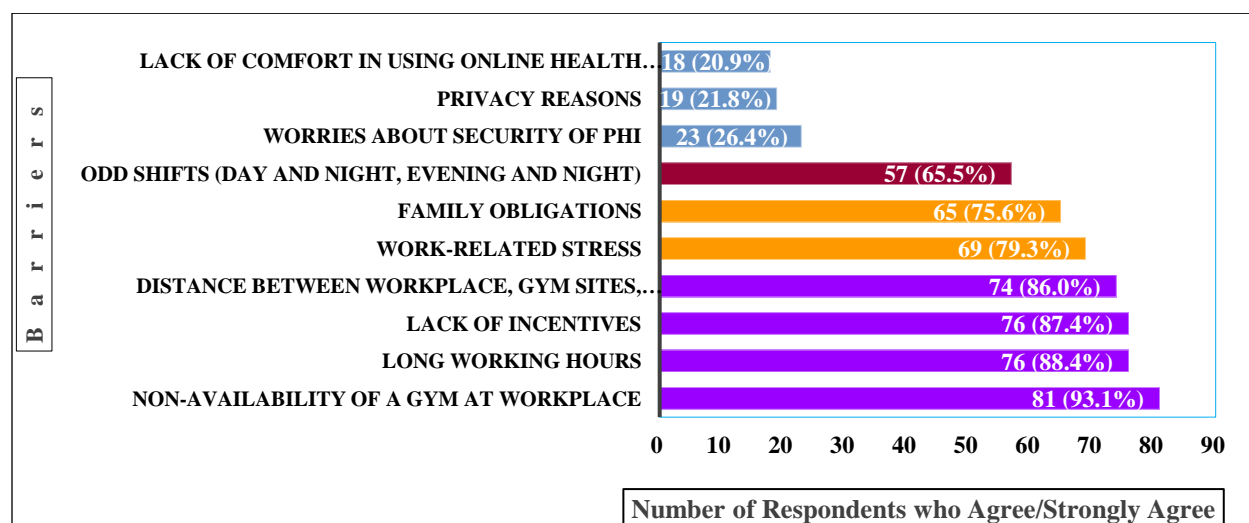


Figure: 15. Bar Chart of Agreement with Barriers.

A Cronbach's Alpha was run in order to evaluate the internal consistency (the extent of agreement across barriers within a participant) of these 10 barriers. The Cronbach's Alpha was 0.768. If the items were combined and used as an overall measure of an individual's agreement with barriers, this scale would be considered to be in the "acceptable" range.

In question #16, participants were asked to rate (on a scale from 1 = Strongly Disagree to 5 = Strongly Agree) how strongly they agreed that each of the 10 potential motivations was, in fact, perceived as a motivation to actually encourage them to participate in a hospital-based workplace wellness program. Table 16 provides summary statistics, as well as the percent of participants responding with "Agree" or "Strongly Agree," for each barrier sorted from the highest rates to the lowest.

Table 16							
<i>Summary Statistics for Ratings of 10 Potential Motivations</i>							
Motivations	N	Mean	Median	Standard Deviation	Min.	Max.	Agree/ Strongly Agree
Gymnasium available at worksite	86	4.70	5	0.615	2	5	83 (96.5%)
Lower deductibles	87	4.67	5	0.773	1	5	81 (93.1%)
Premium discounts	86	4.64	5	0.781	1	5	80 (93.0%)
Incentives for participation	87	4.55	5	0.711	2	5	80 (92.0%)
Subsidized health club membership	87	4.60	5	0.754	1	5	80 (92.0%)
Stress reduction	86	4.55	5	0.762	1	5	79 (91.9%)
Feeling good after participation in a given wellness program	87	4.55	5	0.728	2	5	79 (90.8%)
Paid 30 minutes break for participation	87	4.54	5	0.986	1	5	78 (89.7%)
Good quality of sleep with regular exercises	86	4.53	5	0.793	1	5	77 (89.5%)
Higher employer health savings account	86	4.49	5	0.878	1	5	76 (88.4%)
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response on <i>REDCap</i> to Question #16: How much do you agree or disagree on the scale below about each of the motivations listed as an encouragement in participation in a wellness program?							

According to Table 16, the most highly rated motivation was gymnasium available at worksite (96.5%); the lowest rated motivation was (HSA) higher employer health savings account (88.4%). It was noted that the difference between the highest and lowest rated motivations is subjectively not that large (especially when compared to the ratings of the barriers in Table 15). Figure 16 is a bar chart showing the percentage of respondents who agreed or strongly agreed with each motivation (percent was used for sorting rather than count/number, as all respondents did not answer every question).

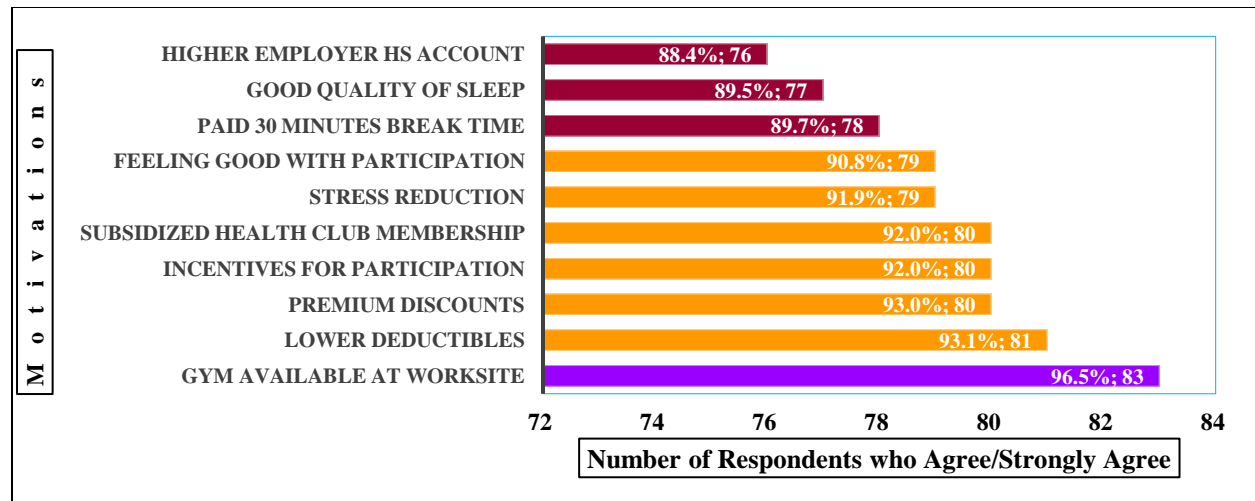


Figure: 16. Bar Chart of Agreement with Motivations

A Cronbach's Alpha was run in order to evaluate the internal consistency (the extent of agreement across motivations within a participant) of these 10 motivations. The Cronbach's Alpha was 0.922. If the items were combined and used as an overall measure of an individual's agreement with incentives, this scale would be considered to be in the "excellent" range. The reason for the discrepancy between barriers and motivations for participation with respect to the Cronbach's Alpha is that the respondents tended to agree or strongly agree with all of the motivations, while there were some barriers with which respondents generally did not agree.

Demographic Statistical Analyses

Table 17				
Job Description by Hospital Type				
Hospital Type		Job Description		Total
		Nursing Staff	Advanced Practice Provider	
County Hospital	Count	25	10	35
	% County	71.4%	28.6%	
State Hospital	Count	40	12	52
	% State	76.9%	23.1%	
Note: Adapted from the Wellness Participation Survey response data on REDCap.				

Demographic variables of job description, gender, age and race across the two selected county and state hospitals are analyzed in this section. Table 17 is a two-way frequency table that depicts 28.6% of the respondents from the county hospital were advanced practice providers (APP) while 23.1% of respondents from the state hospital were the same. Whereas, 71.4% and 76.9% of the respondents were registered nurses (RN) from the county hospital and the state hospital, respectively for a total of 87 respondents to the *Wellness Participation Survey*.

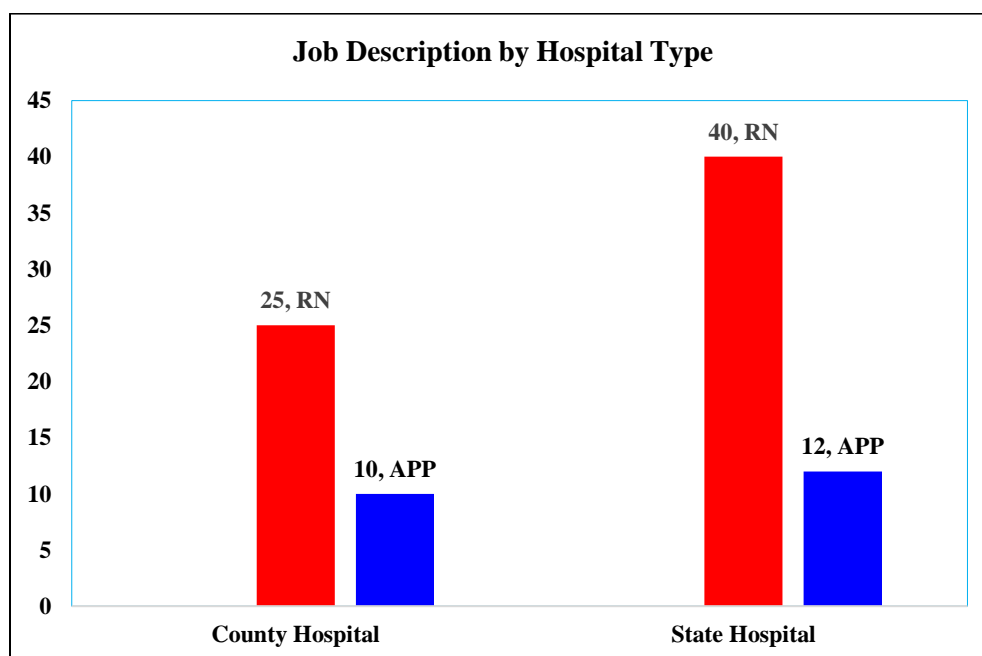


Figure 17. Bar Chart of Job Description by Hospital Type.

The side-by-side bar chart in Figure 17 displays the information from Table 17 by count. Comparison using the Chi-square Test is performed in Table 17a, which is an appropriate statistic for comparing percentages across two (or more) independent groups, which in this case are, respondents APPs and RNs from county hospital and state hospital. The results of the Chi-square test are presented in Table 17a, which includes three statistics: Chi-square statistic (χ^2), the degrees of freedom (or df), and the p value.

Table 17a		
<i>Results of Chi-Square Test for Job Description by Hospital Type</i>		
χ^2	df	p
0.334	1	0.563
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

The Chi-square statistic is a standardized version of the difference in the percentages of job description (APP and RN) for the two hospital (county and state) types. Comparing the two groups, the degrees of freedom is $2-1 = 1$ and the p value of 0.563 in Table 17a suggests that there was no true difference in the job descriptions at each hospital type. There was a 56.3% chance to see a difference in the sample as large as the one in Table 17 just due to random differences in the hospital nursing employees who responded to the survey. This was not considered big, especially compared to 0.05 level of significance. Therefore, it was concluded that there was no statistically significant difference in job description by hospital type.

Table 18				
Gender by Hospital Type				
Hospital Type		Gender		Total
		Female	Male	
County Hospital	Count	26	9	35
	% County	74.3%	25.7%	
State Hospital	Count	49	3	52
	% State	94.2%	5.8%	
Note: Adapted from the Wellness Participation Survey response data on REDCap.				

A two-way frequency table is depicted in Table 18 that shows 74.3% and 94.2% of the respondents from the county and state hospitals, respectively were females. On the other hand, 25.7% and only 5.8% of the respondents from the county and state hospitals, respectively were

males. The same can be seen in Figure 18 visually in a side-by-side bar chart. Results of the Chi-square Test is presented in Table 18a.

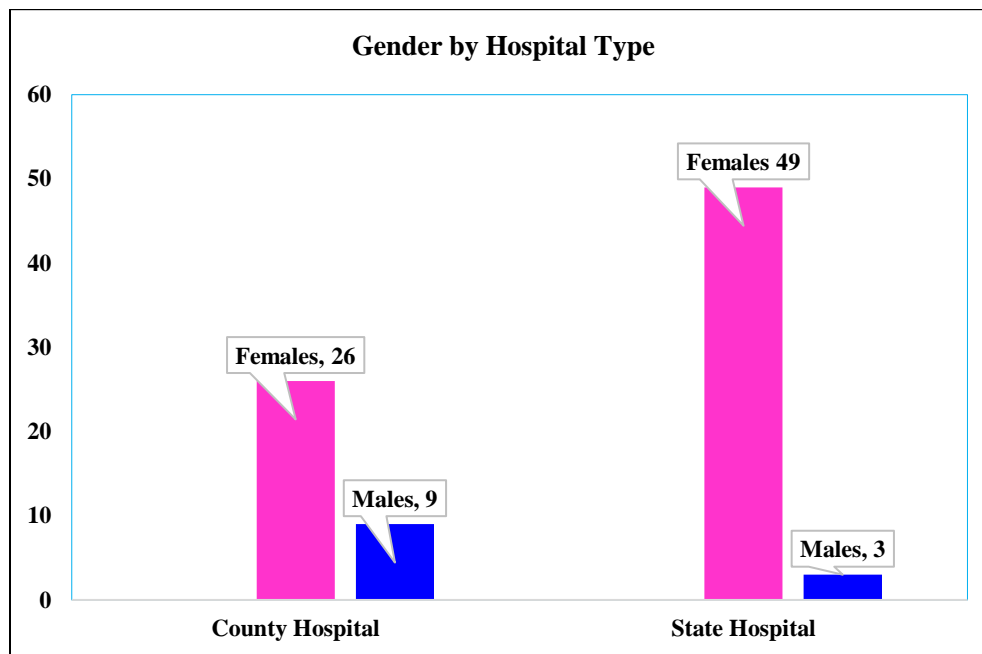


Figure 18. Bar Chart of Gender by Hospital Type.

Table 18a		
<i>Results of Chi-Square Test for Gender by Hospital Type</i>		
χ^2	df	p
6.999	1	0.008
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

The p value is small compared to the significance level of 0.05 that indicated that there is a statistically significant difference in gender by hospital type. Referring to Table 18, there were 25.7% respondents who were male hospital nursing employees at the county hospital and only 5.8% at the state hospital. Therefore, it was concluded that there was a significantly greater percentage of male hospital nursing employees at the county public hospital at the 0.05 level of significance, than at the state public teaching hospital.

Table 19						
Age Group by Hospital Type						
Hospital Type		Age				Total
		22-30	31-40	41-50	51-above	
County Hospital	Count	8	15	8	4	35
	% County	22.9%	42.9%	22.9%	11.4%	
State Hospital	Count	6	19	18	9	52
	% State	11.5%	36.5%	34.6%	17.3%	
Note: Adapted from the Wellness Participation Survey response data on REDCap.						

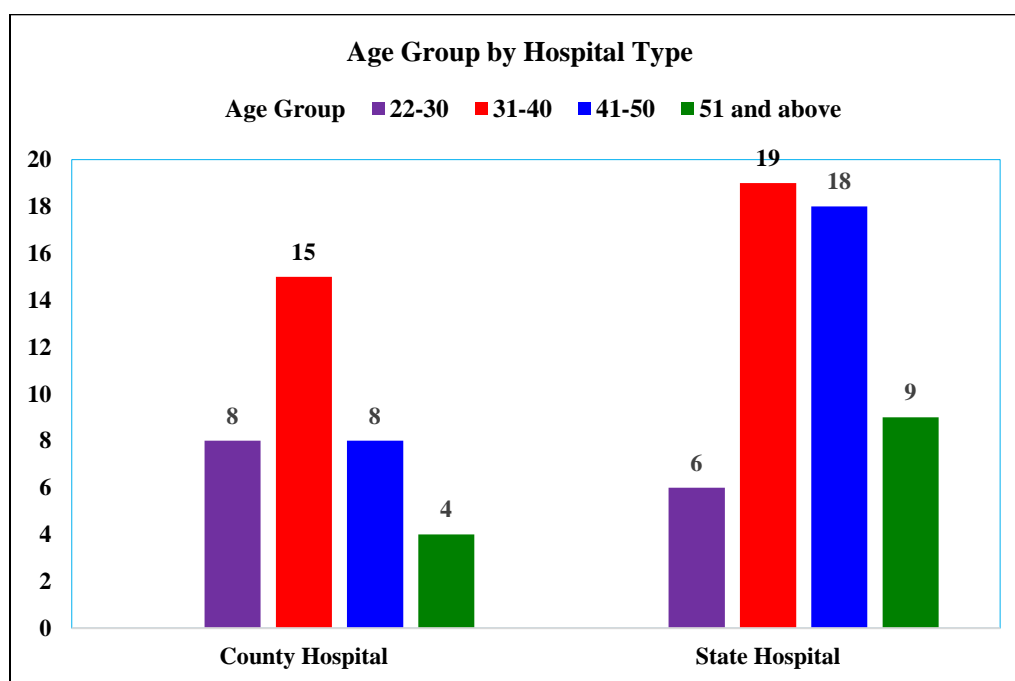


Figure 19. Bar Chart of Age Group by Hospital Type.

Table 19a		
<i>Results of Linear-by-Linear Association Test for Age Group by Hospital Type</i>		
χ^2	df	p
2.895	1	0.089
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Since age is ordered, a more specific, Linear-by-Linear Association Test, was performed to determine whether one hospital type tends to have an older group of nursing employees, rather

than testing to see if the age groups are different between hospital types. The results of the Linear-by-Linear Association Test, rather than a Chi-square Test, is displayed in Table 19a. However, it was concluded that there was not a statistically significant difference in the age groups trend between the county and state hospitals at the 0.05 level of significance.

Table 20							
Race by Hospital Type							
Hospital Type		Race					
		African American or Black	Asian or Pacific Islander	Hispanic	Other or Mixed Race	White Caucasian	Total
County Hospital	Count	6	7	2	3	17	35
	% County	17.1%	20.0%	5.7%	8.6%	48.6%	
State Hospital	Count	4	23	4	1	20	52
	% State	7.7%	44.2%	7.7%	1.9%	38.5%	
Note: Adapted from the Wellness Participation Survey response data on REDCap.							

