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# Relationship Between Participation in Employee Wellness Programs and Health-Related Quality of Life Among Health Care Workers

Ana Williams  
*Walden University*

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# Walden University

College of Education and Human Sciences

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Ana Williams

has been found to be complete and satisfactory in all respects,  
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Review Committee

Dr. Carol Spaulding, Committee Chairperson, Health Education and Promotion  
Faculty

Dr. Vanessa Iheanachor, Committee Member, Health Education and Promotion  
Faculty

Chief Academic Officer and Provost  
Sue Subocz, Ph.D.

Walden University  
2025

Abstract

Relationship Between Participation in Employee Wellness Programs and Health-Related  
Quality of Life Among Health Care Workers

by

Ana Williams

M.Ed., American College of Education, 2021

BA, North Central College, 2017

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Education and Promotion

Walden University

August 2025

## Abstract

Employee wellness programs are available in many health care organizations but remain underutilized by health care workers. Low employee participation in these wellness programs can negatively impact employees' health-related quality of life (HRQoL), which, in turn, may adversely influence patient care and overall health outcomes. Despite this, little is known about which factors, such as perceived barriers and benefits, job category, or work shift, are associated with participation. This study addressed that gap by exploring how these variables relate to employee engagement in wellness programs and their potential impact on HRQoL. Guided by the health belief model, this study examined (a) perceived benefits and barriers to participation in employee wellness programs and (b) the relationships among participation frequency, HRQoL, work shifts, job roles, and demographic variables. In this observational, cross-sectional study, 200 health care workers in the United States participated in an online survey. Stepwise multiple linear regression analysis revealed that the ratio of benefits to barriers was the only significant predictor of participation frequency ( $\beta = .86, p < .001$ ). Second, higher participation frequency was positively linked to more reported unhealthy days ( $\beta = .28, p < .001$ ). Age, sex, job category, and race were not significantly associated with participation frequency. These findings can drive positive social change in health care organizations by providing insights into programs promoting healthier lifestyles and improving HRQoL among health care workers. Future efforts may benefit from increasing perceived benefits and reducing perceived barriers to strengthen engagement in wellness programs.

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## Dedication

This dissertation is dedicated to my incredible support system. To my husband, for his boundless patience and love, and for being my rock through the highs and lows. To my mom and brother, whose wisdom, humor, and belief in me have provided the foundation to persevere. To my friends and family for their unwavering encouragement, understanding, and the countless moments of laughter that kept me sane throughout this journey. Thank you all for your love and support. This achievement would not have been possible without each of you.

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## Chapter 1: Introduction to the Study

### **Introduction**

Participating in employee wellness programs results in positive health outcomes (Cheon et al., 2020; Song & Baicker, 2019), such as heightened awareness of behavior change and a supportive atmosphere for healthy living (Altman et al., 2023; Bhaidkar, 2022; Jorvand et al., 2019). Employers implement these programs to improve well-being and prevent disease (Bhaidkar, 2022). Although 46.1% of employers offer some form of health promotion or wellness program (Centers for Disease Control and Prevention [CDC], 2018), few evaluate the impact of these initiatives on health-related quality of life (HRQoL). Researchers need to conduct studies to examine the relationship between HRQoL and the frequency of participation in employee wellness programs. Investigating the effects of HRQoL is essential for health care workers' well-being and ability to care for the public effectively, significantly influencing their overall health (Tamene et al., 2024). The present study may contribute to positive social change in health care organizations by informing health education programs and encouraging health care workers to adopt a positive quality of life and healthy lifestyle choices tailored explicitly for their workplace settings.

This chapter provides a background of HRQoL and employee wellness programs. It also presents the research gap, research questions, and associated hypotheses guiding the research, and addresses the theoretical and conceptual framework clarifying these elements. Additionally, this chapter addresses the study's significance and illustrates how the research may contribute to positive social outcomes.

## **Background**

HRQoL measures an individual's functioning and well-being, reflecting physical and mental health status. Yet, health care workers often face challenges in maintaining their HRQoL despite the availability of workplace wellness programs. Workplace wellness programs aim to improve employee health through education (Nepper et al., 2021) and interventional support (Fang et al., 2019), yet healthcare workers continue to experience diminished well-being (Tamene et al., 2024; Wu et al., 2011). Despite the potential benefits of wellness programs, researchers have not fully explored their direct impact on HRQoL from the viewpoint of healthcare professionals.

Furthermore, there are unresolved questions regarding how perceived benefits, barriers, and the frequency of participation affect HRQoL metrics. Low participation rates in employee wellness programs can undermine the effectiveness of wellness initiatives and deter organizational investment in these programs (Altman et al., 2023). This study is needed to examine the link between involvement in wellness programs and HRQoL among health care workers, offering insights that can lead to better program design, increased participation, and improved employee well-being.

## **Problem Statement**

Researchers have examined the effectiveness of wellness programs in terms of their monetary return on investment for organizations (Bhaidkar, 2022), wellness participation rates (Altman et al., 2023), and modifiable disease risk factors (Cheon et al., 2020; Jorvand et al., 2019). However, researchers have rarely addressed how the perceived benefits and barriers to participation in wellness programs impact employees'

perceived HRQoL. Despite the emergence of employee wellness programs in health care settings, researchers overlook their effect on employees' HRQoL. Ignoring employee HRQoL negatively influences mental well-being, job satisfaction, overall life balance, and positive lifestyle changes (George & Tanner, 2014). Over 75% of participants believe joining employee wellness programs will enhance their health (Knippen et al., 2018). Berry et al. (2010) found that utilizing employee wellness programs increases workplace satisfaction and productivity, lowers health care costs, and improves morale. Song and Baicker (2019) found that employees exposed to a workplace wellness program reported greater rates of positive health behaviors than those not exposed.

Researchers demonstrate the advantages of employee wellness programs, including enhanced productivity (Berry et al., 2010), reduced healthcare costs, increased job satisfaction (Pai et al., 2022), and lower absenteeism (Kurogi et al., 2021), illustrating why companies should encourage employees to maintain a healthy lifestyle. Moreover, employees in worksites with a wellness program report 8.3% more exercise and a 13.6% increase in actively managing their weight (Song & Baicker, 2019). Current literature indicates employee wellness programs' benefits and capacity to transform organizational culture and enhance patient care (Altman et al., 2023), advocating for a shift toward proactive wellness promotion in the health care sector.

In the United States, the leading causes of death and disability are preventable and can be effectively addressed through workplace interventions (U.S. Office of Personnel Management, 2018). According to Bhaidkar (2022), disparities in healthcare investment often surface as a public health concern. Nearly a trillion dollars is spent on healthcare in

the United States, with over 95% directed toward direct medical services and only 5% allocated to national health improvement initiatives that address behaviors and lifestyle choices appropriate for preventive measures, such as employee wellness programs (Bhaidkar, 2022). Unfortunately, Altman et al. (2023) noted that only 46% of employees take advantage of the health screenings employers provide. This finding suggests that among those identified as needing intervention for chronic conditions, just one in five participates in available workplace wellness programs.

This research fills the gap in the literature by investigating how factors such as perceived benefits and barriers to participation in wellness programs predict participation frequency and how participation frequency, job category, and work shift influence health care workers' HRQoL.

### **Purpose of the Study**

The purpose of this quantitative study was to (a) explore the perceived benefits and barriers to participation in employee wellness programs and (b) examine the links among participation frequency, HRQoL, work shifts, job roles, and demographic variables like age, sex, and race/ethnicity.

### **Research Questions and Hypotheses**

Research Question 1: Do perceived barriers and perceived benefits to participating in employee wellness programs predict the frequency of participation in employee wellness programs while controlling for age, sex, and race/ethnicity?

*H*<sub>0</sub>1: The perceived barriers and perceived benefits to participating in employee wellness programs do not predict the frequency of participation in employee

wellness programs among health care workers while controlling for age, sex, and race/ethnicity.

*H<sub>a1</sub>*: The perceived barriers and perceived benefits to participating in employee wellness programs predict the frequency of participation in employee wellness programs among health care workers while controlling for age, sex, and race/ethnicity.

RQ1 was used to determine the effect of perceived barriers to participation and perceived benefits to participation on the frequency of participation in employee wellness programs among health care workers. The dependent variable is the frequency of participation. The independent variables are perceived barriers to participation and perceived benefits to participation. The control variables are age, sex, and race/ethnicity.

Research Question 2 (RQ2): Does the frequency of participation in employee wellness programs, job category, and work shift predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity?

*H<sub>o2</sub>*: The frequency of participation in employee wellness programs, job category, and work shift do not predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity.

*H<sub>a2</sub>*: The frequency of participation in employee wellness programs, job category, and work shift predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity.

RQ 2 was used to determine the effect of the frequency of participation, job category, and work shift on the HRQoL among health care workers. The dependent

variable is HRQoL. The independent variables are frequency of participation, job category, and work shift. The control variables are age, sex, and race/ethnicity.

Research Questions 1 and 2 were examined through an online survey. The HRQoL-14 scale (CDC, 2022) evaluates HRQoL by measuring individuals' health behaviors based on their perceived health, overall psychological well-being, and physical functioning (Shockey et al., 2017). The HRQoL-14 scale captures an individual's ability to perform daily activities and subjective well-being, strongly predicting health outcomes (Karimi & Brazier, 2016; Yin et al., 2016). The Perceived Barriers and Benefits to Physical Activity Scale (PBBPAS; Kamimura et al., 2016b) assesses the perceived benefits and barriers to participation in wellness programs. Job categories include registered nurse, nursing assistant, physician, medical assistant, pharmacist, pharmacy technician, physical therapist, nurse practitioner, medical records staff, physician assistant, occupational therapist, rehabilitation therapist, environmental services technician, imaging/radiology personnel, pharmacologist, building maintenance, support staff, hospital leadership, corporate personnel, and other (please specify). Work shifts include 1st, 2nd, or 3rd, defined as the shift and time of day they work. Participants self-report their frequency of participation in employee wellness programs by indicating the number of visits or activities engaged in with their employee wellness department in the past month. Age is assessed and sorted into brackets: 18-24, 25-34, 35-44, 45-54, 55-64, and 65 or older. Sex comprises either male or female. Race and ethnicity were categorized according to U.S. Department of the Interior classifications as American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native

Hawaiian or Other Pacific Islander, White, or declined to answer (United States Department of the Interior, 2003).

### **Theoretical Foundation**

The health belief model (HBM) functions as the theoretical framework for this study, offering insights into the factors that affect participation in wellness programs and their effects on HRQoL. Originally developed to clarify the low participation rates in health prevention initiatives, the HBM has inspired investigations into the reasons behind this phenomenon (Hayden, 2019). This model closely aligned with the study's objectives and research questions, as the survey measures perceived benefits and barriers regarding participation in wellness programs. Furthermore, the HBM underpins surveys to evaluate HRQoL, highlighting how individual perceptions shape health behaviors and outcomes (Carpenter, 2010). Carpenter (2010) also emphasized the value of using the HBM in creating surveys that capture psychological and situational factors affecting health decisions, like participation in wellness programs. Applying the HBM, this study investigated how perceived benefits and barriers impact health care workers' participation in wellness programs and their HRQoL. It offered essential insights for enhancing program design and participant engagement. Chapter 2 further presents the HBM as the study's theoretical framework, providing a detailed background and examining the HBM's connection to the study through the discussion of its constructs.

### **Conceptual Framework**

The connection between the HBM and this study includes two essential constructs: perceived benefits and perceived barriers. This study examines how perceived

benefits and barriers of participating in employee wellness relate to the frequency of participation in employee wellness programs, as reflected in Research Question 1. Employees who recognize the tangible benefits of participating in employee wellness programs, such as improved health and increased self-esteem (Champion & Skinner, 2008), may prioritize their participation frequency, thus potentially enhancing their HRQoL. Altman et al. (2023) found a significant correlation between perceived support for health and wellness and participation in workplace wellness programs. Inadequate policies, poor eating habits, vague performance goals, and limited health promotion services hinder participation in wellness programs and exercise (Santos & Miragaia, 2023). Chapter 2 delves deeper into the constructs and conceptual framework, which includes the HBM and its relevance to this study. This provides a foundation for understanding the research design and its connection to the theoretical model.

### **Nature of the Study**

This observational, cross-sectional, quantitative study (a) addresses the relationship between how the perceived benefits and barriers to participation in wellness programs predict participation frequency and (b) how participation frequency, job category, and work shift influence health care workers' HRQoL. Control variables include age, sex, and race/ethnicity. This study is observational as it collects data on the experiences of health care workers through a survey that includes insights into perceived benefits and barriers to participation in wellness programs and the HRQoL of health care workers. Observational designs utilizing self-reported measures like surveys reveal internal states or cognitive processes, allowing for a nuanced understanding of how

individuals interact with their environment and themselves (American Psychological Association, 2019). This study reflects a quantitative approach to gathering data valuable for future research and better understanding the extent of HRQoL among healthcare workers. Lastly, this cross-sectional study asks participants to reflect on one time, capturing a snapshot of the past month of participating in employee wellness programs.

In Research Question 1, the independent variables are the perceived benefits and barriers to participation in wellness programs, with the dependent variable being the frequency of participation. In Research Question 2, the independent variables include work shifts, job categories, and the frequency of participation in wellness programs, with the dependent variable being HRQoL. The control variables consist of age, sex, and race/ethnicity.

The chosen methodology is an online survey. The first part of the survey is the HRQoL-14 scale (CDC, 2022). This scale includes core healthy days, activity limitations, and healthy day symptoms. Participants ranked their responses using Likert-type scales, filled in blanks, and answered yes or no questions. Afterward, participants provided demographic information, including age, sex, race/ethnicity, work shift, job category, and the frequency of wellness program participation over the past month. Finally, participants complete the PBBPAS (Kamimura et al., 2016b). This scale contains 10 Likert-type items to assess perceived benefits and barriers to employee wellness program participation.

IBM SPSS Statistics software was used to analyze the collected data using descriptive statistics and stepwise multiple linear regression to address both research questions. Stepwise regression is a model-building method within numerous linear

regression models that systematically adds or removes predictors based on statistical criteria. This approach identifies the most significant predictors while allowing researchers to examine relationships among multiple variables and control for factors such as sex, age, and race/ethnicity. Field (2017) emphasized that multiple regression effectively assesses how one or more predictor variables account for variations in an outcome variable. In this study, multiple regression identifies the strength and significance of the associations among the variables, offering a clearer insight into the relationships within the dataset.

### **Definitions**

*Age:* The survey asked participants to classify their age group as 18-24, 25-34, 35-44, 45-54, 55-64, or 65+.

*Employee wellness programs/services/activities:* An employer's health promotion or wellness program aims to enhance wellness and prevent disease (Bhaidkar, 2022). These programs may provide educational materials such as brochures about health topics, onsite fitness classes, screenings, wellness facilities (CDC, 2018), environmental supports, or policies encouraging individuals to maintain good health (Altman et al., 2023).

*Frequency of wellness participation:* This includes any visits, consultations, fitness classes, or health education sessions an employee has attended or joined. In the survey, participants are asked to self-report their frequency of participation in the month prior.

*Health care:* According to the American Psychological Association (APA; 2020) formatting, this word is still regarded in two words as health care. However, some researchers have used healthcare as one word, as seen throughout the document.

*Health care organization:* A health care organization is a designed, structured social system created to deliver health care services by specialized workforces to defined communities, populations, or markets (Electronic Clinical Quality Improvement Resource Center, 2023). Participants may work at any of the following health care organizations: free clinics, hospice homes, hospitals, nursing homes, orthopedic rehabilitation centers, birth centers, ambulatory surgical clinics, local health departments, community health centers, mental health agencies, emergency departments, urgent care centers, or dialysis centers. Before taking the survey, participants were asked to acknowledge their employment at one of these health care organizations.

*Health care workers:* This study includes all those employed by a health care organization (see health care organization) and is not specific to the job category.

*Health-related quality of life (HRQoL):* An individual's functioning and perceived well-being; functioning refers to the capacity to carry out activities, while well-being encompasses an individual's subjective feelings (Karimi & Brazier, 2016).

*Job category:* A range of categories for employees to select in the survey, including registered nurse, nursing assistant, physician, medical assistant, pharmacist, pharmacy technician, physical therapist, nurse practitioner, medical records, physician assistant, occupational therapist, rehabilitation therapist, environmental services

technician, pharmacologist, building maintenance, support staff, hospital leadership, corporate, or other.

*Perceived barriers:* Obstacles encountered when undertaking a behavior, either preventing the start of a new behavior or the adherence to the current behavior (Gabel et al., 2020).

*Perceived benefits:* Supportive or reinforcing behavior outcomes can be intrinsic or extrinsic depending on the results of prior personal experiences (Gabel et al., 2020).

*Race/ethnicity:* Participants were asked to identify their race or ethnicity. They were categorized as American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, White, or declined to answer (U.S. Department of Labor, 2024).

*Sex:* As defined at birth, two options were available: male and female.

*Work shift:* A standardized method for organizing employees into shifts involves dividing a 24-hour day into consecutive 8-hour blocks: first, second, and third. The first shift, known as the day shift, runs from 9 AM to 5 PM; the second shift, referred to as the afternoon shift, spans from 5 PM to 1 AM; and the third shift, or night shift, occurs from 1 AM to 9 AM (Reinganum & Thomas, 2024).

### **Assumptions**

Using primary data assumes that the information received from participants is accurate, authentic, and truthful. It is also assumed that study participants are competent and able to read and understand the information in the survey. These assumptions are

necessary to collect data appropriately to analyze and develop health education and promotion initiatives supporting healthcare workers.

### **Scope and Delimitations**

This study addressed the relationship between how the perceived benefits and barriers to participation in wellness programs predict participation frequency and how participation frequency, job category, and work shift influence health care workers' HRQoL. The study includes health care workers from all job categories within health care organizations. The population consists of health care workers who engage in wellness programs provided by their employers. Participants completed an online survey.

This study excluded non-health care workers and those who do not have a wellness program offered by their employer from the sample. The findings may be generalized to large health care organizations, reaching a broad employee population, and could apply to other regions within the United States. However, extending the study beyond the country may lead to complications due to variations in job descriptions, company policies, employee wellness programs, work environments, and other factors.

### **Limitations**

Understanding the relationships between the independent variables and their impact on the dependent variables provides insight into factors that affect employee well-being and participation in wellness initiatives. However, several limitations may impact the validity and reliability of this analysis. Field (2017) identified key assumptions of multiple linear regression, such as linearity, independence, homoscedasticity, and normality of residuals. Violating these assumptions can lead to biased estimates and

inaccurate conclusions. A critical assumption is the normality of residuals. Deviations from normality may affect the validity of the regression results, potentially limiting the generalizability of the findings (Hatem et al., 2022). Further discussion on how these assumptions are tested and addressed appears in Chapter 3.

Participation in employee wellness programs is voluntary, but self-selection bias may occur, leading only healthy individuals to participate. The survey remained open to anyone interested in mitigating this potential bias. The survey summary, found on the first page of the survey, clarifies that no pre-qualifications for participation exist, such as current health status. The survey ensures confidentiality, allowing employees to feel secure during the process without facing discrimination or judgment based on their results. Control variables like age, sex, and race/ethnicity can influence participation frequency, necessitating proper control of these factors in the results. I prepared the data for SPSS by checking for any missing values or outliers that could impact the findings. To address limitations, the data was reviewed to confirm its relevance to the research topic and ensure it incorporated all necessary variables for the study. Furthermore, while the HRQoL-14 and PBBPAS are validated, they may not cover all wellness factors, such as work-related stressors, social support, or other influences.

### **Significance**

Employee wellness programs significantly enhance health care workers' HRQoL by allowing them to focus on their well-being without encroaching on personal time. These initiatives advocate for health education and encourage behavior change, enabling individuals to adopt healthier lifestyles (Bhaidkar, 2022). The present study explored how

the frequency of participation in wellness programs correlates with HRQoL and offers important insights into the advantages these programs provide to employees. By pinpointing elements that impact HRQoL, organizations may create well-rounded wellness strategies and initiatives to assist health care professionals better.

Workplace wellness programs also foster wider societal changes by promoting healthier habits among staff. Researchers Altman et al. (2023) found that wellness programs raise awareness, lower barriers to healthy behaviors, and foster lasting behavioral changes. Healthcare professionals who often participate in wellness programs embrace proactive lifestyle adjustments and enjoy better health results (Shiri et al., 2023). The insights from the present study inform the creation of interventions and health promotion resources that support sustainable, healthy choices for health care workers. Examining the link between HRQoL and the frequency of wellness program participation might uncover how resource availability and employee needs influence strategies to improve health outcomes for all health care employees. Delving deeper into these connections can yield practical recommendations for health care organizations and policymakers aiming to enhance employee wellness programs efficiently.

### **Summary**

While Knippen et al. (2018) found that over 75% of wellness program participants believe these programs would enhance their health, researchers should focus more on healthcare workers' HRQoL due to their involvement in such programs. This study examined the relationship between perceived benefits and barriers to participating in wellness programs and their impact on participation frequency. Additionally, it

explored how participation frequency, job category, and work shift affect healthcare workers' HRQoL. The research illustrates how the HBM was a theoretical and conceptual framework for analyzing participation frequency in wellness programs. The findings may inform the development of effective health education and promotion initiatives that support healthcare workers' HRQoL, which is vital for the healthcare system and public health.

Chapter 2 outlines the study's search strategies, theoretical and conceptual framework, variables, and constructs. The chapter also shows the connections between perceived benefits and barriers to the frequency of participation in wellness programs, employee wellness programs, and HRQoL.

## Chapter 2: Literature Review

### **Introduction**

Although 46.1% of employers provide health promotion or wellness programs (CDC, 2018), few studies highlight the potential relationship between these programs and HRQoL among healthcare workers. Employees cite key reasons for participating in wellness programs, such as improving physical health, enhancing mental well-being, and managing stress effectively (PR Newswire, 2024). However, research primarily focuses on reduced health care costs (Berry et al., 2020), increased productivity, and improved morale (Koh et al., 2020) within the broader employee population without addressing the specific needs of health care workers. More literature is needed to explore how often employees participate in wellness programs and their effect on the HRQoL of health care workers. The present study links the perceived benefits and barriers to participation in wellness programs and the frequency of participation. It also addresses how the frequency of participation in employee wellness programs may impact the HRQoL among health care workers.

This chapter provides an overview of relevant literature on employee wellness, the HBM, the perceived benefits and barriers to participation, and HRQoL. The literature review indicates how perceived benefits and barriers predict this participation frequency and how frequency may predict HRQoL. It also shows the theoretical foundation of the HBM, outlining the conceptual framework of two constructs within this model and its application to employee perceptions of their HRQoL and other influential factors. The chapter concludes by presenting supporting literature on the selected quantitative research

design to determine the relationship between participation frequency in employee wellness programs and HRQoL among health care workers.

### **Literature Search Strategy**

The first step in the literature search inquiry involved exploring the Walden University online library. *Workplace wellness* and *healthcare/health care workers* were initially employed to generate keywords for future searches. By combining published literature with the research problem, research questions, and databases, searches were conducted using four keywords: *health-related quality of life*, *health belief model*, *healthcare/health care workers*, and *employee wellness*. APA PsycInfo, Academic Search Complete, Walden's Library, SAGE Journals, and databases through EBSCOHost were utilized for these searches. Filters were applied for sources published from 2019 onward, focusing on peer-reviewed literature to obtain the most current information. The COVID-19 pandemic created significant research gaps, making locating sources from the past five years challenging. Nevertheless, the articles provided a strong foundation, as their reference lists included citations that led to additional relevant examples of employee wellness.

Once a relevant resource was obtained, the methodology, analysis, results, conclusion, and formal references were noted in a literature review matrix table created in Microsoft Word. Over time, additional keywords such as *participation*, *quantitative*, and *application* were incorporated. The combination of search terms proved crucial for finding applicable results. For example, an article was included if it focused on employee wellness, health care workers, the HBM, perceived benefits and/or barriers, or HRQoL.

An article was excluded if the samples focused exclusively on patients or students, if it solely discussed post-COVID-19 feedback, or if it poorly generalized the profession analyzed. HRQoL serves as a concept used across various fields to assess the impact of health on overall quality of life. Some researchers examined HRQoL specifically among health care workers. However, this research does not indicate how participation in employee wellness programs correlates with HRQoL outcomes. While some researchers investigate the HRQoL of health care professionals, they often overlook the potential benefits of wellness programs. Additionally, frequent participation in these programs can improve quality of life, as including terms like *application* or *participation* in the search generated more results than excluding them. Consequently, removing and reorganizing the keywords yielded more results.

### **Theoretical Foundation**

The HBM serves as the theoretical framework for the present study. Hayden (2019) noted that U.S. Public Health Service researchers Irwin M. Rosenstock, Godfrey M. Hochbaum, S. Stephen Kegels, and Howard Leventhal introduced the HBM to the literature in the 1950s to understand better why some individuals undergo screening for tuberculosis while others do not. As a result, the U.S. Public Health Service conducted research to identify the psychological, social, and physical factors influencing this decision (Hayden, 2019). The HBM relies on personal perceptions or beliefs about a disease and the strategies available to prevent it. It considers intrapersonal factors and an individual's values and expectations to shape behavior (Boslaugh, 2024). Initially, the

HBM clarified the low participation rates in health prevention programs, prompting researchers to investigate this issue further.

Ostovarfar et al. (2021) concluded that the HBM model creates a foundation for gradual behavior change. Abood et al. (2003) designed their nutrition education worksite intervention to emphasize perceived benefits and barriers based on the HBM's assertion that for change to occur, the perceived benefits of behavior must exceed the perceived barriers. For example, employees need to recognize that the advantages of employee wellness programs outweigh the perceived costs (Abood et al., 2003). This model was selected for this study because health motivation and behavior change are central to its focus. This theory effectively examines behaviors related to physical health, such as risky behaviors, chronic diseases, and lifestyle choices (Glanz, 2015). Champion and Skinner (2008) noted that the HBM assumptions indicate that anticipated outcomes or expectations influence behavior when a specific action is performed. They also clarify that this outcome/expectation analysis is called value expectancy, an HBM component. The present study concentrated on perceived benefits and barriers to participation in employee wellness programs.