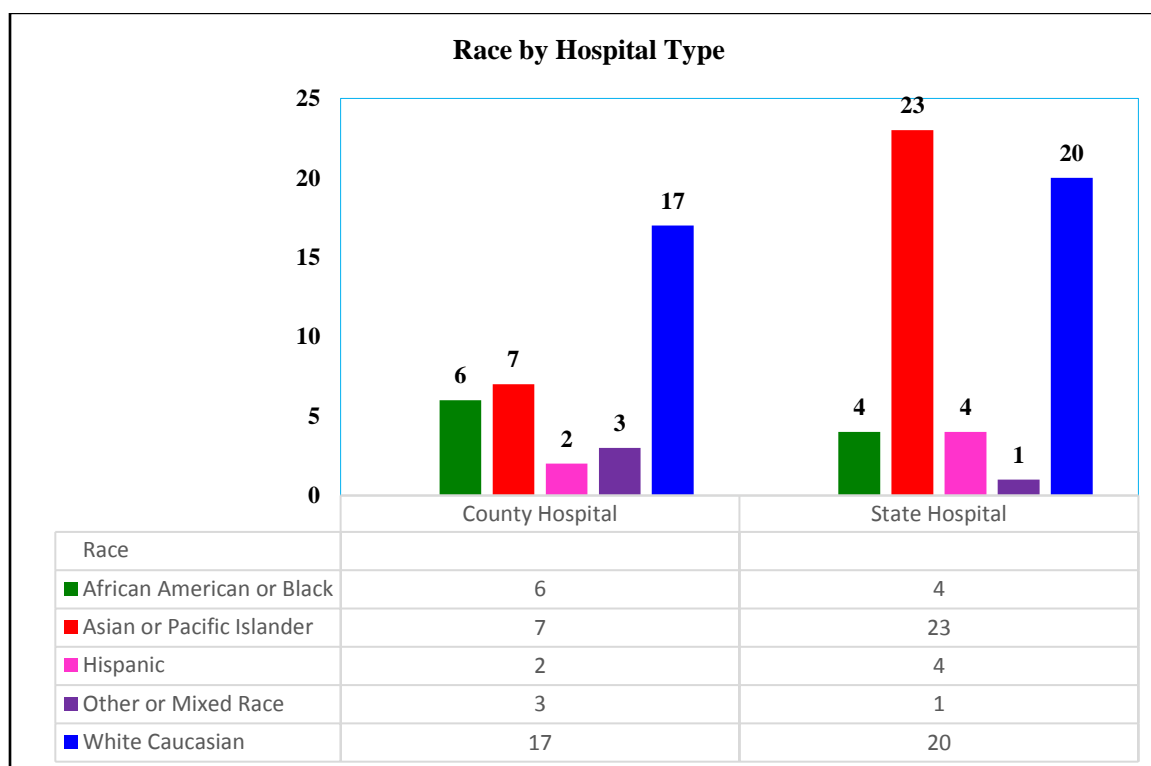


Figure 20. Bar Chart of Race by Hospital Type.

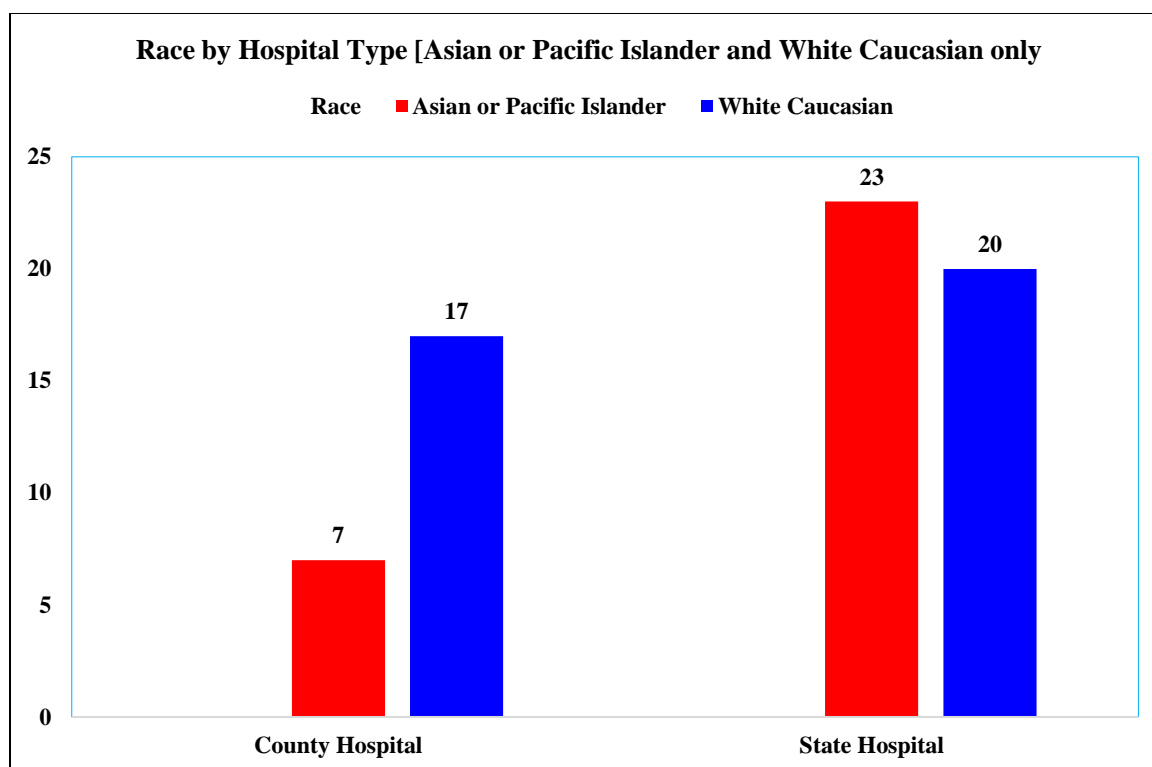


Figure 20a. Bar Chart of Race by Hospital Type; Asian & Pacific Islander and White Caucasian only.

Table 20a		
<i>Results of Chi-Square Test for Race by Hospital Type; Asians & Whites, only</i>		
χ^2	df	p
3.685	1	0.055
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Based on the results displayed on Tables 20 and 20a, it was concluded that there was not a statistically significant difference in the distribution of Asian or Pacific Islander and White Caucasian hospital nursing employees between the county and state hospitals at the 0.05 level of significance. However, it was noted that this result was very close to being significant in a practical sense rather than a statistical one, due to the fact that there was a greater percentage/number of Asian or Pacific Islander nursing staff over White Caucasian nursing employees in the state hospital. The situation was reverse in the county funded hospital.

Brief Summary of Significant Results: There was a significantly greater percentage of male hospital nursing employees at the county funded public teaching hospital at the 0.05 level of significance than at the state public teaching hospital. Based on the *Wellness Participation Survey* results, there were no other statistically significant demographic differences between the two selected hospitals, although the difference in the racial composition of the hospital nursing employees at the two selected hospitals are close to being statistically significant.

Perception of Availability of Wellness Programs

Table 21				
<i>Frequency of Response to Question #6 by Job Description: Does your employing hospital currently have a health and wellness program?</i>				
Job Description		Survey Responses		Total
		Yes	No/Do not Know	
Clinical Nursing Staff	Count	51	14	65
	% RNs	78.5%	21.5%	
Advanced Practice Providers	Count	16	6	22
	% APPs	72.7%	27.3%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

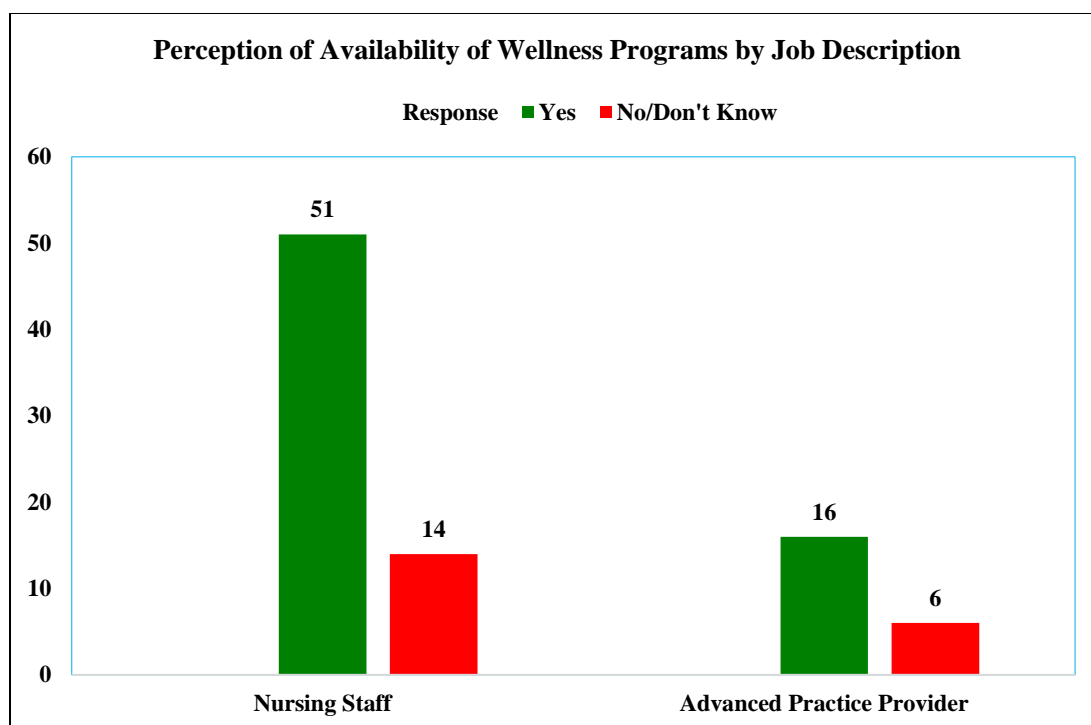


Figure 21. Bar Chart of Responses to Question #6 on the Wellness Participation Survey by Job Description: Does your employing hospital currently have a health & wellness program?

Table 21a		
<i>Results of Chi-Square Test for Response to Question #6 on the Wellness Participation Survey by Job Description</i>		
χ^2	df	p
0.305	1	0.581
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Based on the data collected by the *Wellness Participation Survey* reported on Table 21 and the results of the Chi-square Test reported on Table 21a, it was concluded that there was not a statistically significant difference in the perception of availability of a health and wellness programs by job description from both selected hospitals.

Table 22				
<i>Frequency of Response to Question #6 by Hospital Type: Does your employing hospital currently have a health and wellness program?</i>				
Hospital Type		Survey Responses		Total
		Yes	No/Do not Know	
County Hospital	Count	21	14	35
	% County	60.0%	40.0%	
State Hospital	Count	46	6	52
	% State	88.5%	11.5%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

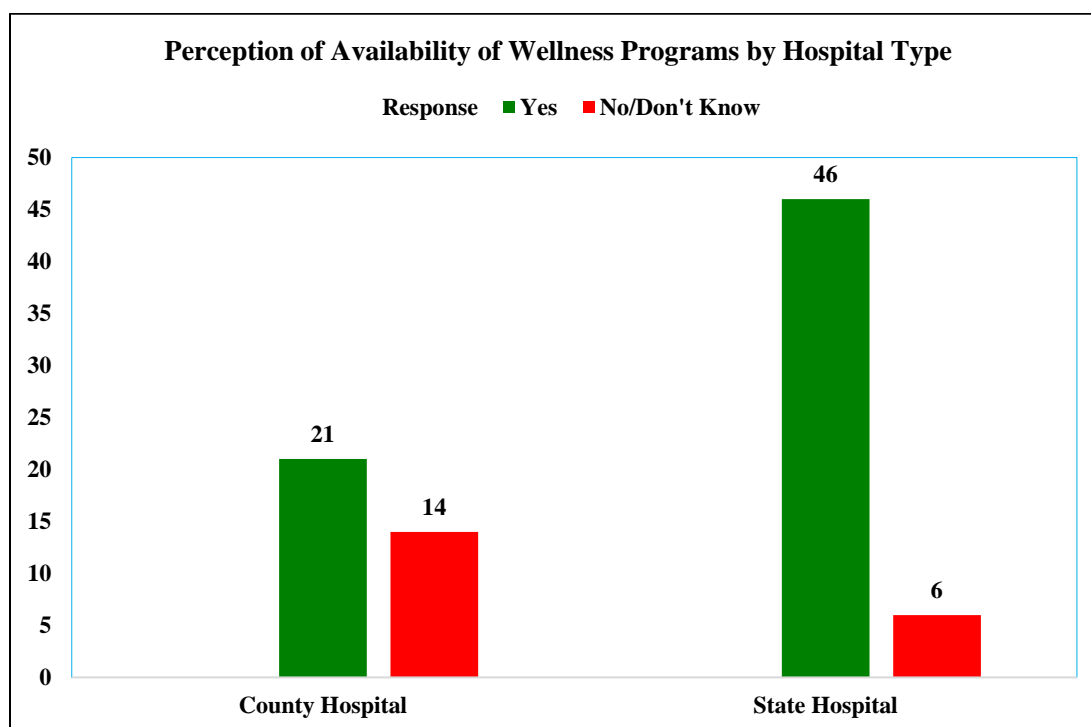


Figure 22. Bar Chart of Responses to Question #6 on the *Wellness Participation Survey* by Hospital Type: Does your employing hospital currently have a health & wellness program?

Table 22a		
<i>Results of Chi-Square Test for Response to Question #6 on the Wellness Participation Survey by Hospital Type</i>		
χ^2	df	p
9.572	1	0.002
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Based on the data collected by the *Wellness Participation Survey* reported on Table 22 and the results of the Chi-square Test on Table 22a, it was concluded that the hospital nursing employees at the state funded hospital are significantly more likely to be aware of their health & wellness programs availability than the county funded hospital at the 0.05 level of significance.

Table 23				
<i>Frequency of Response to Question #6 by Age Group: Does your employing hospital currently have a health and wellness program?</i>				
Age Group		Survey Responses		Total
		Yes	No/Do not Know	
22-30 years	Count	9	5	14
	% within 22-30	64.3%	35.7%	
31-40 years	Count	28	6	34
	% within 31-40	82.4%	17.6%	
41-50 years	Count	19	7	26
	% within 41-50	73.1%	26.9%	
51-above	Count	11	2	13
	% within 51 +	84.6%	15.4%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

Table 23a			
<i>Results of Chi-Square Test and Linear-by-Linear Association Test of Responses to “Does your employing hospital currently have a health & wellness program?” by Age Group</i>			
Test	χ^2	df	p
Chi-square	2.481	3	0.479
Linear-by-linear	0.554	1	0.457
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>			

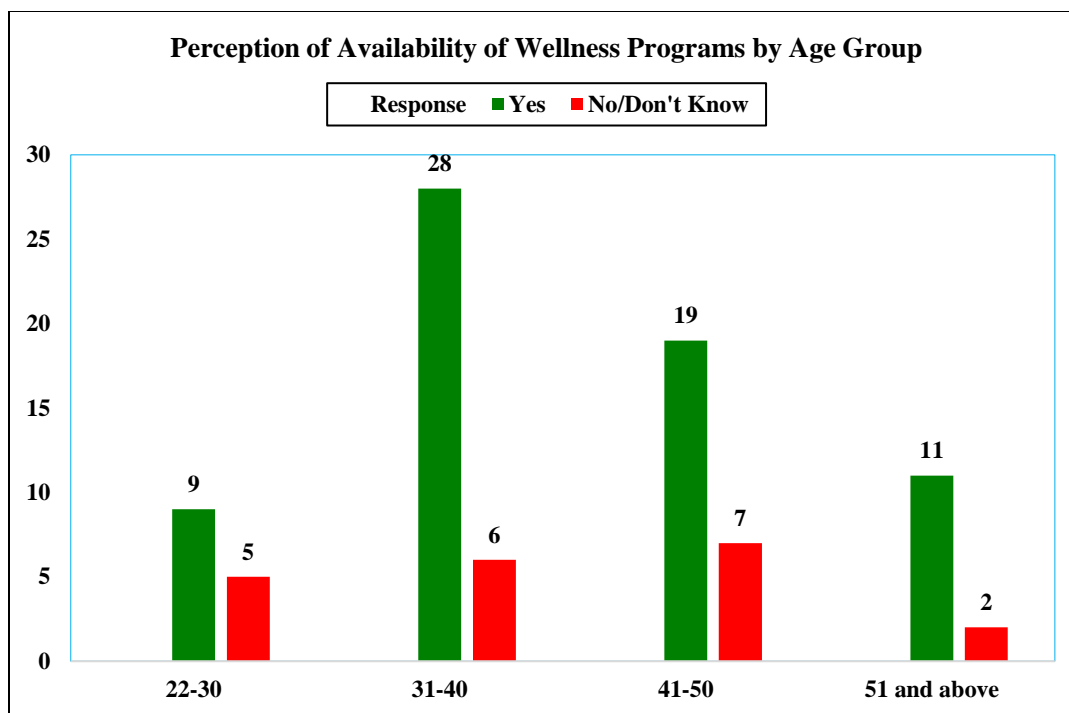


Figure 23. Bar Chart of Responses to Question #6 on the Wellness Participation Survey by Age Group: Does your employing hospital currently have a health & wellness program?

Both Chi-square and Linear-by-Linear Association Tests were used for responses to Question #6 by age group on the *Wellness Participation Survey* questionnaire because it may or may not be that awareness increases or decreases with age (tested with the Linear-by-Linear Association Test). For example, the 31-40 years age group in the data collected as displayed on Table 23 and Figure 23 had more knowledge with respect to survey question #6 than the younger and next older groups. Either way, it was concluded that there was no statistically significant difference in awareness of the health and wellness programs among various age groups at the 0.05 level of significance.