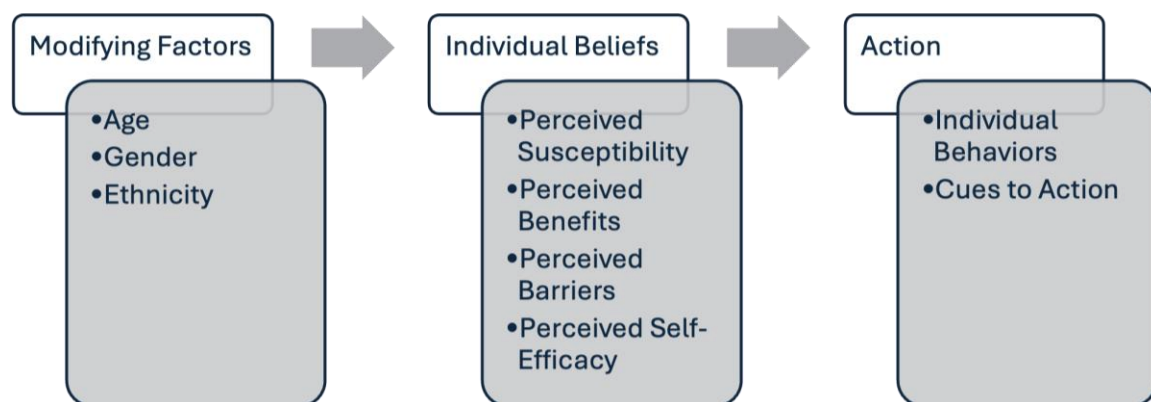
The present study builds upon the HBM by utilizing key components to encourage healthier behaviors among employees. The HBM provides a framework for understanding how health care workers perceive the benefits and barriers of frequent wellness participation in enhancing overall health and well-being. Additionally, this study shows how perceived benefits and barriers influence participants' decisions to engage in employee wellness programs. By applying the HBM, this study indicates the factors that

predict participation in wellness programs and their impact on employees' HRQoL.

Figure 1 illustrates the linear progression from one component of the HBM to the next and highlights the importance of this process in achieving behavior modification.

**Figure 1**

*Health Belief Model Concept Map*



*Note.* Adapted from “Health Behavior: Theory, Research, and Practice in Health Behavior”, by V. Skinner and C. Champion, C., in K. Glanz, B. K. Rimer, and K. Viswanath (Eds.), *Health Behavior: Theory, Research, and Practice in Health Behavior* (Vol. 4, p. 49), 2008, Jossey-Bass. Copyright 2008 by John Wiley & Sons.

### **Conceptual Framework**

This study examines the connections between HBM and health behavior by focusing on perceived benefits and barriers to participation in wellness programs. The primary behavior analyzed is the frequency of participation in employee wellness activities, as reflected in Research Question 1. Figure 2 elaborates on each construct and details employee perceptions for each construct.

**Figure 2***Concept Map Connecting HBM and Employee Perception*

*Note.* Adapted from “Health Behavior: Theory, Research, and Practice in Health Behavior”, by V. Skinner and C. Champion, C., in K. Glanz, B. K. Rimer, and K. Viswanath (Eds.), *Health Behavior: Theory, Research, and Practice in Health Behavior* (Vol. 4, p. 49), 2008, Jossey-Bass. Copyright 2008 by John Wiley & Sons.

The HBM is widely used in research to support employee wellness programs, particularly regarding perceived benefits and barriers. Jorvand et al. (2019) applied the HBM to explore determinants of exercise among healthcare workers, finding a significant positive correlation between perceived benefits and self-efficacy. Similarly, Jorvand et al. highlighted that perceived benefits and self-efficacy are the most predictive physical activity factors. Knippen et al. (2018) utilized the HBM to assess health beliefs, norms,

and attitudes toward wellness programs, employing a Likert-type scale to gauge employee perceptions. Their study revealed that participants acknowledged the value of wellness education in addressing health issues such as diabetes, pre-diabetes, heart health, and obesity, with over 80% indicating that mental health-focused programs would be beneficial. However, time constraints were identified as the most significant barrier to participation (Knippen et al., 2018). These findings by Knippen et al. illustrate the HBM's effectiveness in identifying key factors influencing employee engagement in wellness initiatives, such as the importance of perceived benefits, self-efficacy, and addressing barriers like time limitations. These two research studies collectively emphasize the HBM's utility in designing targeted wellness programs that enhance participation rates and overall effectiveness by tackling employees' perceptions and challenges.

### **Literature Review Related to Key Variables and Concepts**

Understanding the essential variables in this research is critical for building a strong theoretical base and recognizing pertinent empirical evidence. This section evaluates existing literature on each variable, reviewing its conceptual definitions, theoretical frameworks, and empirical connections. By integrating previous studies, this review underscores gaps, inconsistencies, and opportunities for further investigation, offering a thorough context for the current study.

### **Health-Related Quality of Life**

HRQoL refers to an individual's subjective perception of their physical, psychological, and social well-being in the context of their lives. Sitlinger and Zafar

(2018) elaborated on the multidimensional physical, cognitive, social, and cultural components of HRQoL. Their study examined HRQoL in cancer patients before and after treatment and identified the multifaceted nature of a patient's well-being, encompassing physical, psychological, and social dimensions. Experiencing low HRQoL can lead to severe mental and physical illnesses, especially when individuals lack coping resources like exercise, nutritional guidance, and additional support. While researchers can connect patients' HRQoL with the care they receive, there exists a gap in addressing the well-being of health care workers, highlighting the opportunity to implement employee wellness programs, provide free tools and resources, and prioritize their HRQoL.

Health care workers' physical and psychological well-being is significantly tied to HRQoL (Tamene et al., 2024; Wu et al., 2011). Although healthcare workers are already particularly vulnerable to anxiety, depression, and distress, the COVID-19 pandemic resulted in increased absenteeism, malpractice, and lower HRQoL, leading to research on the factors contributing to adverse mental health outcomes in the health care field (Nguyen, K. et al., 2020). Nguyen, K. et al. (2020) highlighted the link between workplace interventions and coping strategies alongside any program implementation, such as healthy eating and physical activity, showing a positive correlation with HRQoL. As part of their proposed management model, researchers Sitlinger and Zafar (2018) recommended integrating HRQoL interventions into daily practice, conducting distress screenings, ensuring mental health resources are readily accessible, and forming committees to establish standards and guidelines for healthcare institutions. Implementing wellness programs, providing access to coping resources, and introducing

workplace initiatives may reduce stress, burnout, and deteriorating mental health among health care workers.

Additionally, Tran et al. (2020) emphasized the connection between workplace initiatives—such as healthy eating, physical activity, and stress management—and enhanced HRQoL among healthcare personnel. Additionally, research by McNight-Eily et al. (2021) and Jiang and Hesser (2008) highlighted the necessity of focused health interventions to address HRQoL disparities, especially in populations less inclined to seek treatment. Enhancing HRQoL for health care workers is vital for cultivating a healthier, more sustainable work environment.

The HRQoL-14 survey has been utilized in numerous studies to investigate the anticipated symptoms of unhealthy days and interventions to address this growing issue among health care workers. Measuring HRQoL assumes that individuals can accurately quantify their health and measure their persistent and consistent loss of health and quality of life over time (Romero et al., 2013). The HRQoL-14 survey is commonly used to evaluate self-reported health, functioning, and well-being, offering significant insights into the factors leading to low HRQoL (Karimi & Brazier, 2016). Karimi and Brazier (2016) defined functioning as the capability to perform activities, while well-being pertains to subjective feelings. In the present study, HRQoL is quantified to represent the utility associated with health; moreover, it encompasses measured values concerning one's health status, such as questions about how many days one feels active, rested, stressed, or energized, all included in the HRQoL-14 survey. In this study, HRQoL was

operationalized by the sum of unhealthy days that one self-reports. This was titled Total Unhealthy Days in the data analysis portion.

### **Employee Wellness**

Employer-sponsored health promotion and wellness programs significantly boost well-being and help prevent disease (Bhaidkar, 2022). These programs provide resources such as educational materials, activities, classes, screenings, services, environmental support, and policies designed to encourage healthier lifestyles (CDC, 2018). The Patient Protection and Affordable Care Act allocates funding to promote workplace wellness programs, underscoring their role in enhancing employee health (Song & Baicker, 2019). Moreover, organizations like the World Health Organization and the CDC champion implementing these programs to strengthen population health (Altman et al., 2023). Altman et al. (2023) found that workplaces with dedicated wellness departments reported higher perceived support for wellness, positively affecting motivation and participation in wellness efforts. Their study also found that employees rate their participation in wellness programs ( $m = 4.26$ ) more highly than their motivation ( $m = 3.02$ ), emphasizing the importance of accessible and well-structured wellness initiatives.

Workplace wellness programs focus on changing behaviors, making their reported benefits more evident than direct improvements in clinical or employment outcomes. However, these behavioral changes lead to a positive return on investment for wellness initiatives (Song & Baicker, 2019). For example, the Cleveland Clinic achieved \$360 million in medical cost savings, expanded its workforce by 20,000 employees, maintained its status as a leading hospital, and significantly increased the number of

employees with improved or absent chronic disease markers (Pauer & O'Donnell, 2020). These accomplishments are directly linked to the launch of its employee wellness program in 2005, bolstered by a peer-reviewed quantitative study published 13 years later that confirmed its effectiveness (Pauer & O'Donnell, 2020). This concrete example highlights the long-term advantages of workplace wellness programs in improving employee health, lowering healthcare costs, and fostering organizational effectiveness.

### **Frequency of Participation**

Workplace wellness initiatives are investments in the health and well-being of employees across diverse sectors. Recent studies emphasize the substantial advantages of such programs, particularly in enhancing HRQoL through increased engagement and healthier lifestyle choices. Altman et al. (2023) concluded that those participating in wellness programs tend to adopt healthier habits, like boosting physical activity and mastering effective stress management techniques. These transformations are essential for improving HRQoL, with higher levels of program participation associated with better mental and physical health outcomes (Altman et al., 2023). Furthermore, a systematic review by Marin-Farrona et al. (2023) revealed that employees who partake in physical health-centered wellness programs at least monthly see significant improvements in HRQoL. Such initiatives provide essential resources, including planned exercise schedules and nutritional guidance, leading to enhanced cardiorespiratory fitness, fewer musculoskeletal issues, and a considerable uplift in HRQoL (Marin-Farrona et al., 2023). Workplace wellness programs are crucial for promoting healthier lifestyles and enhancing employee well-being.

However, Song and Baicker (2021) indicated that despite the widespread availability of various wellness programs, participation rates and the sustained benefits from consistent engagement tend to diminish over time. They also found that health behaviors stabilize after three years, reflecting similar levels at 18 months, with no notable advancements in later evaluations (Song & Baicker, 2021). This highlights the necessity of ongoing involvement in wellness initiatives to obtain enduring health benefits. Evidence reveals that the frequency of participation closely correlates with program design, especially in efforts targeting both physical and mental health, resulting in significant enhancements in HRQoL (Marin-Farrona et al., 2023). Programs that offer personalized experiences, are easily accessible, and promote social support tend to be most effective in fostering positive, long-term improvements in participants' well-being.

### **Perceived Benefits**

Perceived benefits play a critical role in shaping employees' participation in workplace wellness programs because they reflect individuals' beliefs about the effectiveness of these programs in improving health outcomes and overall well-being. Varga et al. (2021) found that employees who believe that improving their diet leads to better health outcomes, such as increased energy or weight loss, are more likely to engage in employer-provided wellness programs. Their study also revealed a statistically significant relationship between employees' perceptions of program benefits and positive effects on stress levels, turnover intention, and perceived organizational support (Varga et al. 2021). Additionally, Altman et al. (2023) demonstrated that perceived support for health and wellness significantly correlates with participation in workplace wellness

programs, emphasizing the importance of fostering a culture of health within organizations. Employees frequently cite key reasons for participating in wellness programs, including improving physical health, enhancing mental well-being, and managing stress (PR Newswire, 2024). Moreover, healthcare workers identified specific benefits of exercise, such as reduced stress, improved mental health, enhanced mood, and higher work quality (Gabel et al., 2020). Although Gabel et al. (2020) did not directly explore the correlation between exercise and HRQoL, research by Choi et al. (2020) supports a positive relationship between aerobic activity and increased HRQoL. All these researchers stressed the importance of perceived benefits in driving employee engagement in wellness programs. They suggested that organizations can enhance participation by emphasizing these programs' tangible health and well-being advantages.

### **Perceived Barriers**

Perceived barriers are major factors that hinder individuals from participating in employee wellness programs, as they create challenges that lead to cost-benefit evaluations and influence decision-making. These barriers encompass fears of adverse health outcomes such as heart attacks (Knippen et al., 2018), time constraints, convenience issues, lack of knowledge, feelings of vulnerability during consultations, doubts about program effectiveness, and difficulties in implementing advice (Gatchel & Schultz, 2012). Carpenter (2010) highlighted that avoidance behaviors increase when adverse outcomes relate to physical or mental impairments, pain, or even death, with pain being a significant hindrance to engaging in activities like personal training. Employees also mention obstacles such as time scarcity, lack of interest in available programs, and

insufficient awareness or access to wellness initiatives (PR Newswire, 2024). Santos and Miragaia (2023) identified additional organizational barriers, including ineffective policies to support employees, poor healthy eating habits, limited performance objectives for workplace health enhancement, and inadequate health promotion services. These barriers collectively demonstrate how individual and organizational factors can obstruct participation in wellness programs. For instance, fear of pain or negative outcomes can discourage physical activity, while structural challenges like time limitations and insufficient policies further limit engagement. It is essential to address these impediments to develop effective wellness programs that enhance participation by removing obstacles and aligning with employees' needs and apprehensions.

### **Job Category**

HRQoL has been studied across various industries as workplace wellness programs become more popular. Song and Baicker (2019) examined a warehouse retail company with a comprehensive workplace wellness initiative. In a controlled trial, participants were assigned to either a treatment or control group, with those in the treatment group receiving access to a wellness program. Song and Baicker discovered significantly higher rates of positive self-reported health behaviors in the treatment group compared to the control group. Some of the metrics assessed included cholesterol levels, hypertension, and obesity. Additionally, those in the treatment group reported exercising more regularly and actively managing their weight (Song & Baicker, 2019). Although the study population did not include health care workers, the findings align with other

research suggesting that employee wellness programs positively affect exercise, weight management, and measurable biometric health outcomes.

Concerning the healthcare industry, nurses experience the highest levels of stress and burnout, resulting in lower HRQoL scores (Ruiz-Fernández et al., 2020).

Furthermore, Gabel et al. (2020) found that nurses face more barriers and receive fewer benefits from physical activity than physicians. This highlights an urgent need for health promotion programs, such as wellness initiatives, to enhance healthcare workers' understanding of the importance of maintaining physical health and well-being.

Additionally, it underscores the necessity of investigating potential differences in job categories and the frequency of participation in employee wellness programs.

The present study classifies health care workers into various job categories on the survey: registered nurses, nursing assistants, physicians, medical assistants, pharmacists, pharmacy technicians, physical therapists, nurse practitioners, medical records staff, physician assistants, occupational therapists, rehabilitation therapists, imaging/radiology personnel, environmental services staff, pharmacologists, maintenance workers, support staff, hospital leadership, corporate roles, and others (please specify). Participants were asked to identify with one of the job categories in the demographic section of the survey.

### **Work Shift**

Health care workers have diverse shift schedules that can affect their well-being and HRQoL. They may work 8-hour shifts (7 AM–3 PM, 3 PM–11 PM, 11 PM–7 AM), 10-hour shifts (7 AM–5 PM, 5 PM–3 AM), or 12-hour shifts (7 AM–7 PM, 7 PM–7 AM). Caruso (2014) found that longer shifts, especially 12-hour night shifts, increase fatigue,

stress, and lower job satisfaction. Furthermore, shift work is associated with adverse health effects, such as sleep problems and heightened cardiovascular risks (Chang & Lang, 2021). These results underscore the need for workplace policies that promote health care workers' well-being, including organized rest breaks, fatigue management initiatives, and mental health support. By tackling the issues stemming from diverse shift schedules, health care organizations can enhance HRQoL, improve employee retention, and elevate the quality of patient care.

### **Age**

With the increasing number of adults working past traditional retirement age, organizations must focus on the interplay of aging, employment, and health to effectively support this demographic. Pitt-Catsouphes et al. (2015) noted that poor health adversely affects employee productivity across all age groups, particularly among older workers. Despite offering various wellness initiatives to enhance employee health, organizations face difficulties engaging older adults due to challenges like time limitations, inconvenient locations, and declining health (Pitt-Catsouphes et al., 2015). Although these programs aim to assist employees in managing chronic conditions and adopting healthier lifestyles, older adults often partake less frequently, partly because the initiatives may not meet their specific needs (Talley et al., 2019). Talley et al. (2019) revealed that older adults often juggle multiple health issues and encounter challenges that impact their well-being. Talley et al. also found that older adults favor activities aligned with their health behaviors. This emphasizes the importance of tailored

educational resources and trained staff to deliver relevant information, ensuring wellness programs effectively cater to the requirements of older employees.

### **Sex**

Research suggests that sex differences can significantly influence engagement in wellness programs and self-perception of health behaviors. In a study by Sood et al. (2019) involving over 2,700 participants, female participants showed lower self-efficacy in sustaining physical activity and diminished overall activity levels. Complementing these findings, Talley et al. (2019) discovered that female participants preferred engaging in wellness activities with peers of similar age or sex. These two studies highlight the critical role of social connection, established routines, and tailored activity formats in enhancing program participation.

Further illustrating the impact of sex differences, women represent approximately 78% of the initial enrollees in chronic disease self-management programs, which serve over 100,000 participants (Talley et al., 2019). Smith et al. (2015) also pointed out a consistent trend in health promotion research, indicating that female enrollment rates in wellness programs exceed those for males. Despite mixed findings in previous studies regarding sex differences in wellness program participation, a significant research gap remains regarding how these differences affect HRQoL outcomes. Addressing this gap is essential for developing more inclusive and effective wellness initiatives that meet the needs of a diverse range of participants.

**Race/ethnicity**

Demographic factors significantly shape participation in workplace wellness programs, with income, financial concerns, and perceptions of employer support serving as key influences. Fronstin and Greenwald (2021) found that Black and Hispanic workers typically have lower incomes and fewer assets than their White counterparts, which directly impacts their engagement in wellness initiatives. Additionally, increased financial concerns make Hispanic workers more likely to participate in programs that provide financial incentives (Frostin & Greenwald, 2021). Their findings suggest that financial barriers and motivations strongly influence participation rates among various demographic groups. Furthermore, Black and Hispanic employees tend to critically assess their employers' wellness initiatives compared to White employees, indicating potential disparities in how workplace support is perceived and accessed (Frostin & Greenwald, 2021). Understanding these demographic influences is essential for designing inclusive wellness programs that address financial barriers and foster trust among diverse employee populations.

Financially incentivized wellness programs prove particularly effective in boosting participation among underrepresented groups. Meints et al. (2019) examined a program to enhance physical activity and found that African American and Black participants reported greater benefits than their White counterparts. Their study also indicated that Black individuals from lower socioeconomic backgrounds may value financial incentives more, making these programs especially impactful. These findings emphasize the significance of incorporating financial incentives into wellness programs

to improve participation rates and promote equitable access to workplace health initiatives.

### **Summary and Conclusions**

Employee wellness programs are available to enhance HRQoL and organizational performance. However, significant gaps persist in understanding their impact on health care workers and the factors influencing their participation. This literature review suggests that health care workers often encounter challenges related to HRQoL, and only a small percentage of employees take advantage of their employer-sponsored wellness programs. Wellness program initiatives promote well-being by raising awareness of available resources and fostering psychologically safe environments. Despite the potential benefits of wellness programs, research gaps remain concerning the relationship between health care workers' engagement in wellness programs and their HRQoL. The HBM indicates that comprehending health motivation and behavior change could illuminate participation patterns. The current study examines how participation in wellness programs correlates with HRQoL and the perceived benefits and barriers affecting participation.

Chapter 3 discusses the study's methodology, which includes using primary data. It details the research design, rationale, and methodology. Additionally, the data analysis plan, threats to validity, and ethical procedures are reviewed.

## Chapter 3: Research Method

### **Introduction**

This quantitative study aimed to (a) explore the perceived benefits and barriers to participation in employee wellness programs and (b) examine the links among participation frequency, HRQoL, work shifts, job roles, and demographic variables like age, sex, and race/ethnicity. This chapter provides a comprehensive overview of the study population, outlines the data collection methods, and details the research methodology used. Additionally, it addresses the validity of the findings, the ethical considerations taken during the research process, and the statistical procedures necessary for effectively testing the research questions. By analyzing these elements, this chapter establishes a solid foundation for understanding the dynamics of employee wellness and HRQoL.

### **Research Design and Rationale**

This quantitative survey design included two research questions supported by the associated hypotheses. The first research question's independent variables were perceived benefits and barriers to participation in employee wellness programs, with the frequency of participation as the dependent variable. The second research question's independent variables were the frequency of participation in employee wellness programs, job category, and work shift, while HRQoL served as the dependent variable. Table 1 illustrates the instruments or scales used to measure each variable.

**Table 1***Instruments and Scales Applied to the Variables in the Study*

Variable	Instrument	Item/scale
HRQoL	HRQoL-14 survey	Part 1: items 3-16, multiple choice, Likert-type scale, and short answer
Age, sex, race/ethnicity, the frequency of participation	Demographic section of the survey	Part 2: items 17-22, multiple choice, and short answer
Perceived barriers/benefits	PBBPAS	Part 3: items 23-32, multiple choice and 4-item Likert-type scale

*Note.* HRQoL = health-related quality of life; HRQoL-14 = Health-Related Quality of Life 14 Scale; PBBPAS = Perceived Benefits and Barriers to Physical Activity Scale.

The present study focused on health care workers' views and experiences with employee wellness programs and their impact on HRQoL. Observational research is ideal for exploring the relationships between these variables (Zapf et al., 2024), as it enables researchers to analyze self-reported data, like surveys, to gain insights into internal states and cognitive processes (Lindahl et al., 2019). Utilizing an online voluntary participation platform, the current study overcomes time and resource limitations common in observational research, offering participants increased flexibility and improved response accuracy compared to traditional in-person surveys (Kılınç & Fırat, 2017). Previous studies have shown the success of surveys in capturing employee views on wellness programs and their effects on well-being and health (Saeed et al., 2024). Online surveys are a cost-effective and efficient method for data collection, streamlining answer structures and minimizing reliance on open-ended responses (Nayak & Narayan, 2019).

These digital platforms have transformed participant recruitment and data collection by enhancing cost efficiency, alleviating time constraints, and streamlining methodologies (Oudat & Bakas, 2023). This improved accessibility boosts participation rates (Kılınç & Fırat, 2017), thereby enhancing the reliability of findings regarding health care workers' experiences with wellness programs.

### **Methodology**

This section outlines the approach to addressing the research questions, research design, and data collection methods I employed to gather the data. The population section specifies the group under investigation, elaborating on their characteristics and relevance to the research objectives.

### **Population**

This study involved health care workers aged 18 and older in health care organizations across the United States. According to Smith and Blank (2023), an estimated 14.7 million healthcare workers in the United States account for 9.3% of total employment. Participants worked at various health care facilities, including free clinics, hospice centers, hospitals, nursing homes, orthopedic rehabilitation centers, birth centers, ambulatory surgical clinics, local health departments, community health centers, mental health agencies, emergency departments, urgent care centers, or dialysis centers. The target population size for this research study was 200.

### **Sampling and Sampling Procedures**

Convenience sampling was used to recruit participants. Eligible individuals must be employed by a health care organization offering employee wellness programs and

voluntarily agree to participate. The sampling frame includes those with SurveyMonkey accounts who meet these criteria. SurveyMonkey offers web-based survey solutions and aids in participant recruitment, enabling researchers to focus on specific populations. Participants who did not work for a health care organization or whose employers does not provide wellness programs were excluded from the current study.

G-Power software determined the statistical test standards relevant to the social, behavioral, and biomedical sciences (Faul et al., 2009). Calculating the sample size and power before collecting data was essential. To achieve a 95% confidence interval, the estimated sample size was 170 individuals. The a priori power analysis assumptions included a medium effect size of 0.15 and an alpha level of 0.05 (Kang, 2021). The commonly accepted alpha value of 0.05 signifies a 5% probability of concluding that there is a significant relationship between the variables (Creswell, J. W., & Creswell, J. D., 2018).

### **Procedures for Recruitment, Participation, and Data Collection**

Data was collected through SurveyMonkey, an online platform that allows researchers to design and share surveys with specific participants through its Target Audience collector (SurveyMonkey Inc., 2024). Each survey was encrypted using Secure Socket Layer (SSL) technology to protect data (SurveyMonkey Inc., 2024). Responses were stored in a secure, isolated database on SurveyMonkey's servers, which could only be accessed with my unique username and password.

SurveyMonkey assisted in participant recruitment by recruiting individuals in their global panel with existing SurveyMonkey accounts who qualified as health care

workers at organizations with employee wellness programs (SurveyMonkey Inc., 2024). Based on the rigorous SurveyMonkey audience standards for data accuracy, recruitment via email for research purposes is widely accepted (SurveyMonkey Inc., 2024). Eligible participants received an email from SurveyMonkey informing them about the available survey and providing a direct link.

Informed consent was provided before participants entered the survey.

Participants were asked if they agreed with the consent terms by clicking “yes” and moving to the following information page or “no” to exit the survey. The introductory page of the survey provided an overview, estimated completion time, and eligibility requirements. To participate, individuals had to meet two eligibility criteria and respond “yes” to the following questions: Are you a health care worker, as defined below? Does your health care organization offer an employee wellness program, as described below? If participants responded “no” to either question, they were thanked for their time and informed that they did not qualify for the study and could not continue to the survey questions. Once participants confirmed they met the eligibility criteria, they could proceed to answer the survey questions. Data collection began after the institutional review board approved the research study. SurveyMonkey served as the platform for data collection, enabling the creation of surveys and data and ensuring data protection (SurveyMonkey Inc., 2024). I collected data until the minimum number of required participants was met. After completing the survey, participants received a thank-you for their involvement and could close the survey window. There was no requirement for follow-up with participants.

## Instrumentation

The survey used for this research, found in Appendix A, comprised a combination of open- and closed-ended questions designed to analyze the relationship between participation frequency in employee wellness programs and HRQoL. The survey included the HRQoL-14 scale, demographic questions, and the PBBPAS. Table 1 illustrates the relationship between the survey questions and the research questions.

**Table 2**

*Relationship Between Research Question and Survey Question*

Research question	Survey question
1. How do perceived barriers to participation and perceived benefits to participation predict the frequency of participation?	20, 23–32
2. How do the frequency of participation, job category (nurses, physicians, etc.), and work shift predict the HRQoL among health care workers?	3–32

## HRQoL-14 Scale

The CDC developed the HRQoL-14 survey in the 1990s to evaluate well-being and monitor individuals' views on their physical and mental health over time (CDC, 2017). This tool aids public health officials in identifying population health needs, formulating policies, and implementing effective interventions. Researchers utilized the HRQoL-14 to analyze how diseases and health issues impact daily life and functional capacity. Integrated into the CDC's Behavioral Risk Factor Surveillance System, the HRQoL-14 tracked health behaviors and access to care nationwide. The survey featured the "Healthy Days Measures," which asked about participants' physical health, mental

well-being, and activity limitations from the past 30 days. Scores were derived by totaling the number of physically and mentally unhealthy days, capped at 30 unhealthy days. The CDC offers this tool to the public freely, without the need for permission or licensing fees (CDC, 2022). The survey comprised multiple-choice, yes/no, and Likert-type questions, making it a practical and effective means of collecting health-related data.