Table 24				
<i>Frequency of Response to Question #6 by Race: Does your employing hospital currently have a health and wellness program?</i>				
Race		Survey Responses		Total
		Yes	No/Do not Know	
African American or Black	Count	8	2	10
	% within Race	80.0%	20.0%	
Asian or Pacific Islander	Count	27	3	30
	% within Race	90.0%	10.0%	
Hispanic	Count	3	3	6
	% within Race	50.0%	50.0%	
Other or Mixed Race	Count	3	1	4
	% within Race	75.0%	25.0%	
White Caucasian	Count	26	11	37
	% within Race	70.3%	29.7%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

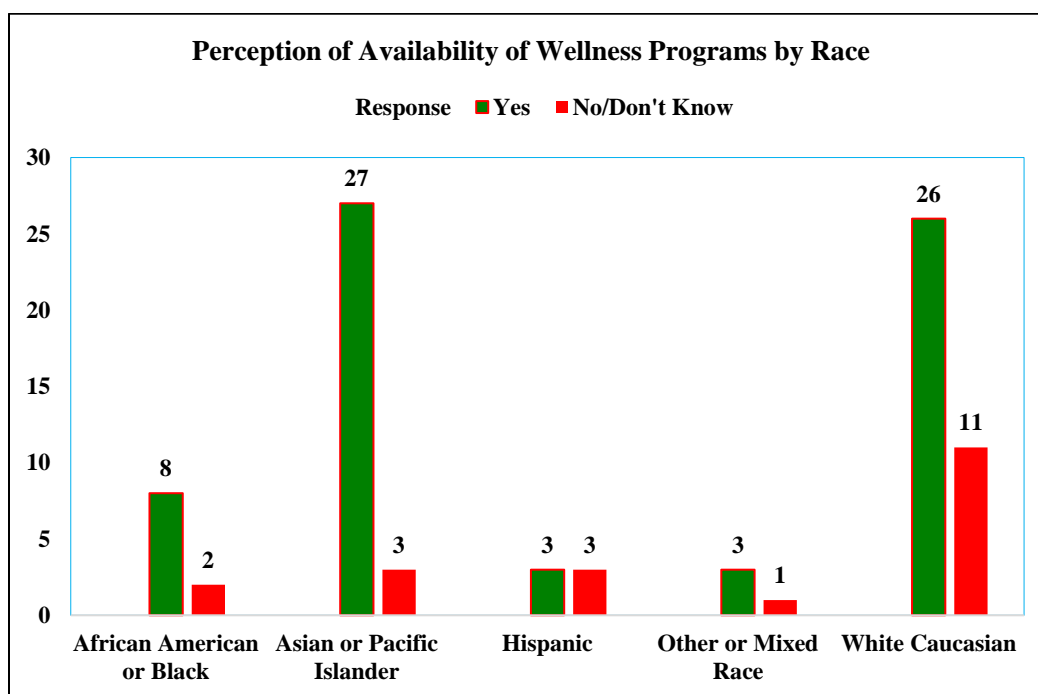


Figure 24. Bar Chart of Responses to Question #6 on the Wellness Participation Survey by Race: Does your employing hospital currently have a health & wellness program?

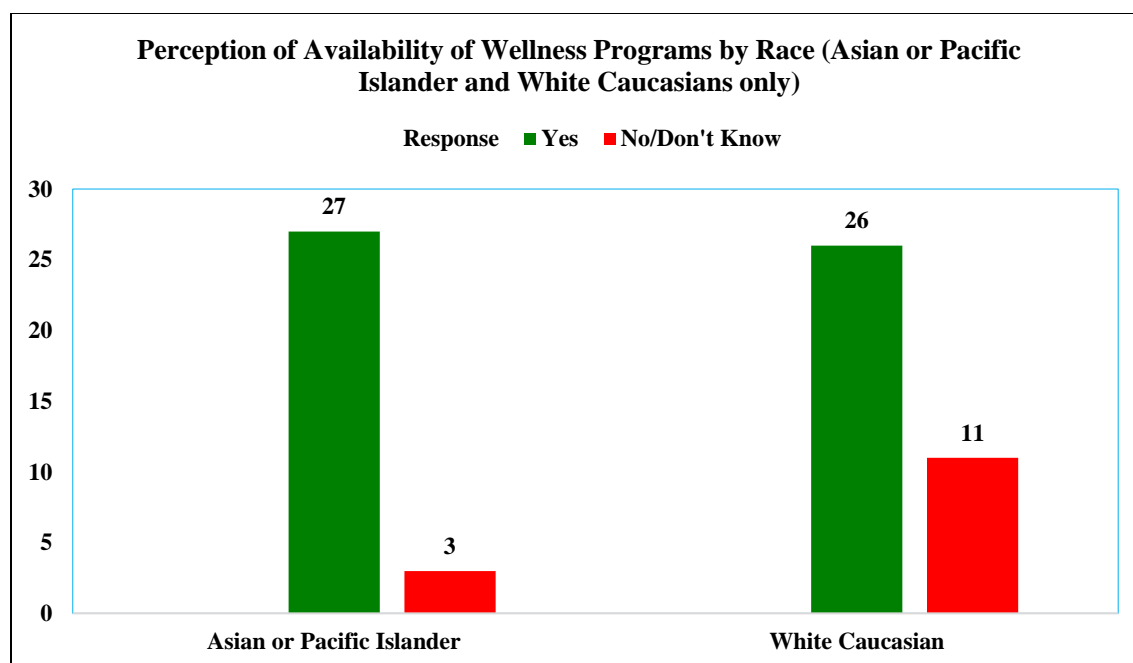


Figure 24a. Bar Chart of Responses to Question #6 on the Wellness Participation Survey by Race (Asian or Pacific Islander & White Caucasians only): Does your employing hospital currently have a health & wellness program?

Table 24a		
<i>Results of Chi-Square Test for Response to Question #6 on the Wellness Participation Survey by Race (Asian or Pacific Islander and White Caucasians only)</i>		
χ^2	df	p
3.902	4	0.048
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response data on <i>REDCap</i> .		

Based on the data collected by the *Wellness Participation Survey* as reported on Table 24 and the results of the Chi-square Test as depicted on Table 24a, it was concluded that the Asian or Pacific Islander hospital nursing staff are significantly more likely to be aware of their health and wellness programs than the White Caucasian hospital nursing employees at the 0.05 level of significance.

Perception of Availability of Wellness Programs for Employee Family Members

Table 25				
<i>Frequency of Response to Question #7 by Job Description: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?</i>				
Job Description		Survey Responses		Total
		Yes	No/Do not Know	
Clinical Nursing Staff	Count	31	32	63
	% RNs	49.2%	50.8%	
Advanced Practice Providers	Count	10	12	22
	% APPs	45.5%	54.5%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

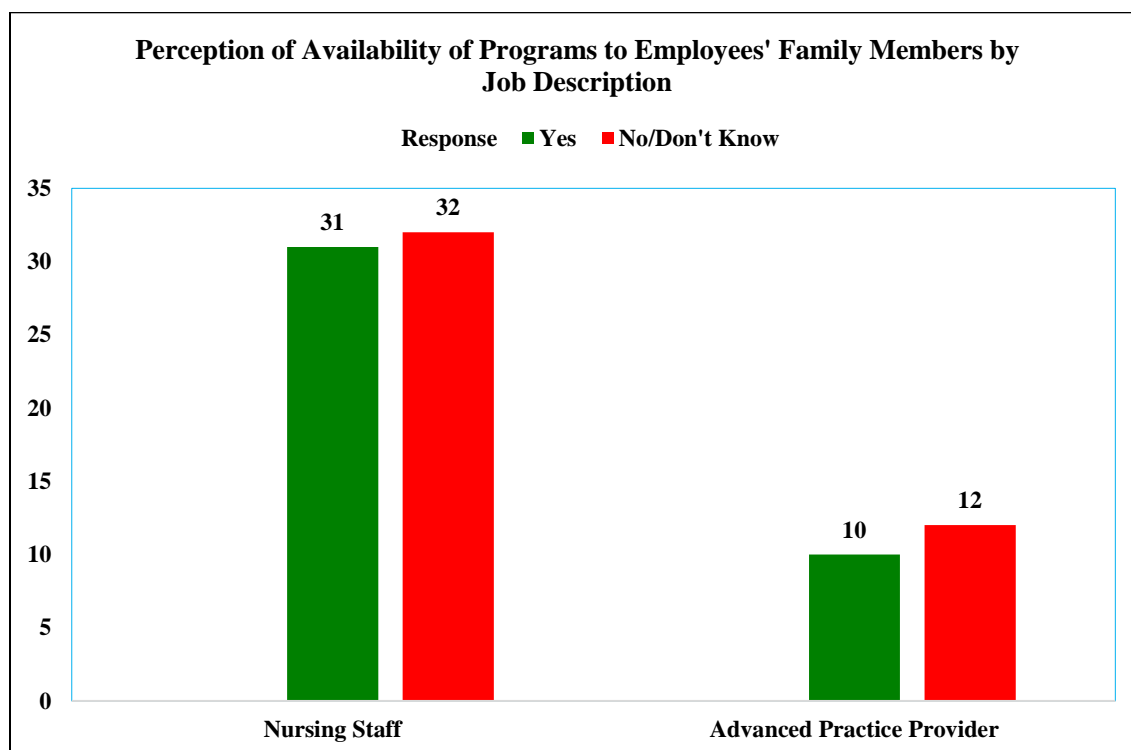


Figure 25. Bar Chart of Responses to Question #7 on the *Wellness Participation Survey* by Job Description: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?

Table 25a		
<i>Results of Chi-Square Test for Response to Question #7 on the Wellness Participation Survey by Job Description</i>		
χ^2	df	p
0.092	1	0.762
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Based on the data collected by the *Wellness Participation Survey* as reported on Table 25 and the results of the Chi-square Test as depicted on Table 25a, it was concluded that there was not a statistically significant difference in perception of availability of wellness programs to the immediate family members of the hospital employees by job description.

Table 26				
<i>Frequency of Response to Question #7 by Hospital Type: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?</i>				
Hospital Type		Survey Responses		Total
		Yes	No/Do not Know	
County Hospital	Count	10	25	35
	% County	28.6%	71.4%	
State Hospital	Count	31	19	50
	% State	62.0%	38.0%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

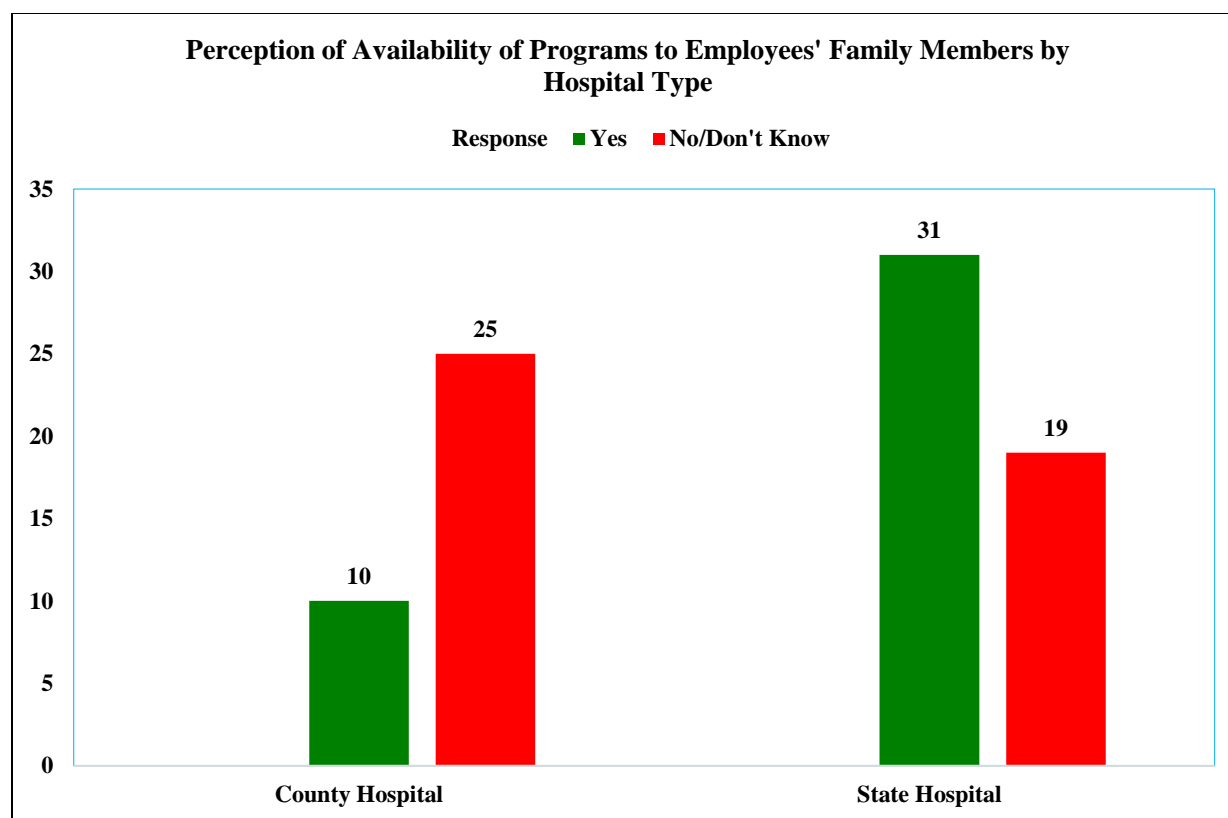


Figure 26. Bar Chart of Responses to Question #7 on the *Wellness Participation Survey* by Hospital Type: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?

Table 26a		
<i>Results of Chi-Square Test for Response to Question #7 on the Wellness Participation Survey by Hospital Type</i>		
χ^2	df	p
9.214	1	0.002
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Based on the data collected by the *Wellness Participation Survey* as reported on Table 26 and the results of the Chi-square Test as depicted on Table 26a, it was concluded that the state hospital nursing employees are significantly more likely to be aware that their health and

wellness program benefits are also available to their immediate family members compared to county hospital employees at the 0.05 level of significance.

Table 27				
<i>Frequency of Response to Question #7 by Age Group: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?</i>				
Age Group		Survey Responses		Total
		Yes	No/Do not Know	
22-30 years	Count	4	10	14
	% within 22-30	28.6%	71.4%	
31-40 years	Count	19	14	33
	% within 31-40	57.6%	42.4%	
41-50 years	Count	14	11	25
	% within 41-50	56.0%	44.0%	
51-above	Count	4	9	13
	% within 51 +	30.8%	69.2%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

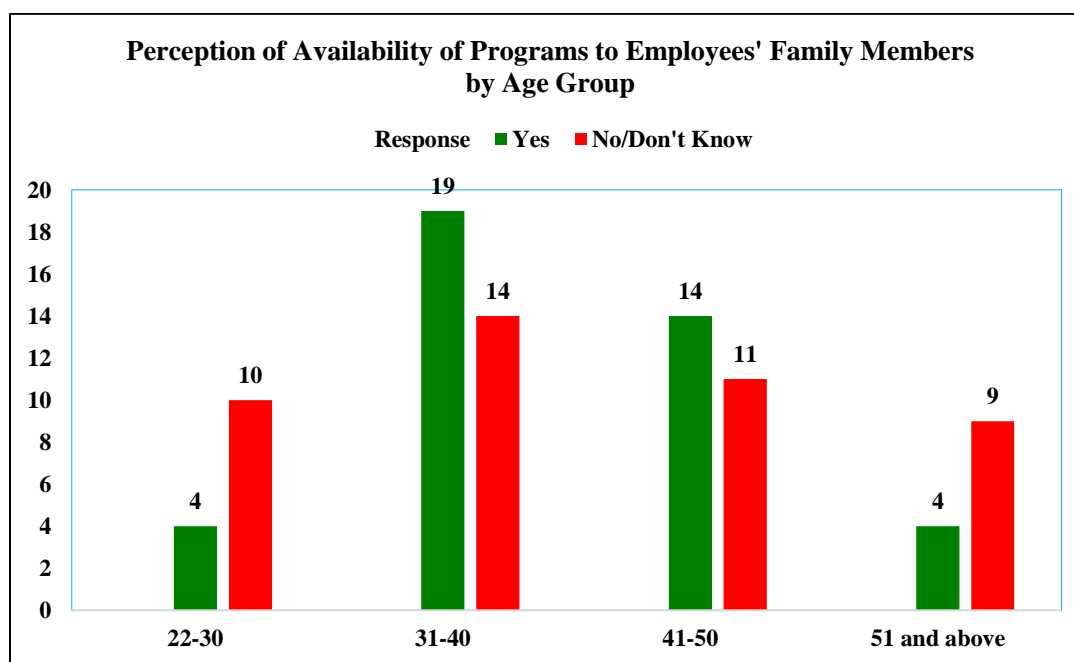


Figure 27. Bar Chart of Responses to Question #7 on the *Wellness Participation Survey* by Age Group: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?

Table 27a			
<i>Results of Chi-Square Test and Linear-by-Linear Association Test of Responses to “Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?” by Age Group</i>			
Tests	χ^2	df	p
Chi-square	5.513	3	0.138
Linear-by-linear	0.001	1	0.972
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>			

Both Chi-square and Linear-by-Linear Association Tests were used for responses to Question #7 by age group on the *Wellness Participation Survey* questionnaire because it may or may not be that awareness increases or decreases with age (tested with the Linear-by-Linear Association Test). However, either way, there was no statistically significant difference in awareness of the health and wellness programs among various age groups at the 0.05 level of significance.

Table 28				
<i>Frequency of Response to Question #7 by Race: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?</i>				
Race		Survey Responses		Total
		Yes	No/Do not Know	
African American or Black	Count	5	5	10
	% within Race	50.0%	50.0%	
Asian or Pacific Islander	Count	20	8	28
	% within Race	71.4%	28.6%	
Hispanic	Count	0	6	6
	% within Race	0.0%	100.0%	
Other or Mixed Race	Count	2	2	4
	% within Race	50.0%	50.0%	
White Caucasian	Count	14	23	37
	% within Race	37.8%	62.2%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

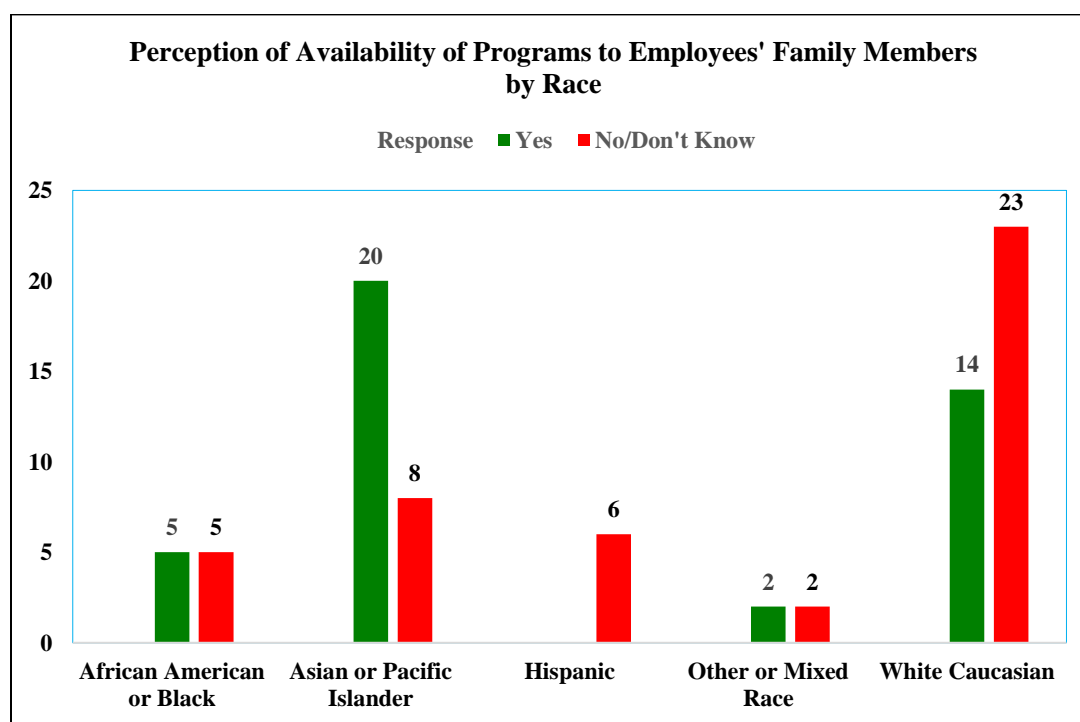


Figure 28. Bar Chart of Responses to Question #7 on the Wellness Participation Survey by Race: Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?

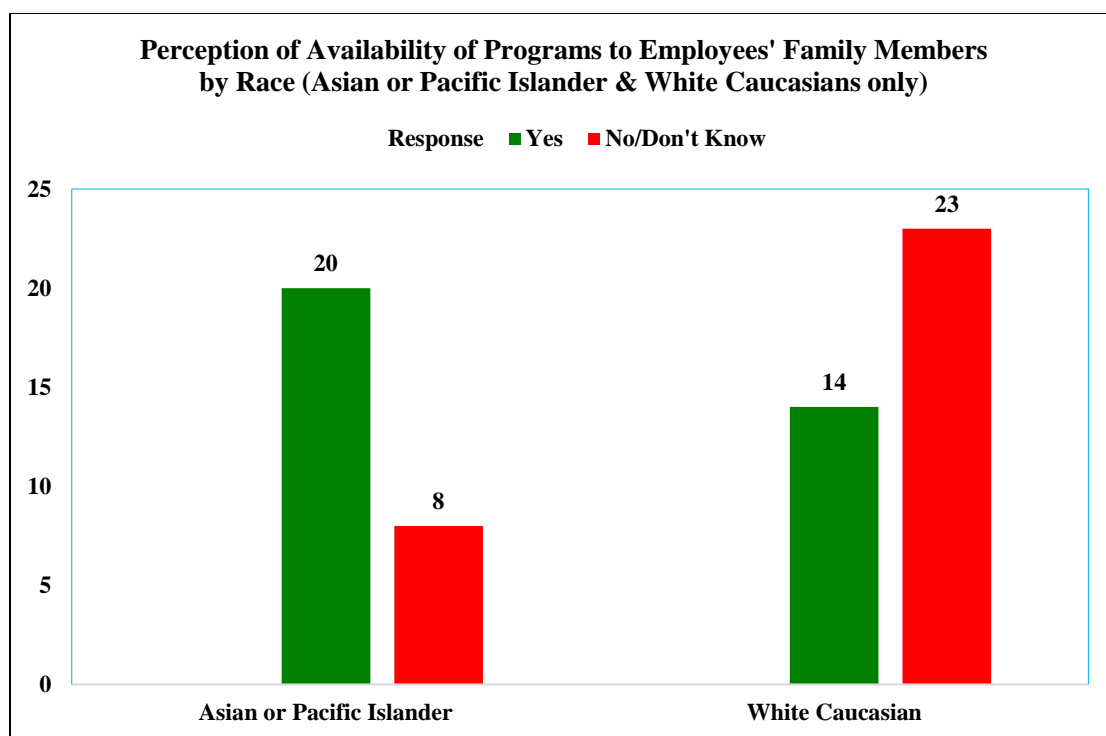


Figure 28a. Bar Chart of Responses to Question #7 on the *Wellness Participation Survey* by Race (Asian or Pacific Islander & White Caucasians only): Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?

Table 28a		
<i>Results of Chi-Square Test for Response to Question #7 on the Wellness Participation Survey by Race (Asian or Pacific Islander and White Caucasians only)</i>		
χ^2	df	p
13.243	4	0.010
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Based on the results of the collected survey data as shown on Table 28 and the results of the Chi-square Test on Table 28a, it is concluded that the Asian or Pacific Islander hospital employees are significantly more likely to be aware that their immediate family members have access to their health & wellness programs than White Caucasian hospital employees at the 0.05 level of significance.

Brief Summary of Significant Results: State public hospital nursing employees are significantly more likely to be aware of their health and wellness programs and that those wellness program benefits are also accessible/available to their immediate family members, when compared to county funded public hospital staff. Additionally, Asian or Pacific Islander hospital nursing staff are significantly more likely to be aware of their health and wellness programs, and also that those wellness program benefits are also available to their immediate family members, when compared to White Caucasian hospital staff. However, it is possible there was some level of “confounding” occurring, since more Asian or Pacific Islander staff members responded to the *Wellness Participation Survey* from the state funded teaching hospital as opposed to the county funded public hospital staff.

Perception of Number of Established Wellness Programs

Table 29							
<i>Summary Statistics of Perceived Number of Established Wellness Program Benefits, by Job Description and Hospital Type</i>							
Hospital Type	Job Description	N	Mean	Median	Standard Deviation	Min.	Max.
County	Nursing Staff	25	8.60	7	6.232	1	19
County	Advanced Practice Provider	10	9.30	8.5	6.111	1	18
State	Nursing Staff	40	13.55	17	6.197	1	20
State	Advanced Practice Provider	12	11.67	11	7.203	1	20
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response data on <i>REDCap</i> .							

The perceived number of established and available hospital-based workplace wellness program benefits are not normally distributed. Non-parametric tests were used to compare the

different demographic groups to one another and separately for county and state hospitals, as the true number of available programs are different between the two hospital types. It is more appropriate to display medians than means in the figure with the use of non-parametric tests.

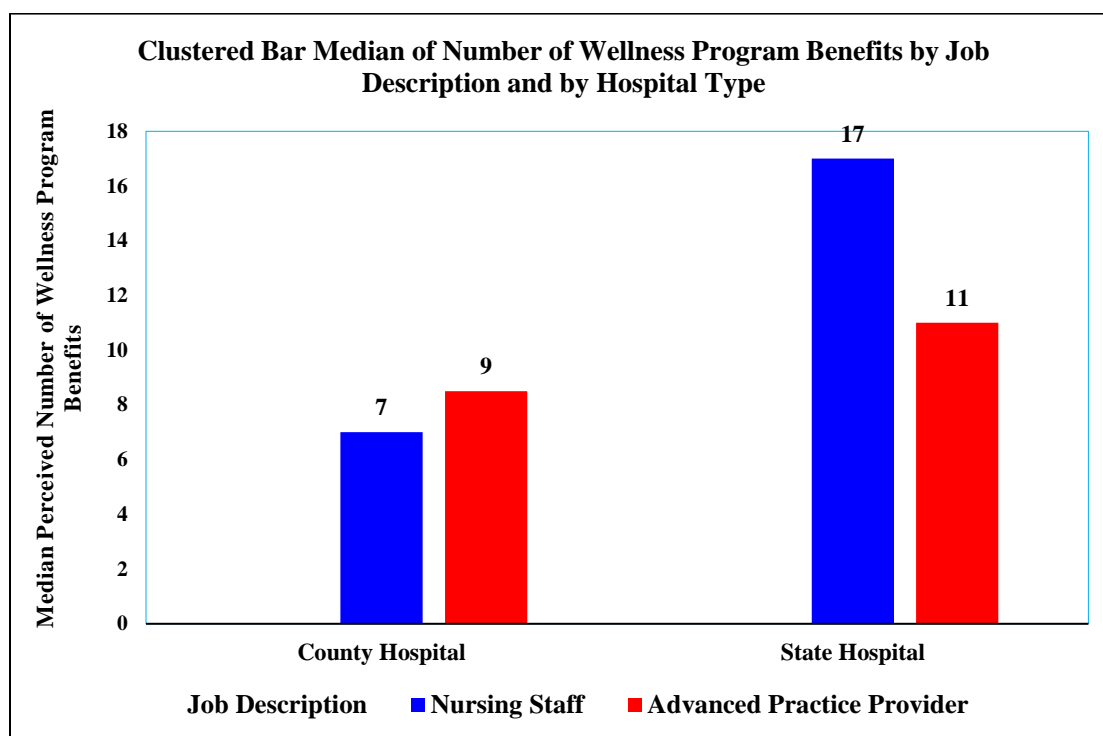


Figure 29. Bar Chart of Perceived Number of Wellness Program Benefits, by Job Description and Hospital Type

Non-parametric test used to compare the median perceived number of wellness program benefits across the two job descriptions was the Mann-Whitney Test. This test was appropriate for non-normally distributed outcomes when compared between two different independent groups. The results of the Mann-Whitney Tests for both county funded and state funded hospitals are presented in Table 29a.

Table 29a		
<i>Results of the Mann-Whitney U Test for Perceived Number of Wellness Program Benefits by Job Description</i>		
Hospital Type	Mann-Whitney U	p
County	118	0.798
State	213.5	0.557
<i>Note:</i> Adapted from the <i>Wellness Participation Survey</i> response data on <i>REDCap</i> .		

The Mann-Whitney Test includes a Mann-Whitney U Statistic and a p value, which was compared to 0.05 level of significance. The results did not find a statistically significant difference in the perceived number of wellness program benefits by job description for either county or state hospitals at the 0.05 level of significance.

<i>Summary Statistics of Perceived Number of Wellness Program Benefits, by Age Group and Hospital Type</i>							
Hospital Type	Age Group	N	Mean	Median	Standard Deviation	Min.	Max.
County Hospital	22-30	8	7.38	6	5.153	2	18
	31-40	15	8.07	6	6.638	1	18
	41-50	8	9.88	8	6.875	1	19
	51 and above	4	12.25	12.5	4.349	8	16
State Hospital	22-30	6	13.50	16.5	6.979	3	19
	31-40	19	14.37	17	5.795	1	20
	41-50	18	13.44	18.5	6.989	1	20
	51 and above	9	9.56	7	5.876	4	19

Note: Adapted from the *Wellness Participation Survey* response data on REDCap.

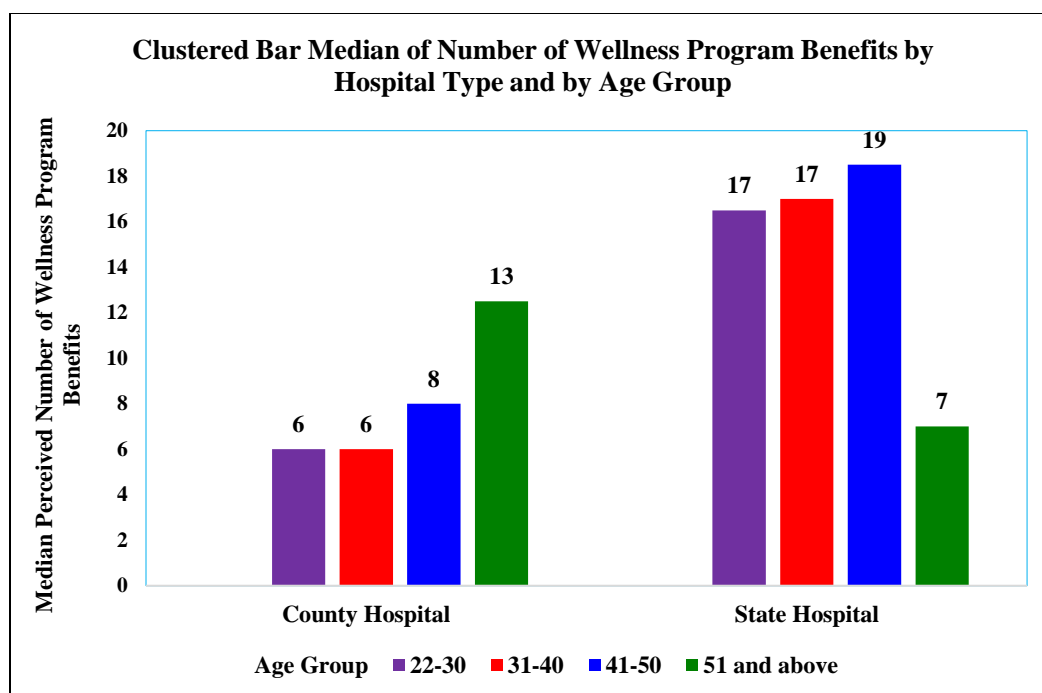


Figure 29a. Bar Chart of Perceived Number of Wellness Program Benefits, by Hospital Type and Age Group.

Since there are more than two age groups to compare, Kruskal-Wallis Test was used instead of a Mann-Whitney Test. Kruskal-Wallis is the equivalent of a Mann-Whitney U Test when there are more than two groups to compare. Age groups being ordinal in addition to being categorical, Spearman's Rho, a non-parametric correlation statistic was also used to determine whether there is a significant age-related trend (i.e., whether perceived number of benefits increases or decreases with age). Results of both these statistics are shown in Table 29c.

Table 29c					
Results of Kruskal-Wallis Test and Spearman's Rho Correlations for Perceived Number of Wellness Program Benefits by Age Group					
Hospital Type	Kruskal-Wallis H	df	P (for H)	Spearman's ρ	p (for ρ)
County	1.972	3	0.578	0.206	0.236
State	3.666	3	0.300	-0.173	0.219
Note: Adapted from the <i>Wellness Participation Survey</i> response data on REDCap.					

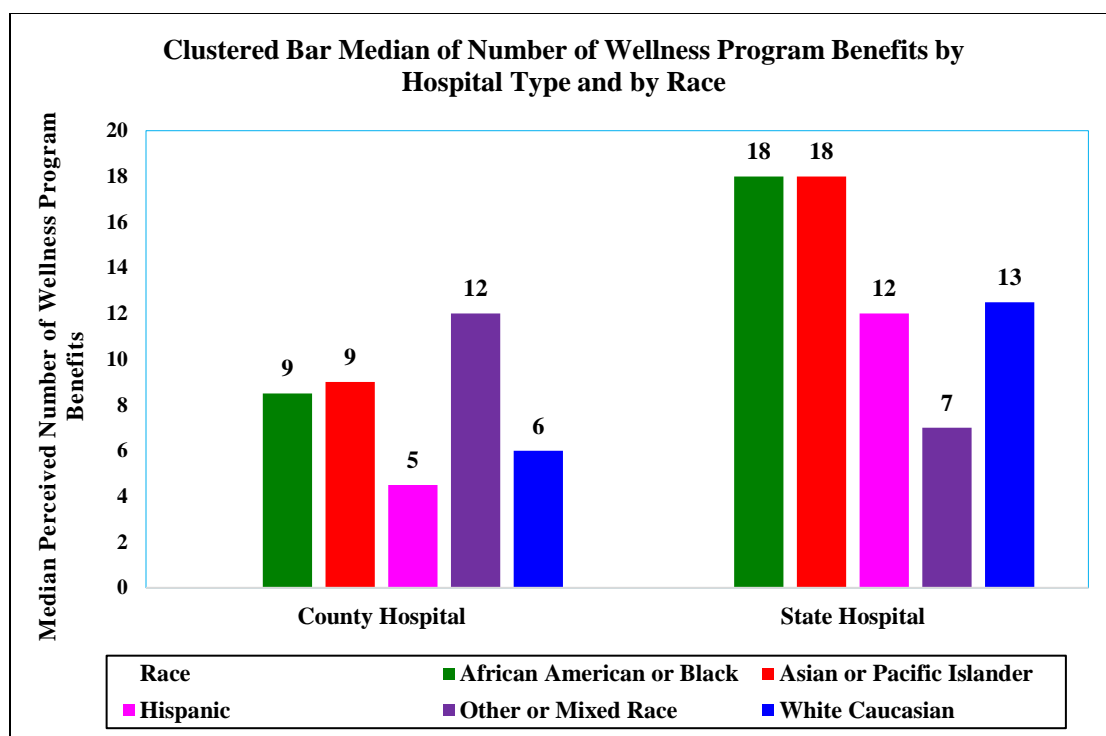


Figure 29b. Bar Chart of Perceived Number of Program Benefits, by Race and by Hospital Type

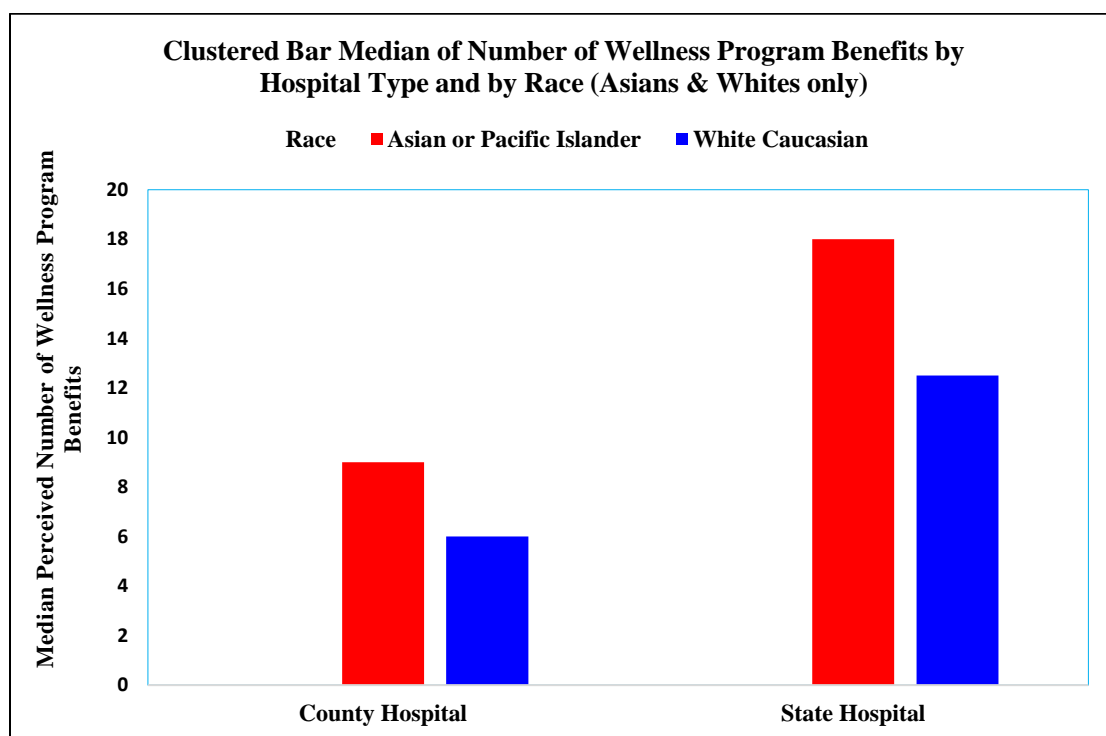


Figure 29c. Bar Chart of Perceived Number of Program Benefits, by Race (Asian or Pacific Islander & White Caucasians only) and by Hospital Type

Table 29e		
<i>Results of Mann-Whitney U Test for Perceived Number of Wellness Program Benefits by Race (Asian or Pacific Islander & White Caucasians only)</i>		
Hospital Type	Mann-Whitney U	p
County	45.5	0.372
State	188.5	0.303
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

It was concluded that there was no statistically significant difference in perceived number of wellness program benefits by race also at the 0.05 level of significance.