HRQoL-14 data is categorized by self-reported healthy days scores into two groups: (1 = *excellent, very good, and good*, and 2 = *fair and poor*), while recording results on a scale from 0 to 30, with a focus on the total number of physically and mentally unhealthy days (CDC, 2017). Self-reported unhealthy days provided a subjective measure of how mental and physical health issues affect individuals over time, and public health professionals often combined healthy and unhealthy days into a summary measure called the “Healthy Days Index” (Drum et al., 2008). Health care workers reporting more unhealthy days tend to have a lower quality of life, adversely impacting their professional performance and overall well-being (Tawfik et al., 2019). Additionally, personal health and well-being assessments significantly influence stress levels, highlighting deficiencies in quality of life that traditional yes/no surveys may overlook. By focusing on unhealthy days and their effects, the present study aimed to provide deeper insights into how perceived health challenges impact health care workers’ lives and to identify areas for targeted interventions that could enhance their well-being and job performance.

The HRQoL-14 instrument has been extensively utilized in population-based surveys to assess health status, with its user-friendly design and scoring metrics making it

a valuable tool for measuring both physical and mental health over time. Numerous studies employed the HRQoL-14, particularly in national health surveys, to evaluate the population's health status (Drum et al., 2008). Islam et al. (2023) emphasized the instrument's user-friendliness, highlighting its effectiveness in estimating the total number of days in the past 30 when respondents experienced physical or mental discomfort. The scoring system and healthy days metrics offer flexibility for statistical analysis due to their mathematical properties, ranging from 0 to 30 days, making them effective for measuring the duration and impact of illness (Islam et al., 2023). These features render the HRQoL-14 a reliable and practical tool for understanding health trends and guiding public health interventions.

The second part of the survey required participants to provide demographic information, including age, sex, race/ethnicity, job category, work shift, and the frequency of wellness visits. This section includes the variables I used in the statistical analysis. After completing these demographic questions, participants completed the PBBPAS.

### **PBBPAS**

Kamimura et al. (2016a) developed a scale to measure perceptions of psychological and contextual benefits and barriers related to physical activity. It is highly relevant for assessing participation in employee wellness programs, which often emphasize physical activity as a core component (CDC, 2018). Kamimura et al. created this validated instrument based on a National Institute of Health article about improving health, grounding it in the HBM to focus on the benefits and barriers influencing physical activity and lifestyle choices. The scale is publicly available and does not require special

permission for use. Its reliability is demonstrated by Cronbach's alpha values of 0.938 for perceived benefits and 0.868 for perceived barriers (Kamimura et al., 2016a), indicating that it effectively measures the intended constructs. Given its focus on physical activity and its alignment with the HBM, this scale was valuable for understanding factors influencing participation in wellness programs and designing interventions to address perceived barriers.

The 10-item instrument employs a Likert-type scale to evaluate participants' perceived benefits and barriers to employee wellness opportunities. The 5-point scale ranges from 1 to 5: (1) *strongly disagree*, (2) *somewhat disagree*, (3) *neutral*, (4) *somewhat agree*, and (5) *strongly agree*. I calculated perceived benefits by summing the scores from questions #23-27, where a higher score indicated greater benefits. Conversely, the barrier scale reversed questions #28-32 scores, with a higher score reflecting fewer perceived barriers (Gabel et al., 2020). A higher score in perceived benefits suggested a more significant anticipated impact on employee wellness, while a lower score in perceived barriers signified fewer obstacles to participation.

For a complete picture of how participants perceive wellness programs, I combined two variables into a single measure, the benefits-to-barriers ratio (benrat). This was done by dividing the total score for perceived benefits by the reversed total score for perceived barriers. The ratio showed how much more participants valued the benefits of wellness programs compared to the challenges they faced. A higher benrat value meant participants saw a lot more benefits than barriers. I used this composite score as a predictor variable in the regression analysis.

## **Operationalization of Variables**

The variables were age, race/ethnicity, sex, work shift, job category, perceived benefits and barriers to participation, HRQoL, and the frequency of participation in employee wellness programs.

**Age:** Question 17 in the survey operationalized age. In years, the survey asked participants to classify their age group and was coded as (1) 18-24, (2) 25-34, (3) 35-44, (4) 45-54, (5) 55-64, and (6) 65+.

**Race/ethnicity:** Question 19 in the survey operationalized race/ethnicity. Participants were asked to classify their race/ethnicity. They were coded as (1) American Indian or Alaska Native, (2) Asian, (3) Black or African American, (4) Hispanic or Latino, (5) Native Hawaiian or Other Pacific Islander, (6) White, or (7) declined to answer.

**Sex:** Question 18 in the survey operationalized sex with two categorical options: male (1) and female (2).

**Work shift:** Question 22 in the survey operationalized the work shift. The survey asked participants to identify which shift best aligned with their job: (1) first, (2) second, or (3) third. Each shift was explained and included example times, such as the first-day shift (typically 9 a.m.–5 p.m.).

**Job Category:** The job category was operationalized by Question 21 in the survey. This question asked participants to select the best option for their line of work. The categorical variables were coded as follows: (1) registered nurse, (2) nursing assistant, (3) physician, (4) medical assistant, (5) pharmacist/pharmacy technician/pharmacologist, (6)

physical therapist, (7) nurse practitioner, (8) medical records, (9) physician assistant, (10) occupational therapist, (11) rehabilitation therapist, (12) environmental services technician, (13) building maintenance, (14) support staff, (15) hospital leadership, (16) corporate, (17) other.

Perceived benefits: Operationalized by survey Questions 23 through 27. They referred to an individual's assessment of the effectiveness of various actions to reduce the threat of disease (Hayden, 2019).

Perceived barriers: Questions 28 to 32 in the survey operationalized perceived barriers. These barriers represented obstacles to implementing a recommended action plan, which may have prompted a cost/benefit analysis for the participant (Hayden, 2019).

HRQoL: Questions 3 to 16 in the survey operationalized HRQoL, which referred to an individual's subjective assessment of life dimensions as they related to overall health and the perceived state of physical and mental well-being over time (Wu et al., 2011; CDC, 2022).

Frequency of participation: Question 20 in the survey operationalized the frequency of participation as any visits, consultations, fitness classes, or health education classes that an employee had attended or joined.

### **Data Analysis Plan**

This section presents the plan for collecting and analyzing data, using rigorous methods to reveal patterns and insights related to the research questions. Appropriate statistical techniques and analytical tools were applied for accurate data interpretation.

Each analysis step is clearly outlined, covering data cleaning, preparation, and the execution of stepwise multiple linear regression, ensuring validity and reliability.

### **Data Cleaning and Screening Process**

After gathering the data, IBM SPSS Statistics v30 was employed for data analysis. The first step in data analysis involved cleaning, screening, identifying, and rectifying errors or irrelevant data within the raw dataset. This included conducting missing value analysis and descriptive statistical analysis in SPSS. I also verified that all variables were included in the dataset and filtered unique identifiers by performing a frequency distribution test on each variable. Once this was finished, I conducted stepwise multiple linear regression analyses to answer the research questions and performed the F-test to evaluate the hypotheses.

The data was then evaluated using both descriptive and inferential statistical methods. Descriptive statistics summarized health care workers' characteristics and participation in employee wellness programs. Frequencies and percentages represented demographic variables such as sex, age, race/ethnicity, job category, and work shift. Inferential statistics were used to interpret patterns in the data through stepwise multiple linear regression analyses conducted to address both research questions. First, I examined how the frequency of participation in employee wellness programs, the dependent variable, related to the independent variables: perceived benefits and barriers to participation. Next, I assessed how HRQoL, the dependent variable, related to participation frequency, job category, and work shift. As discussed in Chapter 2, the covariates of age, sex, and race/ethnicity were considered potential contributors to the

dependent variables and were included in the regression models. The stepwise method facilitated the identification of the most statistically significant predictors by systematically adding or removing variables based on predefined criteria, thereby enhancing model efficiency and interpretability.

### **Research Questions and Hypotheses**

The following are the research questions and hypotheses, as written in Chapter 1. Survey Questions 21-24 were used to answer Research Question 1, and Survey Questions 3-26 were used to answer Research Question 2.

Research Question 1 (RQ1): Do perceived barriers and perceived benefits to participation predict the frequency of participation in employee wellness programs while controlling for age, sex, and race/ethnicity?

$H_01$ : The perceived barriers to participation and perceived benefits to participation do not predict the frequency of participation in employee wellness programs among health care workers while controlling for age, sex, and race/ethnicity.

$H_a1$ : The perceived barriers to participation and perceived benefits to participation predict the frequency of participation in employee wellness programs among health care workers while controlling for age, sex, and race/ethnicity.

A stepwise regression analysis was used to examine the relationship between the frequency of participation (dependent variable) and the benefit-to-barriers ratio score, *benrat* (independent variable), after controlling for age, sex, and race/ethnicity. The *F*-test was employed to test the hypothesis and determine whether perceived barriers and perceived benefits of participation predict the frequency of participation.

Research Question 2 (RQ2): Does the frequency of participation in employee wellness programs, job category, and work shift predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity?

*H<sub>0</sub>2*: The frequency of participation in employee wellness programs, job category, and work shift do not predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity.

*H<sub>a</sub>2*: The frequency of participation in employee wellness programs, job category, and work shift predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity.

This study presents descriptive statistics for the variables, including the mean, standard deviation, and range. The confidence interval was reported at 95%, indicating a 95% confidence that the coefficient value lies within this.

While controlling for selected demographic variables, a stepwise multiple linear regression analysis was used to test the relationship between HRQoL (the dependent variable) and the frequency of participation, perceived barriers, perceived benefits, job category, and work shift (the independent variables). The *F*-test was utilized to test the hypothesis and determine whether all the independent variables predicted HRQoL. The significance level (*p*-value) was set at  $p < 0.05$ , allowing for the rejection of the null hypothesis that the coefficient is zero.

### **Variables**

Participation in wellness programs affected HRQoL differently based on factors such as age (Pitt-Catsouphes et al., 2015; Talley et al., 2019), race/ethnicity (Fronstin &

Greenwald, 2021), and sex (Smith et al., 2015; Talley et al., 2019). Therefore, the frequency of participation does not solely determine these outcomes. Including control variables such as age, sex, and race/ethnicity reduced residual variability, leading to more accurate estimates of the coefficients for the main independent variables. Ignoring control variables results in omitted variable bias, incorrectly attributing effects to other independent variables. The current study incorporated control variables to enhance the model's generalizability, reflect real-world dynamics, and deepen understanding of the factors influencing HRQoL and employee wellness program participation frequency.

### **Testing Assumptions**

Before fitting the model, key assumptions were evaluated. Normal distribution was assessed using a histogram to confirm a standard bell curve, determining homoscedasticity. The Durbin-Watson test determined the independence of residuals. Multicollinearity was measured using the variance inflation factor (VIF), with a value exceeding 5-10 indicating potential issues (Lewis-Beck, C., & Lewis-Beck, M., 2016). Outliers were detected through case-wise diagnostics. Lastly, a P-P scatterplot confirmed the linear relationship between the dependent variable and each independent variable and between the dependent variable and all independent variables (Lewis-Beck & Lewis-Beck, 2016).

### **Multiple Linear Regression Analysis**

A stepwise method was employed in the multiple linear regression analysis to identify which variables significantly predicted the dependent variable. Separate stepwise regressions were conducted for each dependent variable: the frequency of wellness

participation and HRQoL. The overall model significance was evaluated using analysis of variance (ANOVA), with the *F*-test assessing the significance of the regression model (Lewis-Beck & Lewis-Beck, 2016). Considering there was no violation of assumptions, the results included an overall model significance and a table of coefficients. Comparing models determined whether adding additional control variables significantly improved the model's fit (Dunteman & Ho, 2011). Positive coefficients indicated that independent variables increased the likelihood of more frequent participation, while negative coefficients suggested decreased participation likelihood (Liang et al., 2020). Coefficients with  $p < 0.05$  were deemed significantly different from 0. By utilizing stepwise multiple linear regression, this analysis identified the most significant predictors of participation frequency and HRQoL, offering a focused understanding of the key factors influencing employee wellness program engagement.

### **Threats to Validity**

This study's validity was assessed through external and internal dimensions, ensuring that the results can be generalized to larger populations and are free from biases or errors that might affect the outcome. External validity signified how well the findings from the study sample can be applied to a broader population, encompassing concepts of generalizability and transportability (Findley et al., 2021). Generalizability involved drawing conclusions based on a sample, while transportability referred to applying findings from one group to another (Findley et al., 2021). To enhance external validity, initial screening questions in the survey confirmed participants' status as health care workers, and the research did not target specific employees from any one hospital.

Additionally, observational design allowed for recording behaviors in participants' natural environments without intervention from the researcher.

Internal validity tackled potential threats to the research process, including omitted variable bias, measurement inaccuracies, and violations of statistical premises like linearity, normality of residuals, and multicollinearity (Carmines & Zeller, 2011). Careful selection, testing, and control variable analysis were employed to mitigate these risks. A range of statistical tests, such as the *F*-test, were used to assess the validity of the regression model, with an emphasis on minimizing Type I and Type II errors, which involve incorrectly rejecting either a true or false null hypothesis (Creswell & Creswell, 2018). By addressing external validity through meticulous sampling and generalizability measures, the current study aimed to produce findings that apply to other health care organizations examining the effects of wellness programs on employee HRQoL. Internal validity was maintained through thorough statistical evaluations and analysis of control variables, ensuring accurate measurement and understanding of relationships between variables. These strategies enhanced the study's credibility, enabling robust conclusions about the connection between participation in wellness programs and HRQoL among health care professionals.