Overall, there were no statistically significant differences in the perceived number of wellness program benefits according to any of the demographic variables.

Perception of Positive Incentives and Penalties

Table 30				
<i>Frequency of Response to Positive Incentives by Job Description</i>				
Job Description		Positive Incentives		Total
		Yes	No/Do not Know	
Clinical Nursing Staff	Count	33	31	64
	% RNs	51.6%	48.4%	
Advanced Practice Providers	Count	9	13	22
	% APPs	40.9%	59.1%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

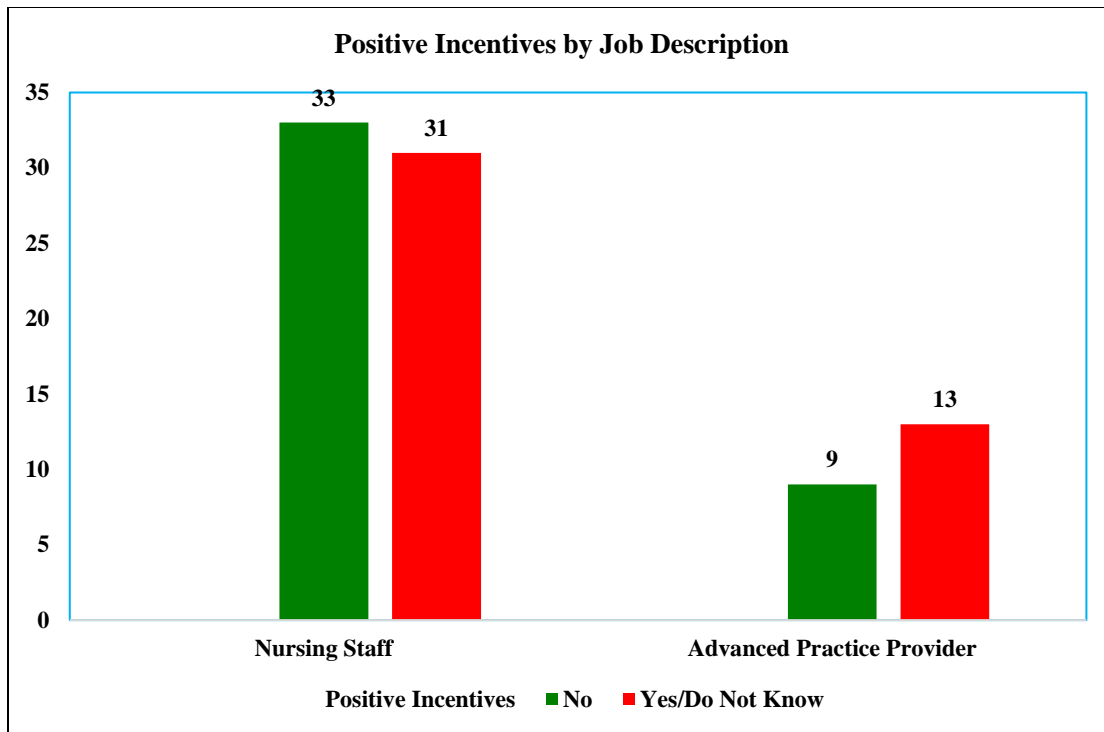


Figure 30. Bar Chart for Response Frequency to Positive Incentives by Job Description

Table 30a		
<i>Results of Chi-Square Test for Response to Question #10 on the Wellness Participation Survey by Job Description: Does the hospital offer positive incentives to employees who participate in health & wellness program?</i>		
χ^2	df	p
0.744	1	0.388
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Based on the survey data collection on Table 30 relating to question #10 in *Wellness Participation Survey* and the corresponding Chi-square Test person on Table 30a, there was no statistically significant difference in the response to the positive incentives question (#10) by job description at the 0.05 level of significance.

Table 31				
Frequency of Response to Positive Incentives by Hospital Type				
Hospital Type		Survey Responses		Total
		Yes	No/Do not Know	
County Hospital	Count	14	21	35
	% County	40.0%	60.0%	
State Hospital	Count	28	23	51
	% State	54.9%	45.1%	
Note: Adapted from the Wellness Participation Survey response data on REDCap.				

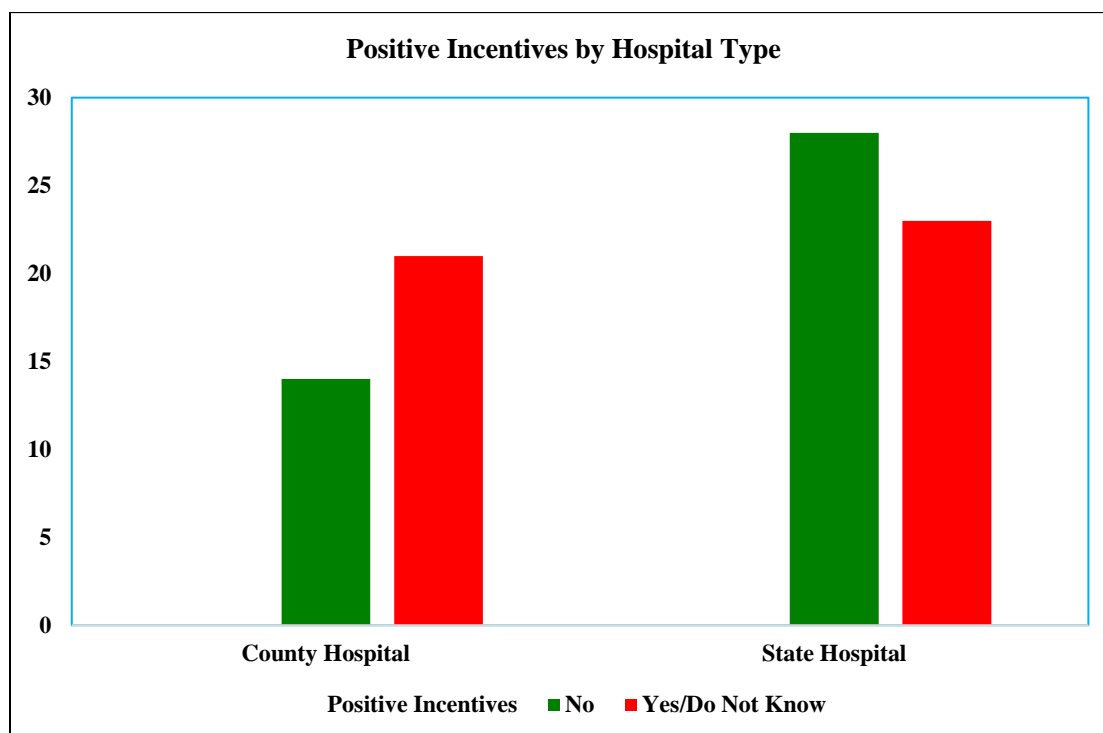


Figure 31. Bar Chart for Response Frequency to Positive Incentives by Hospital Type

Table 31a		
<i>Results of Chi-Square Test for Response to Question #10 on the Wellness Participation Survey by Hospital Type: Does the hospital offer positive incentives to employees who participate in health & wellness program?</i>		
χ^2	df	p
1.845	1	0.174
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

Based on the survey data collection on Table 31 relating to question #10 in *Wellness Participation Survey* and the corresponding Chi-square Test person on Table 31a, there was no statistically significant difference in the response to the positive incentives question by hospital type at the 0.05 level of significance. Similar statistical tests were performed for responses to question #10 on positive incentives and there were no statistically significant differences found based on age group and race.

Table 32				
<i>Frequency of Response to Penalties by Job Description</i>				
Job Description		Positive Incentives		Total
		Yes	No/Do not Know	
Clinical Nursing Staff	Count	44	21	64
	% RNs	67.7%	32.3%	
Advanced Practice Providers	Count	15	7	22
	% APPs	68.2%	31.8%	
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

Table 32a		
<i>Results of Chi-Square Test for Response to Question #11 on the Wellness Participation Survey by Job Description: Does the hospital impose penalties on employees who participate in health & wellness program?</i>		
χ^2	df	p
0.002	1	0.966
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

There were no statistically significant differences found in the responses to the penalties question #11 by job description at the 0.05 level of significance.

Table 33				
Frequency of Response to Penalties by Hospital Type				
Hospital Type		Survey Responses		Total
		Yes	No/Do not Know	
County Hospital	Count	20	15	35
	% County	57.1%	42.9%	
State Hospital	Count	39	13	52
	% State	75.0%	25.0%	
Note: Adapted from the Wellness Participation Survey response data on REDCap.				

Table 33a		
<i>Results of Chi-Square Test for Response to Question #11 on the Wellness Participation Survey by Hospital Type: Does the hospital impose penalties on employees who participate in health & wellness program?</i>		
χ^2	df	p
3.056	1	0.080
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>		

There were no statistically significant differences found in the responses to the penalties question #11 by hospital type at the 0.05 level of significance. Similar statistical tests were performed for responses to question #11 on penalties and there were no statistically significant differences found based on age group and race. However, Asian or Pacific Islander hospital nursing employees were significantly more likely than any other ethno-racial hospital employees to correctly answer question #11, that there are no penalties imposed by either of the two selected public teaching hospitals for not participating in the hospital wellness programs at the 0.05 level of significance.

Perception of Specific Incentives

Table 34					
<i>Frequency Distributions of Incentives by Job Description</i>					
Nursing Staff (RN)			Advanced Practice Provider (APP)		
Incentive	N	Proportion	Incentive	N	Proportion
Premium discounts	65	63.0%	Gift Cards/Cash	22	77.0%
Gift Cards/Cash	65	62.0%	Travel Tickets for a Vacation	22	59.0%
Travel Tickets for a Vacation	65	57.0%	Premium discounts	22	55.0%
Lower deductibles	65	57.0%	Lower deductibles	22	45.0%
Subsidized health club memberships	65	31.0%	Subsidized health club memberships	22	32.0%
Higher employer health savings accounts	65	25.0%	Higher employer health savings accounts	22	14.0%
Recognition	65	23.0%	Recognition	22	9.0%
Small tokens	65	11.0%	Small tokens	22	0.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>					

In Table 34, the incentives within each of the two job descriptions are sorted by response percentage, according to the proportion the respondents agreed they would prefer that incentive for question #13 on the *Wellness Participation Survey*. The highest preference of incentives which the RNs in clinical practice preferred was for ‘premium discounts’ whereas APPs indicated their highest preference to be gift ‘cards/cash.’

In order to determine whether this difference in preferences were statistically significant, a repeated measures logistic regression statistic was used. This kind of analysis was appropriate when outcomes are yes/no type outcomes or prefer/do not prefer (which is the case in question

#13 in the *Wellness Participation Survey*). It can be used when respondents have multiple measures in the data set. In the case of survey question # 13, each respondent had choice of all eight potential incentives. This kind of analysis accounts for the lack of independence among measures from the same individuals. The independent variables (also called predictors) are the job description, the type of incentive, and the interaction of the two. The dependent variable was whether the respondent had a preference expressed for specific incentive(s). The interaction is the important term; it tells us whether the pattern of preferences was different for the two job descriptions. Because ‘Small tokens’ was not selected at all by any APP, it was not included in the statistical analysis.

Table 34a			
<i>Results of F-Test for Incentives by Job Description</i>			
F	df1	df2	p
0.913	6	595	0.485

Table 34a displays the test of the interaction term from the repeated measures logistic regression. Other results of the analysis are not reported here, as they are not relevant to this QI study project’s question of inquiry.

Table 35					
<i>Frequency Distributions of Incentives by Hospital Type</i>					
County Hospital			State Hospital		
Incentive	N	Proportion	Incentive	N	Proportion
Gift Cards/Cash	35	63.0%	Gift Cards/Cash	52	67.0%
Lower deductibles	35	63.0%	Premium discounts	52	65.0%
Travel Tickets for a Vacation	35	54.0%	Travel Tickets for a Vacation	52	60.0%
Premium discounts	35	54.0%	Lower deductibles	52	48.0%
Subsidized health club memberships	35	34.0%	Subsidized health club memberships	52	35.0%
Higher employer health savings accounts	35	29.0%	Recognition	52	21.0%
Recognition	35	17.0%	Higher employer health savings accounts	52	17.0%
Small tokens	35	9.0%	Small tokens	52	8.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>					

Table 35a			
<i>Results of F-Test for Incentives by Hospital Type</i>			
F	df1	df2	p
0.873	6	595	0.514

The F Statistic in Table 34a and 35a are a standardized test statistic that are not interpreted directly. The F Statistic has two degrees of freedom associated with it; the first degree of freedom (df1) are equal to the number of incentives -1, times (x) the number of job descriptions -1 ($7-1 \times 2-1 = 6$). The second degree of freedom are similar to the number of records in the sample, which is the number of participants x number of incentives. Finally, the p values are similar to other p values. Here the p values are not less than 0.05 on both Tables 34a

Upon examination of Table 36, it was concluded that gift cards/cash preference are more popular in the two age groups of (31-40 years and 41-50 years) than they are in the youngest and oldest age groups. Table 36 also depicts that travel tickets for vacation are less popular in the oldest group (51 years or above) when compared to the other age groups which are younger than 51 years of age.

Table 36a			
<i>Results of F-Test for Incentives by Age Group</i>			
F	df1	df2	p
1.985	18	581	0.009

According to Table 36a, there was a statistically significant difference in pattern of preferences for the incentives by age groups at the 0.05 level of significance.

Table 37				
<i>Post-Hoc F-Tests Comparing Incentives by Age Group</i>				
Incentives	F	df1	df2	p
Gift cards/cash	8.316	3	581	< 0.001
Higher employer health savings accounts	0.691	3	581	0.558
Lower deductibles	0.395	3	581	0.757
Premium discounts	0.992	3	581	0.396
Recognition	1.762	3	581	0.153
Subsidized health club memberships	2.291	3	581	0.077
Travel tickets for vacation	3.497	3	581	0.015
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>				

To determine which incentives had significantly different preferences among the various age groups, a series of post-hoc F-Tests are provided in Table 37, which shows that there was a statistically significant difference in preference for gift cards/cash by age group, and likewise a statistically significant difference in travel tickets for vacation by age group at the 0.05 level of significance.

Table 38					
<i>Frequency Distributions of Incentives by Race (Asian or Pacific Islander and White Caucasians only)</i>					
Asian or Pacific Islander			White Caucasian		
Incentive	N	Proportion	Incentive	N	Proportion
Gift Cards/Cash	30	67.0%	Premium discounts	37	68.0%
Travel Tickets for a Vacation	30	57.0%	Travel Tickets for a Vacation	37	62.0%
Premium discounts	30	53.0%	Lower deductibles	37	62.0%
Lower deductibles	30	30.0%	Gift Cards/Cash	37	59.0%
Higher employer health savings accounts	30	23.0%	Subsidized health club memberships	37	51.0%
Subsidized health club memberships	30	20.0%	Higher employer health savings accounts	37	24.0%
Recognition	30	17.0%	Recognition	37	24.0%
Small tokens	30	10.0%	Small tokens	37	8.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>					

Table 38a			
<i>Results of F-Test for Incentives by Race (Asians and Whites only)</i>			
F	df1	df2	p
1.521	6	455	0.169

Based on the F-Test results depicted in Table 38a, the pattern of preferences for the incentives was not significantly different by race at the 0.05 level of significance.

The only significant differences in the pattern of preference for the incentives was by age group as displayed in Table 36a and Table 37. The age groups are different with respect to their level of preference for gift cards/cash with the two middle age groups having the highest preference for them and the youngest and oldest groups having the lowest preference for gift cards/cash. The age groups also are different with respect to their preference for travel tickets for a vacation with the oldest group having less preference for it compared to the other three age groups.

Perception of Barriers

Table 39					
<i>Frequency Distributions of Barriers by Job Description</i>					
Nursing Staff			Advanced Practice Provider		
Barrier	N	Proportion Agree/Strongly Agree	Barrier	N	Proportion Agree/Strongly Agree
Non-availability of a gymnasium at workplace for employees	65	95.0%	Distance between workplace, workout sites and home	21	90.0%
Long working hours.	64	89.0%	Long working hours.	22	86.0%
Lack of incentives	65	89.0%	Non-availability of a gymnasium at workplace for employees	22	86.0%
Distance between workplace, workout sites and home	65	85.0%	Lack of incentives	22	82.0%
Work-related stress	65	80.0%	Work-related stress	22	77.0%
Family obligations	64	77.0%	Odd shifts (switch between day, evening and night shifts).	22	73.0%
Odd shifts (switch between day, evening and night shifts).	63	65.0%	Family obligations	22	73.0%
Worries about security of personal health information online	65	26.0%	Worries about security of personal health information online	22	27.0%
Privacy reasons	65	23.0%	Privacy reasons	22	18.0%
Lack of comfort in using internet access to utilize online health programs	64	22.0%	Lack of comfort in using internet access to utilize online health programs	22	18.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>					

Table 39a			
<i>Results of F-Test for Barriers by Job Description</i>			
F	df1	df2	p
0.446	9	844	0.910

Based on the results of the F-Test depicted on Table 39a, the pattern of agreement with each barrier was not significantly different by job description at the 0.05 level of significance.

Table 40					
<i>Frequency Distributions of Barriers by Hospital Type</i>					
County Hospital			State Hospital		
Barrier	N	Proportion Agree/Strongly Agree	Barrier	N	Proportion Agree/Strongly Agree
Non-availability of a gymnasium at workplace for employees	35	97.0%	Non-availability of a gymnasium at workplace for employees	52	90.0%
Long working hours.	35	94.0%	Lack of incentives	52	87.0%
Lack of incentives	35	89.0%	Distance between workplace, workout sites and home	51	86.0%
Distance between workplace, workout sites and home	35	86.0%	Work-related stress	52	85.0%
Odd shifts (switch between day, evening and night shifts).	35	71.0%	Long working hours.	51	84.0%
Work-related stress	35	71.0%	Family obligations	52	83.0%
Family obligations	34	65.0%	Odd shifts (switch between day, evening and night shifts).	50	64.0%

Table 40					
<i>Frequency Distributions of Barriers by Hospital Type</i>					
County Hospital			State Hospital		
Privacy reasons	35	23.0%	Worries about security of personal health information online	52	29.0%
Worries about security of personal health information online	35	23.0%	Lack of comfort in using internet access to utilize online health programs	51	22.0%
Lack of comfort in using internet access to utilize online health programs	35	20.0%	Privacy reasons	52	21.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>					

Table 40a			
<i>Results of F-Test for Barriers by Hospital Type</i>			
F	df1	df2	p
1.123	9	844	0.343

Based on the results of the F-Test depicted on Table 40a, the pattern of agreement with each barrier was not significantly different by hospital type at the 0.05 level of significance.