### **Ethical Procedures**

The study adhered to ethical guidelines and institutional protocols, ensuring participant protection and data security throughout the research process. Before participant recruitment, data collection, or accessing datasets began, Walden University's Institutional Review Board (IRB) approved the process, and the approval number is 04-

01-25-1104549. Once approved, ethical considerations were addressed to protect participants. SurveyMonkey assisted in participant recruitment by recruiting individuals in their global panel with existing SurveyMonkey accounts who qualified as health care workers at organizations with employee wellness programs (SurveyMonkey Inc., 2024). Participants received an email from SurveyMonkey with a direct survey link, and participation was voluntary. The survey included informed consent on the first page, with participants confirming their eligibility before proceeding. Participants could exit the survey at any time, and their data was not recorded if they did so. Results remained anonymous and confidential. Participants were informed that all the data was stored on a password-protected laptop, and SurveyMonkey's AES 256-based encryption method ensured data security in all data centers (SurveyMonkey Inc., 2024). The participants were informed that the data would be downloaded from SurveyMonkey and deleted five years after completion of the study. This study ensured participant protection and data integrity by obtaining IRB approval and implementing robust ethical and security measures. Voluntary participation, informed consent, and anonymity safeguarded participants' rights, while encryption and secure storage protected data confidentiality.

### **Summary**

This quantitative research explored how perceived benefits and barriers to participation in wellness programs affect participation frequency and how that frequency, along with job category and work shift, impacts health care workers' HRQoL. Chapter 3 presented the cross-sectional survey design used, detailing the application of stepwise multiple linear regression and descriptive statistics derived from the online surveys. This

chapter also covered the study population, sample size, sampling procedures, and the variables being analyzed. Chapter 4 outlines the data collection methods and the statistical analysis results, addressing the research questions posed in the present study.

## Chapter 4: Results

### Introduction

The purpose of this observational, cross-sectional, quantitative study was to (a) explore the perceived benefits and barriers to participation in employee wellness programs and (b) examine the links among participation frequency, HRQoL, work shifts, job category, and demographic variables like age, sex, and race/ethnicity. The following research questions and hypotheses guided this research study:

RQ1: Do perceived barriers and perceived benefits to participating in employee wellness programs predict the frequency of participation in employee wellness programs while controlling for age, sex, and race/ethnicity?

*H<sub>0</sub>1*: The perceived barriers and perceived benefits to participating in employee wellness programs do not predict the frequency of participation in employee wellness programs among health care workers while controlling for age, sex, and race/ethnicity.

*H<sub>a</sub>1*: The perceived barriers and perceived benefits to participating in employee wellness programs predict the frequency of participation in employee wellness programs among health care workers while controlling for age, sex, and race/ethnicity.

RQ2: Does the frequency of participation in employee wellness programs, job category, and work shift predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity?

*H<sub>0</sub>2*: The frequency of participation in employee wellness programs, job category, and work shift do not predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity.

*H<sub>a</sub>2*: The frequency of participation in employee wellness programs, job category, and work shift predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity.

This chapter addresses the data collection and analysis processes. Frequency and percentages are presented for demographic characteristics and variables, including recruitment and response rates. Bivariate analysis, along with the statistical assumptions relevant to the analysis, is followed by specific findings related to the study, including a report on the results of the data analysis.

### **Data Collection**

Data was collected over two days (April 2nd and April 3rd, 2025). Study participants were recruited from the SurveyMonkey online participant panel based on the inclusion criteria requiring them to be health care workers with an employer-sponsored wellness program. An invitation email was sent to health care workers containing an active link for easy access to the survey hosted on SurveyMonkey. The survey began with a consent form explaining the study's purpose, a description of procedures, the voluntary nature of participation, risks and benefits, privacy, and contact information. The survey was anonymous; no identifying information was collected to ensure participant confidentiality. As outlined in Chapter 3, the necessary sample size for this study was calculated to be 170, but it was increased to 200 for data collection. SurveyMonkey

verified that 200 participants completed the survey. I verified that all questions were answered upon entering all the data and before starting the analysis process.

It was hypothesized that perceived barriers and benefits to participation would affect the frequency of participation in employee wellness programs. Consequently, job category, work shift, and participation frequency were expected to influence HRQoL. While multiple linear regression was initially intended for assessing these relationships, a stepwise approach was employed to identify significant predictors for each model. This strategy excluded non-significant variables while retaining the most statistically relevant predictors, leading to clearer and more accurate models.

### **Descriptive Statistics**

Descriptive statistics were used to summarize the demographics and general characteristics of the participants. The analysis included the percentages and frequencies of each variable. SPSS v30 was used to analyze the data collected from the participants. I used a non-probabilistic, convenience sample for this study. The sample of 200 health care workers who work at a health care organization that offers an employee wellness program can be assumed to be representative of the population, as roughly 62% of health care organizations offer these programs (CDC, 2018). Table 3 presents demographic information about the study sample, which was primarily female (78%).

**Table 3***Demographic Variables*

Variable	n	%
<b>Race/ethnicity</b>		
American Indian or Alaska Native	0	0.0
Asian	7	3.5
Black or African American	56	28.0
Hispanic or Latino	27	13.5
Native Hawaiian or Other Pacific Islander	0	0.0
White	110	55.0
Declined to answer	0	0.0
<b>Age</b>		
18-24	9	4.5
25-34	30	15.0
35-44	66	33.0
45-54	65	32.5
55-64	30	15.0
65+	0	0.0
<b>Sex</b>		
Male	44	22.0
Female	156	78.0
<b>Job category</b>		
Registered nurse	94	47.0
Nursing assistant	46	23.0
Physician	6	3.0
Medical assistant	34	17.0
Pharmacist/pharmacy technician/pharmacologist	0	0.0
Physical therapist	4	2.0
Nurse practitioner	5	2.5
Medical records	0	0.0
Physician assistant	11	5.5
Occupational therapist	0	0.0
Rehabilitation therapist	0	0.0
Environmental services technician	0	0.0
Building maintenance	0	0.0
Support staff	0	0.0
Hospital leadership	0	0.0
Corporate	0	0.0
Other	0	0.0
<b>Work shift</b>		
First shift	149	74.5
Second shift	37	18.5
Third shift	14	7.0

*Note.*  $N = 200$

As seen in Table 4, participants strongly agreed that employee wellness programs have the most benefits in improving their health (35%) and reducing the risk of serious diseases (30%). A significant number also strongly agreed that these programs help them feel better about themselves (29%) and become stronger (27.5%). The least popular benefit was “having fun,” but 34% of participants agreed strongly. Overall, the responses show that participants view wellness programs as beneficial for their health and well-being.

**Table 4**

*Perceived Benefits of Employee Wellness Programs*

Benefit of employee wellness programs	Strongly disagree		Somewhat disagree		Neutral		Somewhat agree		Strongly agree	
	n	%	n	%	n	%	n	%	n	%
Improve my health	0	0	61	32.5	6	3	63	31.5	70	35
Reduce my risk for serious diseases	2	1	56	28	12	6	70	35	60	30
Feel better about myself	0	0	61	30.5	8	4	73	36.5	58	29
Become stronger	0	0	64	32	2	1	79	39.5	55	27.5
Have fun	3	1.5	58	29	8	4	63	31.5	68	34
Total	200		200		200		200		200	

*Note.*  $N = 200$

Table 5 shows the perceived barriers to participation. The most mentioned barrier was a lack of time, with 24.5% somewhat agreeing and 3.5% strongly agreeing. However, over half (55%) strongly disagreed, suggesting time might be a barrier for some but not most. Similarly, while 23% somewhat agreed that lack of energy was a

barrier, 42% strongly disagreed. The least endorsed barriers were financial cost (only 4% strongly agreed), being inactive, and lack of knowledge about what to do, indicating these were not seen as major obstacles by most participants. These findings suggest that while some barriers exist, especially time and energy, they are not experienced uniformly across the sample.

**Table 5**

*Perceived Barriers of Employee Wellness Programs*

Variable	Strongly disagree		Somewhat disagree		Neutral		Somewhat agree		Strongly agree	
	n	%	n	%	n	%	n	%	n	%
Don't have any time	110	55	22	11	12	6	49	24.5	7	3.5
Don't have any energy	84	42	42	21	23	11.5	46	23	5	2.5
Don't have any money	67	33.5	53	26.5	37	18.5	35	17.5	8	4
Not active	76	38	36	18	49	24.5	35	17.5	4	2
Don't know what to do	88	44	30	15	25	12.5	52	26	5	2.5
Total	200		200		200		200		200	

*Note.*  $N = 200$

To identify relationships among the model variables, I utilized Pearson's correlation analysis. This analysis indicated a strong positive correlation between employee wellness visits and perceived benefits ( $r = .86, p < .001$ ), while revealing a strong negative correlation with perceived barriers ( $r = -.87, p < .001$ ). Moreover, perceived benefits and barriers were negatively correlated ( $r = -.99, p < .001$ ), as illustrated in Table 6. Initially, this study evaluated perceived benefits and barriers

separately through composite scores. However, given the risk of multicollinearity due to their high correlation, I calculated a benefit-to-barrier ratio (benrat) score by dividing the total perceived benefits by the total perceived barriers. This ratio reflects the relative strength of benefits compared to barriers, with higher scores indicating that respondents perceive more benefits than barriers to participation.

**Table 6**

*Correlation for RQ1 Variables Included in the Measurement Model*

Variable		1	2	3	4	5	6
1. Age	Pearson correlation	1	.03	-.07	-.01	-.04	.03
	sig (2 tailed)		.70	.36	.90	.62	.66
2. Sex	Pearson correlation	.03	1	-.12	-.10	-.11	.11
	sig (2 tailed)	.70		.13	.17	.12	.12
3. Race	Pearson correlation	-.07	-.12	1	-.12	-.10	.09
	sig (2 tailed)	.36	.13		.10	.17	.23
4. Employee wellness visits	Pearson correlation	-.01	-.10	-.12	1	.86	-.87
	sig (2 tailed)	.85	.17	.10		< .001*	< .001
5. Perceived benefits	Pearson correlation	-.04	-.11	-.01	.86	1	-.99
	sig (2 tailed)	.62	.12	.17	< .001*		< .001
6. Perceived barriers	Pearson correlation	.03	.11	.09	-.87	-.99	1
	sig (2 tailed)	.66	.12	.23	< .001*	< .001*	

Note. N = 200.

\* $p < .05$ .

This composite ratio score is not only statistically sound, as noted above, but also theoretically grounded. According to the HBM, individuals' choices to engage in health-enhancing behaviors, such as joining employee wellness programs, are shaped by their

perceptions of the benefits of taking action and the barriers that may hinder it. When individuals perceive more benefits relative to barriers, they are more inclined to adopt the behavior (Champion & Skinner, 2008). Utilizing a ratio score aligns with previous HBM applications, highlighting the significance of balancing benefits and barriers in predicting health-related behaviors. This strategy enabled the use of a theoretically sound and statistically valid variable as a predictor in a stepwise model evaluating employee wellness program participation.

### **Results**

This section presents the study's findings, beginning with descriptive statistics that summarize the characteristics of the sample. These tables establish the context for the subsequent inferential analyses addressing the research questions. Table 7 includes the descriptive statistics for the dependent variables: unhealthy days and employee wellness visits. The number of employee wellness visits ranged from 0 to 20, with a mean of 15.13 (SD = 6.73). The number of unhealthy days ranged from 0 to 38, with a mean of 13.22 (SD = 11.95).

**Table 7***Descriptives of Dependent Variables*

Variable	Range	<i>M</i>	<i>SD</i>
Employee wellness visits	0-20	15.13	6.73
Unhealthy days	0-38	13.22	11.95

*Note.*  $N = 200$

Participants reported an average of 6.60 days of poor physical health ( $SD = 6.25$ ) and 6.61 days of poor mental health ( $SD = 6.18$ ) in the past 30 days. Additionally, they experienced an average of 2.51 days of activity limitations ( $SD = 2.75$ ), suggesting moderate health-related disruption in daily life. Engagement with employee wellness programs was relatively high, with an average of 15.13 visits ( $SD = 6.73$ ) reported over the measured period.

Participants strongly endorsed the benefits of wellness programs. They showed the highest levels of agreement with statements such as “Wellness programs help me improve my health” ( $M = 3.71$ ,  $SD = 1.23$ ), “reduce my risk for serious illness” ( $M = 3.65$ ,  $SD = 1.21$ ), and “make me feel better about myself” ( $M = 3.64$ ,  $SD = 1.19$ ). These ratings indicate that participants perceive these programs positively impacting their physical and emotional well-being.

In contrast, reported barriers to participation were relatively low. The most endorsed barrier was a lack of time ( $M = 2.11$ ,  $SD = 1.38$ ), followed by lack of energy ( $M = 2.23$ ,  $SD = 1.28$ ) and lack of money ( $M = 2.32$ ,  $SD = 1.22$ ). Ratings for feeling inactive ( $M = 2.28$ ,  $SD = 1.20$ ) and not knowing what to do ( $M = 2.28$ ,  $SD = 1.33$ ) were similarly

modest. These findings suggest that although barriers exist, they may not be as substantial as the perceived benefits, aligning with the study's regression findings that the benefit-to-barrier ratio was a strong predictor of participation.