Table 41											
<i>Frequency Distribution of Barriers by Age Group</i>											
22-30			31-40			41-50			51 and above		
Barrier	N	Prop.	Barrier	N	Prop.	Barrier	N	Prop.	Barrier	N	Prop.
Long working hours.	14	93.0%	Non-availability of a gymnasium at workplace for employees	34	97.0%	Distance between workplace, workout sites and home	26	100.0%	Work-related stress	13	92.0%
Non-availability of a gymnasium at workplace for employees	14	93.0%	Long working hours.	34	91.0%	Non-availability of a gymnasium at workplace for employees	26	92.0%	Long working hours.	13	85.0%
Lack of incentives	14	93.0%	Distance between workplace, workout sites and home	34	91.0%	Lack of incentives	26	88.0%	Non-availability of a gymnasium at workplace for employees	13	85.0%
Work-related stress	14	79.0%	Lack of incentives	34	91.0%	Long working hours.	25	84.0%	Odd shifts (switch between day, evening and night shifts).	13	69.0%
Distance between workplace, workout sites and home	13	69.0%	Family obligations	34	85.0%	Family obligations	26	77.0%	Family obligations	13	69.0%
Odd shifts (switch between day,	14	64.0%	Work-related stress	34	76.0%	Work-related stress	26	77.0%	Lack of incentives	13	69.0%

Table 41

Frequency Distribution of Barriers by Age Group

22-30			31-40			41-50			51 and above		
Barrier	N	Prop.	Barrier	N	Prop.	Barrier	N	Prop.	Barrier	N	Prop.
evening and night shifts).											
Family obligations	13	54.0%	Odd shifts (switch between day, evening and night shifts).	34	71.0%	Odd shifts (switch between day, evening and night shifts).	24	63.0%	Distance between workplace, workout sites and home	13	62.0%
Privacy reasons	14	29.0%	Privacy reasons	34	21.0%	Worries about security of personal health information online	26	23.0%	Worries about security of personal health information online	13	54.0%
Worries about security of personal health information online	14	21.0%	Worries about security of personal health information online	34	21.0%	Lack of comfort in using internet access to utilize online health programs	26	19.0%	Lack of comfort in using internet access to utilize online health programs	12	42.0%
Lack of comfort in using internet access to utilize online health programs	14	21.0%	Lack of comfort in using internet access to utilize online health programs	34	15.0%	Privacy reasons	26	12.0%	Privacy reasons	13	38.0%

Note: Adapted from the *Wellness Participation Survey* response data on REDCap.

Table 41a			
<i>Results of F-Test for Barriers by Age Group</i>			
F	df1	df2	p
1.171	27	824	0.251

Based on the results of the F-Test depicted on Table 41a, the pattern of agreement with each barrier was not significantly different by age group at the 0.05 level of significance.

Table 42					
<i>Frequency Distributions of Barriers by Race (Asian or Pacific Islander and White Caucasians only)</i>					
Asian or Pacific Islander			White Caucasian		
Barrier	N	Proportion Agree/Strongly Agree	Barrier	N	Proportion Agree/Strongly Agree
Distance between workplace, workout sites and home	30	93.0%	Non-availability of a gymnasium at workplace for employees	37	97.0%
Family obligations	30	87.0%	Long working hours.	37	92.0%
Non-availability of a gymnasium at workplace for employees	30	87.0%	Lack of incentives	37	86.0%
Lack of incentives	30	87.0%	Work-related stress	37	81.0%
Long working hours.	29	79.0%	Distance between workplace, workout sites and home	36	81.0%
Work-related stress	30	77.0%	Family obligations	36	69.0%
Odd shifts (switch between day, evening and night shifts).	28	68.0%	Odd shifts (switch between day, evening and night shifts).	37	68.0%
Worries about security of personal health information online	30	27.0%	Privacy reasons	37	19.0%
Lack of comfort in using internet access to utilize online health programs	30	23.0%	Lack of comfort in using internet access to utilize online health programs	37	19.0%
Privacy reasons	30	20.0%	Worries about security of personal health information online	37	14.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>					

Table 42a			
<i>Results of F-Test for Barriers by Race (Asian or Pacific Islander and White Caucasians only)</i>			
F	df1	df2	p
1.234	9	645	0.271

Based on the results of the F-Test shown on Table 42a, the pattern of agreement with each barrier was not significantly different by race at the 0.05 level of significance.

Overall, based on the various F-Test analyses, the pattern of agreement with barriers was not significantly different for any of the demographic variables.

Perception of Motivations

Table 43					
<i>Frequency Distributions of Motivations by Job Description</i>					
Nursing Staff			Advanced Practice Provider		
Motivation	N	Proportion Agree/Strongly Agree	Motivation	N	Proportion Agree/Strongly Agree
Gymnasium available at worksite	64	97.0%	Premium discounts	21	100.0%
Incentives for participation	65	91.0%	Lower deductibles	22	100.0%
Premium discounts	65	91.0%	Incentives for participation	22	95.0%
Lower deductibles	65	91.0%	Gymnasium available at worksite	22	95.0%
Subsidized health club membership	65	91.0%	Paid 30 minutes break for participation	22	95.0%
Stress reduction	64	91.0%	Subsidized health club membership	22	95.0%
Good quality of sleep with regular exercises	64	89.0%	Stress reduction	22	95.0%
Feeling good after participation in a given wellness program	65	89.0%	Feeling good after participation in a given wellness program	22	95.0%
Paid 30 minutes break for participation	65	88.0%	Higher employer health savings account	22	91.0%
Higher employer health savings account	64	88.0%	Good quality of sleep with regular exercises	22	91.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>					

Table 43a			
<i>Results of F-Test for Motivations by Job Description</i>			
F	df1	df2	p
0.190	9	845	0.995

Based on the results of the F-Test shown on Table 43a, the pattern of agreement with the motivations was not significantly different according to job description at the 0.05 level of significance.

Table 44					
<i>Frequency Distributions of Motivations by Hospital Type</i>					
Motivation	N	Proportion Agree/Strongly Agree	Motivation	N	Proportion Agree/Strongly Agree
Gymnasium available at worksite	35	97.0%	Gymnasium available at worksite	51	96.0%
Premium discounts	34	97.0%	Good quality of sleep with regular exercises	51	94.0%
Lower deductibles	35	97.0%	Feeling good after participation in a given wellness program	52	94.0%
Paid 30 minutes break for participation	35	94.0%	Incentives for participation	52	92.0%
Incentives for participation	35	91.0%	Subsidized health club membership	52	92.0%
Subsidized health club membership	35	91.0%	Stress reduction	51	92.0%
Higher employer health savings account	35	91.0%	Premium discounts	52	90.0%
Stress reduction	35	91.0%	Lower deductibles	52	90.0%

Table 44

Frequency Distributions of Motivations by Hospital Type

Motivation	N	Proportion Agree/Strongly Agree	Motivation	N	Proportion Agree/Strongly Agree
Feeling good after participation in a given wellness program	35	86.0%	Paid 30 minutes break for participation	52	87.0%
Good quality of sleep with regular exercises	35	83.0%	Higher employer health savings account	51	86.0%

Note: Adapted from the *Wellness Participation Survey* response data on *REDCap*.

Table 44a			
<i>Results of F-Test for Motivations by Hospital Type</i>			
F	df1	df2	p
1.238	9	845	0.268

Based on the results of the F-Test shown on Table 44a, the pattern of agreement with the motivations was not significantly different according to hospital type at the 0.05 level of significance.

Table 45											
<i>Frequency Distribution of Motivations by Age Group</i>											
22-30			31-40			41-50			51 and above		
Motivation	N	Prop.	Motivation	N	Prop.	Motivation	N	Prop.	Motivation	N	Prop.
Good quality of sleep with regular exercises	14	86.0%	Lower deductibles	34	100.0%	Gymnasium available at worksite	26	96.0%	Gymnasium available at worksite	13	92.0%
Incentives for participation	14	93.0%	Incentives for participation	34	97.0%	Incentives for participation	26	92.0%	Premium discounts	13	92.0%
Paid 30 minutes break for participation	14	93.0%	Gymnasium available at worksite	33	97.0%	Paid 30 minutes break for participation	26	92.0%	Subsidized health club membership	13	92.0%
Premium discounts	14	93.0%	Premium discounts	33	97.0%	Subsidized health club membership	26	92.0%	Good quality of sleep with regular exercises	12	92.0%
Lower deductibles	14	93.0%	Stress reduction	34	97.0%	Higher employer health savings account	26	92.0%	Stress reduction	13	92.0%
Subsidized health club membership	14	93.0%	Paid 30 minutes break for participation	34	94.0%	Premium discounts	26	88.0%	Feeling good after participation in a given wellness program	13	92.0%
Higher employer health savings account	14	93.0%	Good quality of sleep with regular exercises	34	94.0%	Lower deductibles	26	88.0%	Lower deductibles	13	85.0%

Table 45											
<i>Frequency Distribution of Motivations by Age Group</i>											
22-30			31-40			41-50			51 and above		
Motivation	N	Prop.	Motivation	N	Prop.	Motivation	N	Prop.	Motivation	N	Prop.
Stress reduction	14	93.0%	Subsidized health club membership	34	91.0%	Feeling good after participation in a given wellness program	26	88.0%	Incentives for participation	13	77.0%
Feeling good after participation in a given wellness program	14	93.0%	Higher employer health savings account	33	91.0%	Good quality of sleep with regular exercises	26	85.0%	Paid 30 minutes break for participation	13	69.0%
Gymnasium available at worksite	14	100.0%	Feeling good after participation in a given wellness program	34	91.0%	Stress reduction	25	84.0%	Higher employer health savings account	13	69.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>											

Table 45a			
<i>Results of F-Test for Motivations by Age Group</i>			
F	df1	df2	p
0.601	27	825	0.947

Based on the results of the F-Test shown on Table 45a, the pattern of agreement with the motivations was not significantly different according to age group at the 0.05 level of significance.

Table 46					
<i>Frequency Distribution of Motivations by Race (Asian and White Caucasians only)</i>					
Asian or Pacific Islander			White Caucasian		
Motivation	N	Proportion Agree/Strongly Agree	Motivation	N	Proportion Agree/Strongly Agree
Gymnasium available at worksite	30	97.0%	Gymnasium available at worksite	36	97.0%
Paid 30 minutes break for participation	30	97.0%	Premium discounts	37	95.0%
Higher employer health savings account	30	97.0%	Stress reduction	37	95.0%
Incentives for participation	30	93.0%	Lower deductibles	37	92.0%
Subsidized health club membership	30	93.0%	Subsidized health club membership	37	92.0%
Feeling good after participation in a given wellness program	30	93.0%	Good quality of sleep with regular exercises	36	89.0%
Lower deductibles	30	90.0%	Feeling good after participation in a given wellness program	37	89.0%
Good quality of sleep with regular exercises	30	90.0%	Incentives for participation	37	86.0%
Stress reduction	30	87.0%	Paid 30 minutes break for participation	37	86.0%
Premium discounts	29	86.0%	Higher employer health savings account	36	83.0%
<i>Note: Adapted from the Wellness Participation Survey response data on REDCap.</i>					

Table 46a			
<i>Results of F-Test for Motivations by Race (Asians and White Caucasians)</i>			
F	df1	df2	p
1.252	9	646	0.26

The pattern of agreement with the motivations was not significantly different according to race (Asians and Whites only) at the 0.05 level of significance. Overall, the patterns of agreement with motivations was not significantly different for any of the demographic variables. Based on the results reported earlier in this document, motivations tended to have a high proportion of agreement, so it makes sense that it did not vary much from one group to another based on demographic variables.

Brief Summary of the Results: The pattern of agreement with barriers was not significantly different for any of the demographic variables at 0.05 level of significance. Non-availability of a gymnasium at workplace for hospital nursing employees was ranked as the highest barrier along with long working hours, distances between workplace, gymnasiums, and home; lack of incentives, and work-related stress were perceived barriers listed by both clinical nursing staff (RNs) and the advanced practice providers (APPs). The pattern of agreement with motivations was not significantly different for any of the demographic variables at 0.05 level of significance. Overall, motivations tended to have a high proportion of agreement, so it makes sense that motivations did not vary much from one group to another.

Gymnasium available at worksite, incentives for participation, premium discounts, lower deductibles, subsidized health club membership, stress reduction, good quality of sleep with regular exercises, feeling good after participation in a given wellness program, paid 30 minutes

break for participation, and higher employer health savings account are highly ranked motivations by both, the clinical nursing staff and the advanced practice providers.

Phases of the QI Study Project

To begin the implementation of the QI study project, the investigator first approached the nursing research department at the two large selected public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S. The nursing research department advised the investigator to seek a non-regulatory research (NRR) approval from Institutional Review Board (IRB) from the selected hospitals on Form Y2 to proceed with this QI initiative. The investigator undertook and completed CITI training and qualified to conduct this QI study project as a non-regulatory research (NRR). The investigator submitted a non-regulatory research request for IRB Approval on 12/31/2018 (See Appendix C). The nursing research department also advised the investigator to develop and collect data through an approved online electronic platform, *Research Electronic Data Capture (REDCap)*, which is a secure, HIPAA-compliant web-based solution, that is designed to support data collection and data management strategies for studies such as this QI study project (Harris et al., 2009). The investigator applied and received a login and password access to *REDCap* website on 12/31/2018.

The investigator's NRR request was concurrently being processed by a Senior Regulatory Associate in the Human Research Protection Program Office (HRPPO) who requested information about the QI study project, which was provided by the investigator. Eventually the investigator was contacted on 1/14/2019 by the Director of Research Compliance from the Office of Research Administration, at the two large public teaching hospital systems, who asked the investigator to send the survey instrument for their review. The investigator complied on the same day and sent the survey instrument on 1/14/2019. More questions were asked regarding

plans for data collection, dissemination of the survey instrument, electronic platform, anonymity and confidentiality of respondents, the target population, sample size, etc. The investigator complied with the requests and provided satisfactory responses to the queries from the Office of Research Administration.

The Director of Research Compliance from the Office of Research Administration, at the selected teaching hospital systems, informed the investigator on 1/15/2019 that this QI study project was determined to be an Exempt Research Study, Category 2, which required a submission of request and approval from *eIRB* and *Velos* for further processing and consideration. Once approved by *eIRB* and *Velos*, the QI study project would be reviewed again by the nursing leadership of the selected hospitals for their input prior to the grant of permission to conduct study related activities at the two (a state-funded and a county-funded) large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S.

To move the process along expeditiously, the investigator submitted a request to conduct a QI study initiative to *eIRB* and *Velos* on 1/17/2019. The following day on 1/18/2019, the investigator received approval from a faculty/physician in the Internal Medicine Department at one of the large public teaching hospital who agreed to be the sponsor of the QI study project. On the same day on 1/18/2019, the Chair of the Internal Medicine Department also granted approval to conduct the QI study project in the selected hospitals. Subsequently, a Senior Regulatory Associate from HRPPO was assigned on 1/24/2019 to conduct a final review of the QI study.

The investigator was informed on 1/28/2019 that the QI study project had been approved as an exempt study. On the same day on 1/28/2019, a performance site approval on *Velos* and an *eIRB* approval was granted to conduct study related activities at the state-funded large public

teaching hospital located in the hospital district of a metropolitan city in the Southwestern U.S.

The investigator was then advised to get a similar approval from the county-funded hospital. The investigator went through the normal application process and received permission from the county-funded hospital on 2/8/2019 to conduct study related activities there as well. The process to implement the QI study project was completely approved and in place on 2/8/2019.

The last step in the process to begin study related activities was to get approval from the investigator's DNP Scholarly Project Committee. After a successful Scholarly Project Proposal Defense on Friday, March 22, 2019, the investigator was granted permission to disseminate the interventional survey instrument developed and named '*Workplace Participation Survey*' by the investigator. The investigator gave permission to the nursing leadership of the two selected hospitals to disseminate the *Wellness Participation Survey* on Friday, March 22, 2019 to eligible on-record participants to collect data. The survey was closed one week later on Friday, March 29, 2019 as statistically sufficient number of responses had been received for this QI study initiative.

Chapter 5

Discussion and Findings

Limitations of the Project

Caution needs to be exercised as the study results may only be generalizable to the two (a state-funded and a county-funded) large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S., as they are unique. However, hospitals with similar mission statements, gender, ethnic-racial, socio-economic, average age, geographic-metropolitan setting, etc. may find the survey procedures and/or results useful in developing their own hospital-based workplace wellness programs.

Voluntary self-reported health information and health behaviors can be biased, in which participants may not have provided honest responses because they do not want to share negative information about themselves for fear the responses are not anonymous or they did not wish to accurately disclose negative behaviors (Motley & Prelip, 2011). Participating hospital nursing employees do not wish to share their personal perceptions and attitudes regarding their personal perceptions for and barriers to participation in the wellness programs of the hospitals for which they work for fear of some type of reprisal or negative impact on their employment. Participants may be biased due to their own personal agenda, or they may harbor personal fears regarding participation or non-participation in wellness programs due to distrust, potential disruption of work, or the inter-personal or professional relationships within the organization.

Since the *Wellness Participation Survey* required retrospection to remember the number of programs offered, the participants may have had difficulty recalling information, which could influence the survey results. Other limiting factors of the study may be as follows:

1. The population for study participation was limited to the advanced practice providers and registered nurses engaged in direct clinical care in the emergency department and intensive care unit; the findings of the study may not be representative of all nursing employees of the two selected large public teaching hospitals.
2. Due to the small or restricted sample size; the findings of the study may not be representative of all nursing employees of the two selected hospitals.
3. Respondents were limited to those who voluntarily participated in the *Wellness Participation Survey* questionnaire.

Assumptions of the Project

The investigator assumed that the employees of the two selected hospitals were aware of the existing wellness programs offered. Although all hospital employees were eligible, there could have been some employees who participated and others who were non-participants in the hospitals' established workplace wellness programs. An assumption was also made that all study participants read and understood the *Wellness Participation Survey* questions and all respondents were honest in their responses and each participant completed the survey only once. It was also assumed that the *Wellness Participation Survey* questions were asked in a clear manner in simple English to ensure no misunderstandings and respondents were assured of anonymity and confidentiality with regards to their identity and responses. Finally, it was assumed that the participants answered the questions based on the intended purpose of each question in the survey instrument (Motley & Prelip, 2011).

Local Setting Features that Influenced the Project

The hospital administration and the nursing leadership was responsible for the dissemination of the survey instrument to the eligible participants via the hospitals' email system

according to the respective organizational policies and procedures. Participation in the *Wellness Participation Survey* was promoted by the nursing leadership on a daily basis during morning and evening huddles a week prior to and during the period the survey was open for participation. Charge nurses encouraged the nurses to participate and complete the survey questionnaire with frequent reminders. The hospitals' nursing research department provided oversight of the *RedCap* data collection process and administrative supervision. After the close of the recruitment period, the investigator was given raw unidentifiable response data which was downloaded from *REDCap* in an encrypted format and exported to Microsoft Excel spreadsheets for statistical analysis using IBM SPSS Statistics 25 software for Windows with assistance from the university statistician.

Plans for Dissemination

This *Quality Improvement Initiative: Motivations and Barriers to Hospital Nursing Employee Participation in Workplace Wellness Program* was accepted by two forums for public presentation. The investigator made a poster presentation about this QI study project at the North Texas Nurse Practitioners 2019 Annual Spring Conference on Saturday, April 6, 2019 held at the Wyndham Dallas Suites in Dallas, Texas. The investigator also made a Platform Presentation about this QI study project at the 2019 Student Creative Arts & Research Symposium on Wednesday, April 10, 2019 at 09:00 am in the Texas Woman's University, Denton Campus.

Plans for Maintaining the Improvement

This quality improvement (QI) initiative is the first step in the collection of data that contribute to the identification of perceptions of availability, motivations for and barriers to participation faced by hospital nursing employees within an established workplace wellness program. The overall goal of this QI initiative is to use the findings of this project for future

study projects to recommend continuous quality improvement and policy recommendations with regards to hospital-based workplace wellness programs using Deming's Plan-Do-Study-Act (PDSA) model (Taylor et al., 2014).

With the PDSA model as a guide and subsequent to the first step in the collection of data using the survey instrument developed for this study project (Holly, 2014), the investigator plans to communicate with the leadership of the two large public teaching hospitals located in the hospital district of a metropolitan city in the Southwestern U.S. to recommend improvements in its hospital-based workplace wellness programs for increased participation by employees.

The results and findings of the *Wellness Participation Survey* will be shared with the hospital administration and the nursing leadership team of the two selected large public teaching hospitals with observations and recommendations to suggest improvements in the existing policies and possible changes to the workplace wellness programs. Findings from this QI study were synthesized with findings from the review of current evidence-based literature to develop recommendations and policy ideas to increase evidence-based motivations and incentives and reduce barriers and hurdles for greater participation in the wellness programs for adaptation of long-term healthy behaviors in hospital employees such that they are role models of good health to the communities they serve and not just providers of health to the patrons they encounter.

There are no plans for implementation of any intervention, hence no evaluation of the intervention is applicable or necessary for this study project.

Application of the DNP Essentials to the Project

Echoing the Institute of Medicine's (IOM, 2003) sentiments, the essentials of the doctoral education in nursing practice is designed to develop and evaluate scientific underpinnings for advanced nursing practice; utilize technology and research methods to collect appropriate and

accurate data to generate evidence for nursing practice; lead and collaborate inter-professionally to improve patient and population health outcomes; and develop, evaluate, and implement interventions to address clinical prevention and population health for improving the nation's health (AACN, 2006). The undertaking of this DNP Scholarly Project was to study the workforce characteristics among hospital nursing employees with regards to perceived motivations for and barriers to participation in hospital-based workplace wellness programs.

The following DNP Essentials were met through the completion of this descriptive quantitative DNP Scholarly Project:

Essential I: Scientific underpinnings for practice

This essential is met with the application of science relevant to human experience such as psychology and sociology all functioning within a complex system of health and well-being (Ahmed, Andrist, Davis, & Fuller, 2013). This QI study project was about identifying the perceived motivations and barriers associated with participation or non-participation by hospital nursing employees in established hospital-based workplace wellness programs. This QI initiative used a survey questionnaire as an interventional instrument called '*Wellness Participation Survey*' to acquire this complex social science knowledge of human perceptions for the investigator to translate and synthesize that knowledge for application to a specialty population (hospital nursing employees) and make recommendations to potentially improve participation in hospital-based workplace wellness program (Ahmed et al., 2013).

Essential II: Organizational and systems leadership for QI and systems thinking

The role of the DNP is to drive continuous quality improvements with stakeholders by utilizing their expert knowledge of populations, health systems, and communities of interest (Ahmed et al., 2013). Through this QI study project, an in-depth knowledge of existing hospital-

based workplace wellness programs was acquired by the investigator along the hospital nursing employees' perceived motivations for and barriers to participation in wellness programs. The findings from this QI initiative could potentially be used by the hospital administration and nursing leadership of the two selected hospitals to make policy changes to improve hospital nursing employee participation for a better health outcome.

Essential III: Clinical scholarship and analytical methods for evidence-based practice (EBP)

A key role of the DNP is synthesis, translation, and integration of a plethora of data into clinical practice (Ahmed et al., 2013). This QI initiative used a survey questionnaire as an interventional instrument to gather unknown data for the identification of perceptions of availability, and motivations for and barriers to participation faced by hospital nursing employees in a hospital-based established workplace wellness program. A search for a data collection instrument found no existing survey instrument that would support this QI study project, hence, the investigator developed a survey instrument called 'Wellness Participation Survey.' This identification of employee perceptions, gathering of evidence-based data through a tool developed by the investigator for potential future policy recommendations and quality improvement to bring increased wellness participation for better health outcomes of hospital employees is an appropriate application of DNP Essential III.

Essential V: Healthcare policy for advocacy in healthcare

This QI study project meets this essential by gaining expert knowledge of the existing hospital-based workplace wellness programs, the level of availability, and the identification of motivations for and barriers to participation in these programs, to inform and make policy recommendations to the hospitals' policymakers at the two selected hospitals.

Essential VII: Clinical prevention and population health for improving the nation's health

This QI study project meets this critical essential by initiating this first step of data collection to promote health behavior change towards creating a *culture of health* within the hospital setting to meet *Healthy People 2020* initiative to attain a level of wellness and health promotion for hospital nursing employees, thereby improving nation's health and reducing the nation's overall healthcare spending.

Essential VIII: Advanced nursing practice role and education

This QI study initiative is an exemplar in clinical health promotion, risk reduction, creating a *culture of health*, illness prevention for improving the nation's health along with providing clinical scholarship, scientific underpinnings for nursing practice, and healthcare policy advocacy for improving population health outcomes are all *The Essentials of Doctoral Education for Advanced Nursing Practice* promulgated by the American Association of Colleges of Nursing (AACN, 2006).

It encourages advanced practice registered nurses and registered nurses to play an important role in encouraging people to participate in guideline levels of physical activity and exercise, thereby serving as role models of health in their communities and for the nation. The inclusion of health promotion activities and preventive measures is supported by evidence-based practice and are not only effective but also essential to improving and maintaining the health of present and future citizens. Promoting health often means providing behavioral health interventions and lifestyle changes to encourage healthy eating and participation in daily physical activity (Kirsch, 2006).

Conclusion

The QI study project has gathered important information about the perceptions of the hospital nursing employees at two large public teaching hospitals located in the hospital district

of a metropolitan city in the Southwestern U.S. about the level of availability and motivations for and barriers to participation in established hospital-based workplace wellness programs. This information is vital to make recommendations to improve motivations for participation and to reduce barriers to make healthy behavior changes through established hospital-based workplace wellness programs.

It is critical that organizations take a comprehensive approach to employee wellness in order to meet the health and wellness needs of its employees, as well as to engage employees to participate in the workplace wellness programs in increased numbers. Identifying and implementing strategies to address employee preferences, perceived motivations and barriers will help both employers and employees to achieve better health and well-being, thus improving organizational outcomes related to employee health and health behaviors (Person et al., 2010). A successful employer sponsored wellness program requires employee participation; therefore, there must be careful consideration given to addressing the perceived behaviors and preferences among hospital nursing staff in order to improve participation and improve health outcomes of hospital employees and the nation.

Recommendations

The results of this QI study project identified that not all respondents were aware of the available hospital-based wellness programs for employees and their families. There is room for improvement to increase hospital nursing employees' awareness about the availability of hospital-based workplace wellness programs.

This QI initiative also identified that the provision of incentives, availability of on-site gymnasiums, access and use of gymnasiums during break times at work, indoor/outdoor walking trails, premium discounts, lower deductibles, subsidized health club membership, and higher

health savings account would promote increased employee participation in hospital-based workplace wellness programs. Preferable incentives are cash awards, gift cards, and vacation trips which the hospital administration and nursing leadership might look into to facilitate increased participation in the workplace wellness program.

Long and odd working hours and shifts, work-related stress, family obligations, non-availability of gym at workplace, distance between workplace and off-site gymnasium, and lack of financial rewards were identified as major barriers toward employee participation in hospital-based workplace wellness programs. Hospital administration and nursing leadership might also look into facilitating paid employee break time to participate in physical activity and wellness, which may increase employee productivity, promote staff camaraderie, decrease absenteeism, improve morale and population health.

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Appendix A: Synthesis of Literature Matrix and Levels of Evidence				
Specific Themes	Concepts	Methods & Design	Citations	Levels of Evidence
Workplace Wellness Programs	Workplace presents an ideal setting for introducing and maintaining health promotion programs, mainly Workplace Wellness Programs.	Used available administrative data collection methods and analysis systems, this policy paper authored by experts provides recommendations regarding workplace wellness programs drawn from 67 well referenced sources and literature citations.	Goetzel, R. Z., Roemer, E. C., Liss-Levinson, R. C., & Samoly, D. K. (2008) <i>Workplace health promotion: Policy recommendations that encourage employers to support health improvement programs for their workers</i> [Policy Paper commissioned by Partnership for Prevention]. Retrieved from http://prevent.org/data/files/initiatives/workplacehealthpromotion-policyrecommendations.pdf	Level 4 Systematic literature review of high quality compiling summarizing evidence from research.
Workplace Wellness Programs in the Hospital Setting	Identified nutrition and physical activity environments, employee-related wellness policies and practices, allowing for the identification of common environmental Barriers and Motivations.	Cross-sectional study conducted Aug-Sep 2012, described current policies and practices in five large Texas-based hospitals, in the largest urban medical complex in the world, employing approximately 40,000 adults.	Sharma, S. V., Paolicelli, C. W., Jyothi, V., Baun, W., Perkison, B., Phipps, M., ... Pompeii, L. A. (2016). Evaluation of worksite policies and practices promoting nutrition and physical activity among hospital workers. <i>International Journal of Workplace Health Management</i> , 9(1), 46-62. doi: 10.1108/IJWHM-03-2014-0005	Level 2 Cross-sectional, quasi-exper'al, one of the first of its kind, data location premiere medical campuses employing approximately 40,000 adults.
Determinants of Participation in Workplace Wellness Programs	Value in surveying hospital employees, benefits of workplace wellness incentives, hospitals' missions and policies to holistically support their employees.	Cross sectional study of 705 participants, identified 31 incentives, job stressors, and the role spirituality/religion had in employee health and healthy behaviors.	Motley, D., & Prelip, M. (2011). Assessing hospital employees' readiness for change for a workplace wellness program. <i>California Journal of Health Promotion</i> , 9(2), 95-106. Retrieved from https://www.researchgate.net/publication/264861365_Assessing_Hospital_Employees'_Readiness_for_Change_for_a_Workplace_Wellness_Program	Level 3 Cross-sectional survey study limited to one Catholic hospital, high quality results & conclusions.
Wellness Program Participation (Motivations)	Motivations in the form of incentives for short-term health behavior changes. Employee preferences are	Examined types of wellness program offerings & incentives among 721 individuals in healthcare, education, &	Churchill, S. A., Gillespie, H., & Herbold, N. H. (2014). The desirability of wellness program and incentive offerings for employees. <i>Benefits Quarterly</i> , 30(1), 48-57.	Level 2 Quasi-experimental, high quality, good sample size, breadth

Appendix A: Synthesis of Literature Matrix and Levels of Evidence				
Specific Themes	Concepts	Methods & Design	Citations	Levels of Evidence
	constantly changing; therefore annually survey employees regarding wellness programs.	corporation. Healthcare employees responded better than other two if on-site gym, motivated by monetary incentives.		of industries: healthcare, higher education, and a for-profit corporation.
Wellness Program Participation (Barriers)	Barriers for not participating in a wellness program: insufficient incentives, inconvenient locations, and time limitations.	Qualitative review of 50 subjects at a university setting. Interviews were conducted after the completion of the 10-week wellness program	Person, A., Colby, S., Bulova, J., & Eubanks, J. (2010). Barriers to participation in a worksite wellness program. <i>Nutrition Research and Practice</i> , 4(2), 149-154. doi: 10.4162/nrp.2010.4.2.149.	Level 3 Non-experimental study. High quality. Results consistent with other studies.
Incentives (Motivations) Versus Penalties	Incentives and penalties concept to increase participation and healthy behavior in workplace wellness program. Both, types and levels of incentives matter.	An attitudinal 14-item cross-sectional online-survey fielded to working-age U.S. residents (20-65 years) via the platform SurveyMonkey® over a period of 10 days in Sep-Oct. 2011.	Schmidt, H. (2013). Carrots, sticks and false carrots: How high should weight control wellness incentives be? Findings from a population level experiment. <i>Frontiers in Public Health Services and Systems Research</i> . 2(1). doi: 10.13023/FPHSSR.0201.02.	Level 3 Qualitative cross-sectional study. High quality. Explorative survey.
<i>Note:</i> The Johns Hopkins Nursing Evidence-Based Practice was used to evaluate the strength of evidence on the levels 1 through 5				

Appendix B: Proposed Statistical Analysis of the Survey Instrument				
Questions	Variable (IV)	Operational Definitions	Level of Data	Statistical Test
Questions: 1, 2, 3, 4 and 5 What are the demographic characteristics of hospital nursing employees who are eligible to participate in an established workplace health and wellness program?	Question 1: Age	Response score to Question 1.	Age is a continuous variable which will be handled as a categorical variable. Age will range from age 22 to 71 and above. Age will be categorized age as follow: 22-30, 31-40, 41-50, 51-60, 61-70, 71 and above.	Descriptive Statistics. Shall perform Chi-square and Fisher Exact Test, where necessary.
	Question 2: Sex	Response score to Question 2.	Sex as a biological variable It is categorical: male versus female	
	Question 3: Race	Response score to Question 3.	Race/ethnicity is categorical: African American, Hispanic, American, Indian or Alaska Native, Asian or Pacific Islander, Mixed Race. Non-binary variable in my data analysis. Will combine American Indian, Asian or Pacific Islander, and other into one category called "Other."	
	Question 4: Job Description	Response score to Question 4.	Job type is a binary variable with two levels: Advanced Practice Providers versus Registered Nurses.	
	Question 5: Type of Hospital	Response score to Question 5.	Hospital type is a binary variable with two levels: State Hospital versus County Hospital.	

Appendix B: Proposed Statistical Analysis of the Survey Instrument				
Questions	Variable (IV)	Operational Definitions	Level of Data	Statistical Test
Questions: 6 and 7 What are the perceptions availability of wellness programs to employees and their families?	Question 6: Available to employee Question 7: Available to family	Response scores to Questions 6 and 7.	This is a categorical variable. Wellness Program is a binary variable with two levels: Yes or No. Do not know will be considered as missing data. *Availability of Wellness Program to family is a binary variable with two levels: Yes or No. Do not know will be considered as missing data.	Descriptive Statistics. Chi-square Test will be employed.
Question 8 What are the perceptions of number of programs offered by the hospital for employees?	Question 8: Sum of number of programs.	Sum of responses to question 8 (Select all that apply with a possible total of 24 selections).	Continuous variable.	Descriptive statistics, including sums of items.
Question 9 What are the perceptions of level of availability of the wellness programs?	Question 9: Level of availability of the programs.	Response score to Question 9.	Continuous with Likert Scale (Not available at all [1], to Moderately available [5], to Very available [10]).	Descriptive Statistics.