Because two separate stepwise multiple linear regression analyses were conducted, each with distinct dependent variables and sets of predictors, it was necessary to evaluate the assumptions of linear regression for each model independently. Although both analyses followed the same statistical method, the nature of the outcome variables and the predictors differed, requiring separate checks to ensure the validity and accuracy of each model. Stepwise regression introduces or removes predictors based on their statistical contribution, which may vary across models; assumptions related to linearity, normality of residuals, homoscedasticity, multicollinearity, and independence of errors were assessed separately. This approach ensured that the assumptions were adequately met for both models and that the findings could be interpreted confidently.

Stepwise multiple linear regression was conducted to examine the 1) predictive relationship among perceived barriers and benefits to participation towards the frequency of participation using the PBBPAS and 2) the predictive relationship among the frequency of participation, work shift, and job category towards the HRQoL using the HRQoL-14 scale. Composite scores were generated from both instruments. Perceived barriers and benefits were computed by summing the scores from Questions 23-27, where a higher score indicates greater benefits. Conversely, the barrier scale reverse scores questions 28-32. These scores were then combined into a benefit-to-barrier ratio (benrat). To determine the HRQoL score, I concentrated on the unhealthy days for each

participant, totaling both physically and mentally unhealthy days. This total is referred to as unhealthy days.

The results are organized by research question, starting with predictors of program participation (RQ1) and then the relationship between participation and HRQoL (RQ2).

### **Research Question 1 – Frequency of Participation in Wellness Programs**

RQ1: Do perceived barriers and perceived benefits to participating in employee wellness programs predict the frequency of participation in employee wellness programs while controlling for age, sex, and race/ethnicity?

*H<sub>0</sub>1*: The perceived barriers and perceived benefits to participating in employee wellness programs do not predict the frequency of participation in employee wellness programs among health care workers while controlling for age, sex, and race/ethnicity.

*H<sub>a</sub>1*: The perceived barriers and perceived benefits to participating in employee wellness programs predict the frequency of participation in employee wellness programs among health care workers while controlling for age, sex, and race/ethnicity.

Stepwise multiple linear regression analysis was used to examine the relationship between the dependent variable, the frequency of employee wellness visits, and the independent variables, perceived benefits and perceived barriers to employee wellness visits, after controlling for the influence of age, sex, and race/ethnicity. As previously mentioned, the perceived barriers and benefits were compiled into a composite score,

benrat. Bivariate correlations showed a strong positive relationship between benrat and wellness visits,  $r(198) = .86, p < .001$ , while age, sex, and race were not significantly correlated (all  $p > .05$ ).

### **Statistical Assumptions**

Preliminary analyses were performed to evaluate outliers, normality, linearity, multicollinearity, homoscedasticity, and the independence of residuals (Laerd Statistics, 2018). Testing these assumptions helped identify violations and ensured the regression model accurately fits the data. A proper model fit indicates that the independent variables can account for variations in the dependent variable and validates the hypothesis prediction (Laerd Statistics, 2018).

#### **Assumptions 1 and 2**

Assumptions 1 and 2 were met as the dependent variable was measured on a continuous scale and the independent variables were measured on a categorical scale (Laerd Statistics, 2018).

#### **Assumption 3**

Assumption 3 states that independent observations are measured using the Durbin-Watson statistic (Laerd Statistics, 2018). The Durbin-Watson statistic was 2.06, close to the ideal value of 2. This indicates no significant autocorrelation in the residuals and supports the independence assumption.

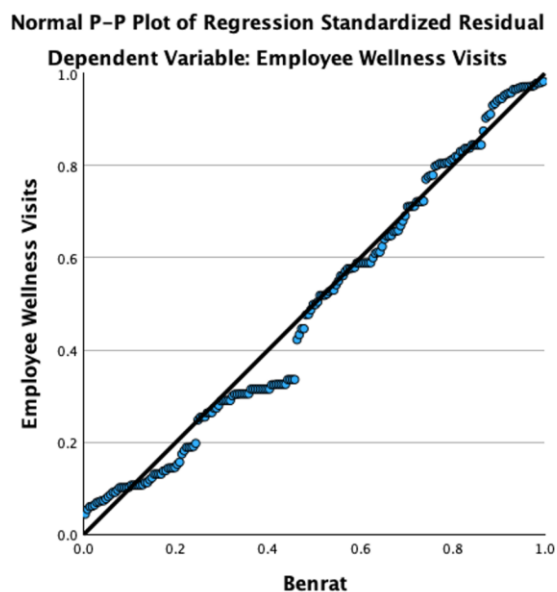
#### **Assumptions 4 and 5**

Assumption 4 confirms a linear relationship between the dependent and independent variables (Laerd Statistics, 2018). Figure 3 was visually examined to assess

this and showed no violations of the assumption of linearity. Assumption 5, testing for homoscedasticity, was done to determine the error variance. This is done by visually assessing the variances along the line of best fit, as shown in Figure 3.

### Figure 3

*Normal P-P Scatterplot to Assess Assumptions*



### Assumption 6

Assumption 6 included identifying whether multicollinearity exists between the independent variables (Laerd Statistics, 2018). This can be done using the VIF. Values for all the predictors were close to 1 (ranging from 1.00 to 1.01), well below the threshold of 10, confirming that the assumption was met and there is no multicollinearity.

### Assumption 7

Assumption 7 involved checking for unusual outliers (Laerd Statistics, 2018).

Figure 4 shows a rough bell curve, the histogram of standardized residuals,

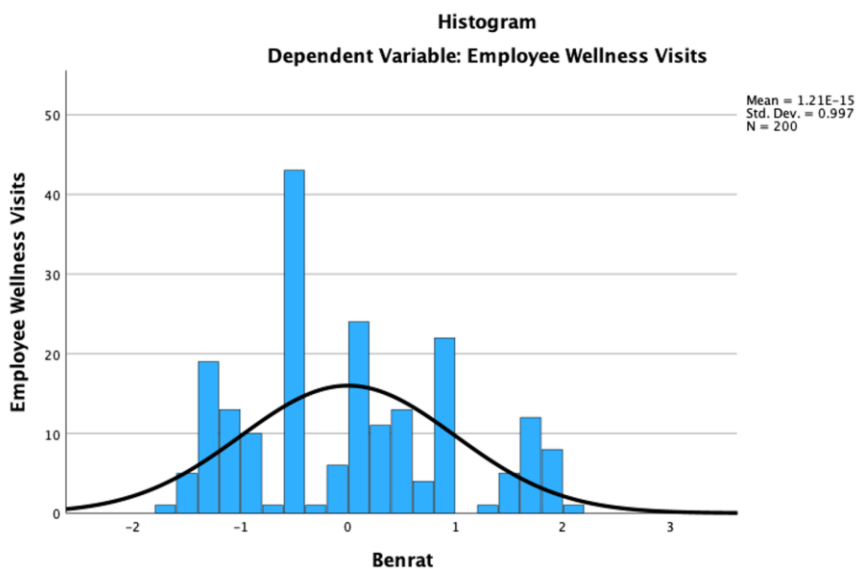
approximately following a normal distribution (Mean = 1.45E-15, SD = 0.99). The data from the histogram indicated that the data appears to align with a normal distribution.

### Assumption 8

Assumption 8 was explored for the normal distribution of the residuals. Figure 4 was visually examined for normal distribution between the observed values and predicted values.

**Figure 4**

*Histogram of Residuals*



### Statistical Analysis Findings

Stepwise multiple linear regression was used to examine whether the perceived barriers and benefits ratio (benrat) predicted the frequency of employee wellness visits. In the regression analysis, two models were tested. Model 1 included only benrat and accounted for a substantial proportion of the variance in wellness visits,  $R^2 = .75$ ,  $F(1, 198) = 585.68$ ,  $p < .001$ . Model 2 added the control variables (age, sex, and race).

However, the increase in explained variance was negligible,  $R^2 = .75$ ,  $F(4, 195) = 145.40$ ,  $p < .001$ , with an adjusted  $R^2$  remaining at .74. Based on the statistical criteria, the control variables did not significantly enhance the model and were excluded from the final stepwise model.

**Table 8**

*ANOVA of Participation Frequency*

Model	Sum of squares	df	F	Sig.
1				
Regression	6742.47	1	585.68	<.001 <sup>b</sup>
Residual	2279.40	198		
Total	9021.88	199		
2				
Regression	6756.56	4	145.40	<.001 <sup>c</sup>
Residual	2265.32	195		
Total	9021.88	199		

*Note.* The dependent variable was employee wellness visits.  $N = 200$ .

<sup>b</sup> The predictors (constant) were benrat, age, race, and sex.

The final stepwise regression model was statistically significant, as confirmed by the ANOVA in Table 8,  $p < .001$ . Among the variables entered, benrat, age, sex, and race, only benrat emerged as a significant predictor of employee wellness program participation. Specifically, benrat was strongly associated with participation frequency,  $B = 3.10$ ,  $\beta = .86$ ,  $t = 24.20$ ,  $p < .001$ , indicating that a one-unit increase in benrat corresponds to an estimated 3.10-unit increase in participation. The significant, standardized coefficient ( $\beta = .86$ ) further highlights benrat as the strongest predictor in the model, while the control variables did not contribute significantly.

**Table 9***Coefficients Table of Participation Frequency*

Model		Unstandardized coefficients		Standardized coefficients		
		<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>Sig.</i>
1	(Constant)	5.25	.47		11.08	
	Benrat	3.12	.13	.86	24.20	
2	(Constant)	5.93	1.80		3.31	.00
	Age	.10	.26	.01	.38	.70
	Sex	-.12	.59	-.01	-.18	.86
	Race	-.17	.17	-.04	-1.00	.32
	Benrat	3.10	.13	.86	23.69	<.001

*Note.* The dependent variable was the number of employee wellness visits.  $N = 200$ .

Based on the stepwise regression analysis, the null hypothesis that perceived benefits and barriers do not predict the frequency of employee wellness visits can be rejected. The analysis showed that the benefits-to-barriers ratio significantly predicted participation frequency. Although age, sex, and race were included in the model as control variables, they did not contribute significantly to the prediction.

**Research Question 2 – HRQoL**

RQ2: Does the frequency of participation in employee wellness programs, job category, and work shift predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity?

$H_{02}$ : The frequency of participation in employee wellness programs, job category, and work shift do not predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity.

*H<sub>a2</sub>*: The frequency of participation in employee wellness programs, job category, and work shift predict the HRQoL among health care workers while controlling for age, sex, and race/ethnicity.

Stepwise multiple linear regression analysis was used to examine the relationship between the dependent variable, HRQoL, and the independent variables, the frequency of wellness visits, job category, and work shift, after controlling for the influence of age, sex, and race/ethnicity. Bivariate correlations revealed that employee wellness visits were strongly negatively correlated with unhealthy days,  $r(197) = -.85, p < .001$ , while job category showed a moderate negative correlation,  $r(197) = -.24, p < .001$ . There were no significant correlations between the control variables (age, sex, and race) and unhealthy days (all  $p > .05$ ), indicating weak relationships at the individual level. I included these control variables in the stepwise procedure to account for potential confounding effects and see if they improved the model's fit.

### **Statistical Assumptions**

Preliminary analyses were performed to evaluate outliers, normality, linearity, multicollinearity, homoscedasticity, and the independence of residuals (Laerd Statistics, 2018). Testing these assumptions helped identify violations and ensured the regression model accurately fits the data. A proper model fit indicates that the independent variables can account for variations in the dependent variable and validates the hypothesis prediction (Laerd Statistics, 2018).

**Assumptions 1 and 2**

Assumptions 1 and 2 were met as the dependent variable was measured on a continuous scale and the independent variables were measured on a categorical scale (Laerd Statistics, 2018).

**Assumption 3**

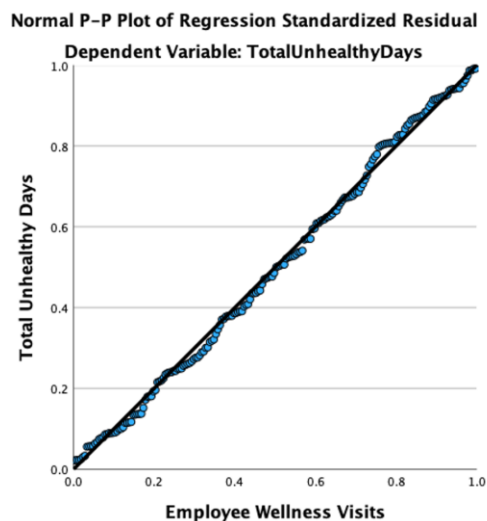
Assumption 3 states that independent observations are evaluated through the Durbin-Watson statistic (Laerd Statistics, 2018). The Durbin-Watson statistic measured at 1.88, near the ideal value of 2. This result suggests no significant autocorrelation in the residuals, thus reinforcing the assumption of independence.

**Assumptions 4 and 5**

Assumption 4 confirms a linear relationship between the dependent and independent variables (Laerd Statistics, 2018). Figure 6 was visually examined to assess this and showed no violations of the assumption of linearity. Assumption 5, testing for homoscedasticity, was done to determine the error variance. This is done by visually assessing the variances along the line of best fit, as shown in Figure 6.

## Figure 5

*Normal P-P Scatterplot to Assess Assumptions*



## Assumption 6

Assumption 6 included identifying whether multicollinearity exists between the independent variables (Laerd Statistics, 2018). This can be done using the VIF. Values for all the predictors were close to 1 (ranging from 1.01 to 1.04), well below the threshold of 10, confirming that the assumption was met and there is no multicollinearity.