Appendix B: Proposed Statistical Analysis of the Survey Instrument				
Questions	Variable (IV)	Operational Definitions	Level of Data	Statistical Test
<p>Questions: 10, 11, 12, 13 and 14</p> <p>What are the perceptions of incentives versus penalties and if incentives will influence participation?</p>	<p>Question 10: Does hospital offer incentives?</p> <p>Question 11: Does hospital impose penalties?</p> <p>Question 12: Would participation increase with positive incentives?</p> <p>Question 13: Choose preferences of incentives</p> <p>Question 14: Does hospital offer above-mentioned incentives? Types of incentives preferred by different groups of participants</p>	<p>Response scores to Questions 10, 11, 12, 13 and 14.</p>	<p>Questions 10, 11, 12 and 14 are categorical (Yes or No or Do Not Know).</p> <p>Question 13 is Continuous with sum of selected items.</p>	<p>Descriptive Statistics.</p>

Appendix B: Proposed Statistical Analysis of the Survey Instrument				
Questions	Variable (IV)	Operational Definitions	Level of Data	Statistical Test
<p>Question 15</p> <p>What are the perceptions of barriers?</p>	1) Long working hours 2) Odd Shift 3) Family Obligation 4) Work-related Stress 5) Distance between workplace 6) Non-availability of Gym 7) Lack of incentive 8) Privacy reasons 9) Worries about security of personal health information 10) Lack of comfort.	Responses to question 15 with 10 items.	Each of the 10 responses has 5 continuous levels of data: Each item can be considered a continuous variable with Likert Scale from (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree.	Descriptive Statistics. The mean of each item will indicate the level of the agreement. Each item will be ranked according to the types of agreement. A mean of 5 will indicate that each one of the items will be a strongly agreed upon barrier.
<p>Question 16</p> <p>What are the perceptions of motivations?</p>	1) Incentives 2) Gym 3) Paid break 4) Premium discount 5) Lower deductibles 6) Subsidized health club membership 7) Higher Employer Health Savings Account 8) Good quality of sleep 9) Stress reduction 10) Feeling Good.	Responses to question 16 with 10 items.	Each of the 10 responses has 5 continuous levels of data: Each item can be considered a continuous variable with Likert Scale from (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree.	Descriptive Statistics. The mean of each item will indicate the level of the agreement. Each item will be ranked according to the types of agreement. A mean of 5 will indicate that each one of the items will be a strongly agreed upon motivation.
<p><i>Note:</i> Fisher Exact Probability Test and Chi-square Test is used if the observation in one group is the same as expected in the other group. Both Fisher and Chi-square Tests are employed to test for differences between two categorical variables. The Fisher Exact Probability Test is much more powerful than the Chi-square Test when the sample size is small.</p>				
<p><i>Source:</i> Camilli, G., & Hopkins, K. D. (1978). Applicability of chi-square to 2× 2 contingency tables with small expected cell frequencies. <i>Psychological Bulletin</i>, 85(1), 163-167. doi: 10.1037/0033-2909.85.1.163</p>				

Appendix C
IRB Approval : Non-Regulatory Research Request Form (Form Y2)

1. Date:	December 31, 2018
2. Title:	Workplace Wellness Program to Improve Hospital Employee Health

3. Name and Address of Project Director/Principal Investigator (PD/PI): (This is the primary local contact information used by the HRPP. Indicate where mail can most reliably reach the PD/PI.)	
PD/PI Name	Rose Bagh
Employer(s):	UT Southwestern
Department:	Internal Medicine/Cardiology
PD/PI's Telephone #	214-645-7500
PD/PI's e-mail address:	Rose.Bagh@UTSouthwestern.edu
PD/PI's Position Title:	Nurse Practitioner
Point of contact name:	Rose Bagh
Point of contact email	Rose.Bagh@UTSouthwestern.edu
Point of contact telephone #:	214-645-7500

4. Project Sites - List all sites where your project will occur	
Check all that apply	Name of Institution / Site (list all participating sites below)
<input checked="" type="checkbox"/>	UT Southwestern (<i>Insert Department or Clinic</i>): All hospital/clinic areas where NPs work
<input checked="" type="checkbox"/>	Parkland HHS (PHHS) (<i>Insert Department or Clinic</i>): All hospital/clinic areas where NPs work
<input type="checkbox"/>	Children's Health (<i>Insert Department or Clinic</i>):
<input type="checkbox"/>	Texas Scottish Rite (<i>Insert Department or Clinic</i>):
<input type="checkbox"/>	Retina Foundation of the Southwest (<i>Insert Department or Clinic</i>):
<input type="checkbox"/>	Texas Health Resources (THR) Hospital (<i>Insert Department or Clinic</i>):
<input type="checkbox"/>	Other → (<i>Insert Department or Clinic</i>):

5: Is this regulated human research requiring IRB approval?		
If you answer NO to all questions below, then IRB review and approval is likely NOT required. Upon review, the Human Research Protection Program Office (HRPPO) will issue you with a determination letter that your research does not require IRB review and approval.		
In an effort to avoid unnecessary work, if you are uncertain or if you answer Yes to any question below, STOP and call the HRPP office at 214-648-3060 for further guidance.		
	Yes	No
1. Is the intent of the project either to test a novel hypothesis or to replicate another researcher's original study?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2. Will patients or personnel be exposed to additional discernable risks or burdens beyond those of usual care at this institution?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Does the project involve withholding of any aspect of conventional care shown to be beneficial in prior well-conducted clinical trials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Does the project seek to test interventions, practices or treatments that are not standard of care (neither consensus-based nor evidence-based)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Will the UTSW or an affiliated institution receive a direct federal (DHHS) award to conduct human subjects' research, even where all activities involving human subjects are carried out by a non-UTSW entity (e.g., subcontractor or collaborator)? <i>Research Funding from the Department of Health and Human Services (DHHS) (e.g., Agency for Healthcare Research and Quality (AHRQ); Centers for Disease Control and Prevention (CDC); National Institutes of Health (NIH); etc.)</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Does the project involve a drug or device used outside of usual medical practice, including non-FDA-approved agents, or off-label uses of FDA-approved drugs or devices?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Will the safety and/ or effectiveness of a drug (FDA approved or non-FDA approved) or regulated device be evaluated or be compared to that of another?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Will data from the activity of an active group or a control group be submitted to, or held for inspection by the FDA in support of a marketing or research application for an FDA-regulated product (drug or device)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Does the project have funding from an organization with a commercial interest in the use of the results?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Will data obtained from use of a device on tissue specimens be submitted to, or held for inspection by, the FDA in support of a marketing application or research application for an FDA regulated product?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

6. Classify your activity (Check the best choice):	
(Activities Not Considered Research)	
<input type="checkbox"/>	Health surveillance. Health surveillance is an ongoing part of the medical care and public health care functions closely integrated with timely dissemination of these data to those responsible for preventing and controlling disease or injury (may include emergent or urgently identified or suspected imminent health threats to the population to document the existence and magnitude).
<input checked="" type="checkbox"/>	<p>Routine Quality Improvement (QI) means systematic, data-guided activities designed to bring about immediate, positive changes in the delivery of health care in particular settings. QI involves deliberate actions to improve care, guided by data reflecting the effects (e.g., types of practical problem solving; an evidence-based management style; the application of science of how to bring about system change; review of aggregate data at the patient/provider/unit/ organizational level to identify a clinical or management change that can be expected to improve care).</p> <p>For QI – answers to the following questions should be YES:</p> <ol style="list-style-type: none"> 1. Are patients who receive the project intervention expected to benefit? 2. Will all groups in the project receive, at the minimum, usual care at this institution? 3. Is the purpose to measure the performance of or to determine the effect of a process change intended to improve health care delivery? 4. Will the results be used to inform and implement improvements in patient care at the institution the process is being implemented?

<input type="checkbox"/>	Medical quality assurance. This refers to activities particular to an institution's QA program, such as those activities protected from disclosure as part of its confidential medical quality-assurance program or other equivalent programs. (e.g., see applicable university or institutional policy)
<input type="checkbox"/>	Program evaluation. This refers to assessments of the success of established programs in achieving objectives when the assessments are for the use of program managers, for example, a survey to determine if program beneficiaries are aware of the availability of program services or benefits. [Note: Non-research evaluation is generally designed to assess or improve the program or service rather than to generate knowledge about a disease or condition.]
<input type="checkbox"/>	Customer satisfaction surveys. This refers to surveys of program users to obtain feedback for use by program managers. This is similar to program evaluation.
<input type="checkbox"/>	Academic Projects: academic projects or student assignments involving collection of data from human subjects when the data is used solely for the purpose of learning research methods and not intended to be used to develop or contribute to generalizable knowledge.
<input type="checkbox"/>	Case Reports: use medical information collected from a clinical activity rather than a research activity and presented on no more than three (3) patients. Case reports are generally done by retrospective review of the medical record and highlights a unique treatment, case or outcome. The examination of the case is usually not systematic and there is usually no data analysis or testing of a hypothesis. Investigators must ensure that the HIPAA privacy rules are followed with respect to using or accessing PHI (a HIPAA authorization or waiver may be required)
<input type="checkbox"/>	Community Outreach: The primary intent of research is to generate or contribute to generalizable knowledge. The primary intent of non-research community outreach activity is to prevent or control disease or injury and improve health, or to improve an ongoing community outreach program or service. Knowledge may be gained in any community outreach endeavor designed to prevent disease or injury or improve a program or service. In some cases, that knowledge may be generalizable, but the primary intention of the endeavor is to benefit patients participating in an outreach health program or a population by controlling a health problem in the population from which the information is gathered.
<input type="checkbox"/>	Other: Describe here →

7. Summary of the Activity:

Provide a summary of the proposed activity. Provide sufficient detail for the reviewer to verify whether or not the activity is research and if research, whether or not it is "human research" requiring IRB approval as you have indicated above. If a separate activity description/written plan is available, attach it to this document.

I am conducting a survey on Workplace Wellness Program to Improve Hospital Employee Health. The purpose of the project is to understand the specific motivations or facilitators and barriers or hurdles that hospital employees face which can be identified through a wellness survey such that the results will provide direction to improve access and participation in established workplace wellness programs. The one-time anonymous survey questionnaire is being distributed to advanced practice healthcare providers and clinical nursing staff. Administrative and non-clinical nursing staffs are excluded from the survey.

Appendix C (Continued)
Acceptance of IRB Approval from UT Southwestern Medical Center

UTSouthwestern
Medical Center

eIRB System

Date: Friday, January 25, 2019
To: Rose Bagh
CC:
From: Charles Akers
HRPP Designated Reviewer
Protocol Number: [STU-2019-0525](#)
Title: Motivations and Barriers to Hospital Employee Participation in Workplace Wellness Program
[A Quality Improvement Initiative]
Funding: Internal - Departmental

Agency Grant Number
There are no items to display

Review: New Exempt Study Review - *Accepted*

Review Type: Administrative

Documents: Rose Form B, form_e.i_information_sheet STU-2019-0525.doc, Recruitment email.docx, form_a_research_protocol.docm, form_a_research_protocol.docm, Rose REDCap Survey, form_c_population_recruitment STU-2019-0525.doc, form_g_waive_alter_consent.doc

Dear Principal Investigator,

Your New Study was reviewed and ACCEPTED on Friday, January 25, 2019.

Your submission was reviewed and determined to meet Exempt criteria under 45 CFR 46.104(d). The Designated Reviewer made regulatory determinations for this study which may be found in eIRB in the Determinations tab.

This exempt determination does not expire.

If changes are made to this research which may affect this determination, submit those changes to HRPP for review.

Thank You

Warning: This is a private message for authorized UT Southwestern employees only. If the reader of this message is not the intended recipient you are hereby notified that any dissemination, distribution or copying of this information is STRICTLY PROHIBITED.

University of Texas Southwestern Medical Center
Institutional Review Board

<https://eresearch.swmed.edu/eIRB/Doc/0/S9N53G7CF9BKJBH3PHBG2VRNE1/fromStr...> 01/25/2019

Appendix C (*Continued*)
Acceptance of IRB Approval from UT Southwestern Medical Center
Research Site Approval from Clinical Research Management System (CRMS) / Velos

From: ctmshelpcenter@utsouthwestern.edu <ctmshelpcenter@utsouthwestern.edu>
Sent: Monday, January 28, 2019 7:52 AM
To: Rose Bagh
Subject: [External] securemail:No Action Required - Velos Notification: UT Southwestern - Other
Granted Site Approval for Study 27339.

*** This e-mail did not originate from a Parkland e-mail address. If you do not know or trust the sender, do not click on any links in this e-mail, open any attachments, or disclose any sensitive information such as your password. ***

This is a notification from Velos - <https://velos.swmed.edu>.

UT Southwestern - Other has provided approval to conduct research related activities at the site for the following study.

IRB ID: STU-2019-0525

Velos ID: 27339

PI Name: Rose Bagh

Study title: Motivations and Barriers to Hospital Employee Participation in Workplace Wellness Program [A Quality Improvement Initiative]

** Instructions for the Study Team:

Ensure that IRB approval has also been received prior to enrolling participants' at the site.

Please direct any questions regarding this notification to UT Southwestern University Hospitals Research Department at HospitalSiteResearchApproval@utsouthwestern.edu. 1/28/2019 Texas Woman's University Mail - Fw: [External] securemail:No Action Required - Velos Notification: UT Southwestern.

CONFIDENTIALITY NOTICE This message (including any attachments) is intended only for the use of the addressee(s) and may contain information that is privileged and confidential. If you are the intended recipient, further disclosures are prohibited without proper authorization. If you are not the intended recipient or an authorized representative of the intended recipient, the use, dissemination or reproduction of this communication is prohibited and may be a violation of federal or state law and regulations. If you have received this communication in error, please destroy all copies of the message and its attachments and notify the sender immediately. The Dallas County Hospital District and its affiliated entities hereby claim all applicable privileges related to this information.

Appendix D
Transmittal Letter to Participate in Wellness Survey

Dear Colleague:

Friday, March 22, 2019

I am a Doctor of Nursing Practice student at Texas Woman's University, Dallas Texas. I am in the process of collecting data through a one-time Wellness Participation Survey on Motivations and Barriers to Hospital Nursing Employee Participation in Workplace Wellness Program.

The purpose of this evidence-based quality improvement study project is to examine and understand the motivations and barriers faced by hospital nursing employees to participate in a hospital-based workplace wellness programs such that the results will identify possible improvements for increased participation.

This anonymous survey questionnaire is being distributed to advanced practice providers and clinical registered nursing staff. Other administrative and non-clinical nursing staffs are excluded from survey participation. It should take 15 minutes or less of your time to complete the survey through *RedCap* website (<https://ais.swmed.edu/redcap/surveys/?s=WXTN7JF4WE>). Participation in the survey is completely voluntary. Name or identity is not required to ensure anonymity and confidentiality. I will not know your identity, anyone completing or not completing the survey, and the responses to specific individual questions will be totally anonymous to me. Submission of the completed survey will constitute your informed consent to participate in this study project. The survey must be completed all at once as responses will not be saved until the survey is submitted.

I greatly appreciate your help in participating and responding to this survey. If you have questions or concerns about this study project or the survey questionnaire, please contact me at my cell: 214-3XX-XXXX or at RBagh@twu.edu through email.

Please submit the completed survey by Friday, March 29, 2019. To be guided to complete the survey questionnaire, please click the link below:

<https://ais.swmed.edu/redcap/surveys/?s=WXTN7JF4WE>

Thank you and sincerely yours,

Rose P. Bagh

Mrs. Rose P. Bagh, APRN
DNP Student at Texas Woman's University
The Houston J. and Florence A. Doswell College of Nursing
5500 Southwestern Medical Avenue, Dallas, Texas 75235-7299
Cell: 214-3XX-XXXX – email: RBagh@twu.edu

Appendix E
Survey Instrument - *Wellness Participation Survey*

Request: Please complete all sections of this questionnaire and submit it by March 29, 2019. Thank you.

1. As of January 1, 2019, what is your Job Position?
 - ☐ Advanced Practice Provider
 - ☐ Nursing Staff
2. Are you employed by a State or a County Hospital?
 - ☐ State
 - ☐ County
3. What is your gender?
 - ☐ Male
 - ☐ Female
4. What is your age?
 - ☐ 22-30
 - ☐ 31-40
 - ☐ 41-50
 - ☐ 51-60
 - ☐ 61-70
 - ☐ 71 and above
5. What is your race?
 - ☐ African American or Black
 - ☐ Hispanic
 - ☐ American Indian or Alaska Native
 - ☐ White Caucasian
 - ☐ Asian or Pacific Islander
 - ☐ Other or Mixed Race
6. Does your employing hospital currently have a health & wellness program?
 - ☐ **Yes**
 - ☐ **No**
 - ☐ **Do not know**
7. Does the hospital offer its wellness programs to others (immediate family member of the employees) in the community?
 - ☐ **Yes**
 - ☐ **No**
 - ☐ **Do not know**

Appendix E (*continued*)
Survey Instrument - *Wellness Participation Survey*

8. Does the hospital workplace have the following Wellness Programs and Benefits to Hospital Employees? Select all that apply to you:

- ☐ Indoor walking trail
- ☐ Outdoor walking trail
- ☐ Employee wellness resource room
- ☐ Employee walking club
- ☐ Employee wellness fairs
- ☐ Annual Health risk assessment
- ☐ Annual Biometric screenings
- ☐ Regular Safety program (e.g., ergonomics, workplace violence education)
- ☐ Free Flu shots or other immunizations
- ☐ Stress management program
- ☐ Disease prevention and management programs
- ☐ Healthy food options (e.g., in cafeteria, vending machines)
- ☐ Free Fruit Water Supply
- ☐ Weight loss programs
- ☐ Gym membership discounts
- ☐ On-site exercise facilities
- ☐ Smoking cessation program
- ☐ Regular Personal health coaching
- ☐ Regular classes in nutrition or healthy living
- ☐ Web-based resources for healthy living
- ☐ Tobacco-free campus
- ☐ 24-hour nursing “help line”
- ☐ Employee Assistance Program (EAP)/mental health services
- ☐ Wellness newsletter

Appendix E (*continued*)
Survey Instrument - *Wellness Participation Survey*

9. What is the level of availability of the program on a scale of one to 10 points?

- ☐ 1-Not available at all
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5-Moderate availability
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10-Very available

10. Does the hospital offer positive incentives to employees who do participate in health and wellness programs?

- ☐ **Yes** ☐ **No** ☐ **Do not know**

11. Does the hospital impose penalties on employees who do not participate?

- ☐ **Yes** ☐ **No** ☐ **Do not know**

12. Would your participation increase if you are given some positive incentives for participation?

- ☐ **Yes** ☐ **No** ☐ **Do not know**

13. Your preference of incentives: Choose from below:

- Gift cards/Cash ☐
- Travel Tickets for a vacation ☐
- Premium discounts ☐
- Lower deductibles ☐
- Higher employer health savings account ☐
- Small tokens ☐
- Subsidized health club membership ☐
- Recognition ☐

14. Does your hospital offer any of the above-mentioned incentives?

- ☐ **Yes** ☐ **No** ☐ **Do not know**

Appendix E (*continued*)
Survey Instrument - *Wellness Participation Survey*

15. How much do you agree or disagree on the scale below about each of the barriers listed as a hindrance in participation in a wellness program?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Long working hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Odd shifts (switch between day, evening and night shifts)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Family obligations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Work-related stress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Distance between workplace, workout sites and home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Non-availability of a gymnasium at workplace for employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Lack of incentives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Privacy reasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Worries about security of personal health information online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Lack of comfort in using internet access to utilize online health programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. How much do you agree or disagree on the scale below about each of the motivations listed as an encouragement in participation in a wellness program?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Incentives for participation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Gymnasium available at worksite	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Paid 30 minutes break for participation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Premium discounts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Lower deductibles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Subsidized health club membership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Higher employer health savings account	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Good quality of sleep with regular exercises	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Stress reduction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Feeling good after participation in a given wellness program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix F
Survey Instrument - Content Validity Index Summary

Survey Question #	Rating of 3 or 4	Rating of 3 or 4 as %age	Comments Expert #1	Comments Expert #2	Comments Expert #3	Comments Expert #4	Comments Expert #5	Comments Expert #6	Summary
1	6	1.00		Rewrite as of Jan 1, 2019					Restated
2	6	1.00							-
3	6	1.00							-
4	6	1.00	Specify age range						Restated
5	5	0.83			Combine race and ethnicity				Restated
6	6	0.83				Give "Do not know" option also			Restated
7	6	0.83				Give "Do not know" option also			Restated
8	6	1.00					List # of programs		Listed
9	5	0.83	Clarify level of participation						Restated
10	6	1.00							-
11	6	1.00							-
12	6	1.00							-
13	6	1.00							-
14	6	1.00							-
15	5	1.00							-
16	5	0.83						Equal the # motivations to barriers	Restated and made equal # 10 motivations to barriers
Total	CVI	0.95	-	-	-	-	-	-	-

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