## Assumption 7

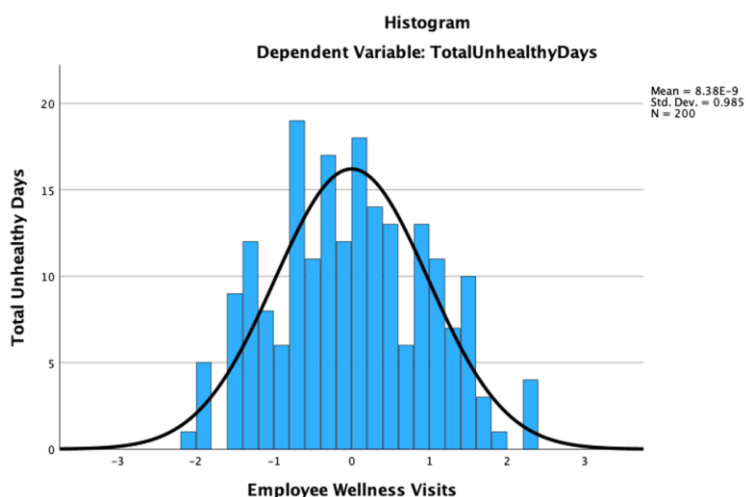
Assumption 7 involved checking for unusual outliers (Laerd Statistics, 2018). This scatterplot compares the observed and expected values, and an approximately straight line suggests that the distribution is normally distributed. The histogram of standardized residuals, Figure 7, shows a roughly normal distribution centered around zero (Mean =  $-1.47E-15$ , SD = 0.99). Data from the residuals and histogram indicate that the data appears to align with a normal distribution.

## Assumption 8

Assumption 8 was explored for the normal distribution of the residuals. Figure 7 was visually examined for normal distribution between the observed values and predicted values.

## Figure 6

### *Histogram of Residuals*



## Statistical Analysis Findings

Multiple linear regression was used in a stepwise approach to predict the total number of unhealthy days based on employee wellness visit frequency, job category, work shift, and control variables (age, sex, and race). The ANOVA results (Table 10) confirm that the final model was statistically significant, with a  $p$  value of less than .001, indicating it explained a significant portion of the variance in unhealthy days. Although all predictors were initially included, only wellness visits and job category remained significant predictors. The first step of the model included only employee wellness visits, which explained a substantial amount of variance in unhealthy days, with an  $R^2$  value of

.72 and a  $p$  value of less than .001. Adding job category in the second step resulted in a slight but significant increase in explained variance, with an  $R^2$  value of .74 and a  $p$  value of less than .001, and an adjusted  $R^2$  increase from .72 to .73. The final step included the control variables (age, sex, and race). However, they did not significantly improve the model, as the adjusted  $R^2$  remained at .73.

**Table 10**

*ANOVA of HRQoL*

Model	Sum of squares	df	$F$	$Sig.$
1				
Regression	20418.90	1	516.29	<.001 <sup>b</sup>
Residual	7791.16	197		
Total	28210.06	198		
2				
Regression	20754.16	2	272.79	<.001 <sup>c</sup>
Residual	7455.90	196		
Total	28210.06	198		
3				
Regression	20773.26	5	107.82	<.001 <sup>d</sup>
Residual	7436.80	193		
Total	28210.06	198		

*Note.* The dependent variable was unhealthy days.  $N = 200$ .

<sup>b</sup> The predictors (constant) were employee wellness visits.

<sup>c</sup> The predictors (constant) were employee wellness visits and job category.

<sup>d</sup> The predictors (constant) were employee wellness visits, job category, age, sex, and race.

The coefficients table, Table 11, presents the final stepwise regression results. Employee wellness visits were a statistically significant predictor of fewer unhealthy days,  $B = -1.48$ ,  $\beta = -.83$ ,  $t = -22.04$ ,  $p < .001$ . This indicates that each additional

wellness visit was associated with approximately 1.48 fewer unhealthy days, holding other variables constant. The standardized coefficient ( $\beta = -.83$ ) confirms that wellness visits were the strongest predictor in the model. Job category also remained a significant but weaker predictor,  $B = .51$ ,  $\beta = .11$ ,  $t = 2.93$ ,  $p = .004$ , suggesting that specific job roles may be linked to slightly more unhealthy days. None of the other variables, work shift, age, sex, or race, were statistically significant predictors in the final model.

**Table 11**

*Coefficients Table for HRQoL*

Model		Unstandardized coefficients		Standardized coefficients		
		<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>Sig.</i>
1	(Constant)	36.10	1.11		32.69	<.001
	Employee wellness visits	-1.51	.07	-.85	-22.72	<.001
2	(Constant)	34.19	1.26		27.12	<.001
	Employee wellness visits	-1.48	.07	-.83	-22.41	<.001
	Job	.51	.17	.11	2.97	.003
1	(Constant)	34.19	3.40		10.04	<.001
	Age	.03	.47	.00	.07	.95
	Sex	.40	1.08	.01	.38	.71
	Race	-.17	.31	-.02	-.53	.60
	Job category	.51	.18	.11	2.93	.00
	Employee wellness visits	-1.48	.07	-.84	-22.04	<.001

*Note.* The dependent variable was unhealthy days.  $N = 200$ .

Based on the stepwise regression analysis, the null hypothesis that employee wellness visits, job category, and work shift do not predict HRQoL can be rejected,  $p <$

.001. However, only two predictors, employee wellness visits ( $B = -1.48, p < .001$ ) and job category ( $B = .51, p = .004$ ), showed statistically significant effects on unhealthy days. The other variables, work shift, age, sex, and race, did not demonstrate significant relationships (all  $p > .05$ ) and were excluded from the final model.

### **Summary**

Two stepwise multiple linear regression analyses were conducted to test the study hypotheses. Assumption testing indicated that all stepwise multiple linear regression conditions were satisfied. The dependent and independent variables were measured accurately, supporting the independence assumption. Visual inspections confirmed linearity, homoscedasticity, and the normality of residuals. There was no evidence of multicollinearity, and no significant outliers were identified. These results demonstrate that the data met the essential criteria for validating the regression outcomes.

Research Question 1 examined whether perceived barriers and benefits could predict employee wellness visits. When perceived barriers and benefits were calculated as a ratio score, a statistically significant result was found, rejecting the null hypothesis that perceived barriers and benefits would not significantly predict employee wellness visits. Research Question 2 aimed to determine whether employee wellness visits predict HRQoL for the study sample. In the regression model, employee wellness visits significantly predicted HRQoL (fewer unhealthy days), allowing for rejection of the null hypothesis.

Chapter 5 provides an interpretation of the study's findings and discuss its limitations. It will also include recommendations for future research, implications for positive social change, and the overarching message this research conveys.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

This study assessed the impact of workplace wellness programs on HRQoL, an area with limited existing research. The results indicated that the perceived barriers and benefits ratio score (benrat) significantly predicted wellness program participation frequency. Similarly, participation frequency was a significant predictor of HRQoL, with increased participation associated with fewer unhealthy days.

### **Interpretation of the Findings**

This study filled research gaps by examining how people's perceptions influence their engagement in wellness programs and how often participating affects their overall health and well-being. By building on existing research into health behavior models and work settings, this study helps create a complete understanding of what drives people to participate in wellness programs and the benefits. This section will dissect the interpretations through the lens of frequency of participation in wellness programs, HRQoL, and the theoretical and practical interpretations.

### **Frequency of Participation in Wellness Programs**

Research Question 1 showed that employees' consideration of wellness program benefits versus barriers had a bigger impact on their participation than factors like age, sex, or race. This result supported the idea that individual perception was a key driver of engagement, which matched previous studies that highlighted psychological and logistical hurdles, such as time constraints and scheduling issues, as significant barriers to participation (Linnan et al., 2008). Using a composite benefits-to-barriers ratio (benrat),

this study introduced a new way to measure these perceptions. This ratio-based variable combined two key concepts of the HBM, providing a more practical framework for identifying what motivated engagement. By integrating these concepts, this study builds on earlier research, which often looked at perceived benefits and barriers separately, allowing for a more detailed understanding of what drove motivation (Gabal et al., 2020).

These findings also aligned with the HBM, indicating that people were likelier to adopt health-promoting behaviors when they saw significant benefits and few obstacles. This connection was vital in high-pressure work environments, where daily challenges heightened perceived barriers unless countered by clear, immediate program benefits (Tran et al., 2020; Altman et al., 2023). The results suggested that practical tweaks, such as making programs more accessible or highlighting short-term benefits, were more effective in boosting participation than relying solely on demographic tailoring. The results also supported recent research showing that long-term engagement often depended less on individual characteristics and more on how well the program met employees' perceived needs and values (Marin-Farrona et al., 2023; Song & Baiker, 2021). This interpretation highlights the need for interventions that strategically changed perceptions, rather than implying that fixed personal traits mainly drove participation.

### **HRQoL**

For Research Question 2, I examined whether employee wellness visits, work shifts, and job categories could predict HRQoL, after accounting for age, sex, and race. The model demonstrated strong explanatory power, indicating that wellness engagement and job category significantly impacted HRQoL. These findings supported the argument

that organizational wellness efforts should be tailored to specific job roles, especially for employees at higher risk of mental and physical strain (Tamene et al., 2024; Wu et al., 2011). For example, employees in frontline roles, such as nurses or nursing assistants, may have benefited more from wellness programs that were integrated into their shift schedules and prioritized physical and emotional recovery. This finding aligns with Sitlinger and Zafar's (2018) recommendations for incorporating HRQoL interventions into daily workplace operations. However, the unexplained variance in the model suggested that other factors, such as perceived workload, burnout, organizational support, or individual health status, may have also influenced HRQoL and deserved consideration in future research.

Further research on HRQoL tools, such as the HRQoL-14 survey, may confirm the significance of self-reported health experiences and assess the effectiveness of workplace wellness programs (Romero et al., 2013). This study measured HRQoL inversely through the sum of self-reported unhealthy days, providing a concrete, employee-centered outcome metric (Karimi & Brazier, 2016). Longitudinal studies should be conducted to evaluate the long-term sustainability of observed benefits and determine if ongoing participation leads to lasting improvements in employee well-being.

From a theoretical perspective, these findings aligned with behavioral health models that emphasize the role of self-care and perceived control in influencing health outcomes. For example, Jorvand et al. (2018) found that self-efficacy was the strongest predictor of daily exercise. They also highlighted the potential cumulative benefits of ongoing wellness participation, including improved stress management, higher physical

activity levels, and greater social support at work. This was supported by evidence from Alman et al. (2023) and Marin-Farrona et al. (2023), who stressed that frequent participation enhanced both mental and physical aspects of HRQoL.

### **Theoretical and Practical Interpretations**

This research was guided by the HBM, which proposes that individuals are more likely to engage in health-promoting behaviors when they (a) perceive a personal threat of illness or stress, (b) believe in the benefits of taking action, and (c) perceive fewer barriers to doing so (Hayden, 2019). This study challenged the conventional view that all HBM constructs must be used as a framework to analyze participation in wellness programs among healthcare workers. I created a new compound ratio variable by breaking down the constructs and focusing on perceived barriers and benefits. Unlike previous research that mainly applied the HBM to clinical prevention, such as vaccination uptake and screening behaviors, this study expanded its use to workplace health promotion. The results showed that a positive ratio of perceived barriers to benefits significantly impacted participation, highlighting the importance of cognitive and emotional evaluations in non-clinical wellness decision-making. However, the minimal impact of demographic and structural variables suggests that the HBM may need to be adjusted or enhanced through integration with broader frameworks, such as the theory of planned behavior or social cognitive theory, to account for environmental and normative factors in organizational settings.

These findings also showed that organizations need policies that match wellness initiatives with the real challenges of healthcare work, such as unpredictable schedules,

heavy emotional demands, and little downtime. Tailoring programs to address job-specific needs, like mobile wellness options for nurses and mental health breaks for shift workers, could make them more accessible and relevant. Studies by Tran et al. (2020) and McKnight-Eily et al. (2020) supported the idea that targeted interventions can reduce disparities in HRQoL and boost resilience among healthcare personnel. By reducing obstacles and increasing perceived value, institutions can encourage higher participation in wellness programs and improve HRQoL, job satisfaction, and employee retention, ultimately benefiting both staff and the organization's overall performance. In doing so, healthcare systems invest in their workforce's well-being and improve patient care and institutional resilience.

### **Limitations of the Study**

This study has several limitations. First, using self-reported survey data introduces inherent accuracy and bias issues. The research utilized SurveyMonkey, inviting only those with an account to participate. Online surveys limit the researchers' capacity to identify, understand, and describe the population eligible to respond and to whom findings can be generalized (Andrade, 2020). Additionally, participants were asked to evaluate their HRQoL, their perceived benefits and barriers to engaging in wellness programs, and the frequency of their involvement. Voluntary participation in the survey may have led to self-selection bias, whereby individuals with strong opinions or experiences regarding wellness programs were more likely to respond, amplifying specific trends while underrepresenting more neutral or disengaged perspectives.

Furthermore, recall bias could affect participants' ability to accurately recount their past involvement in wellness programs, particularly if their participation was sporadic. Such biases can undermine the validity of the data and introduce errors in the observed relationships among variables. Although self-report instruments are convenient and commonly used in health research, it is essential to recognize the lack of objective validation (e.g., health records of wellness attendance and clinical health metrics) as a limitation.

This study utilized a cross-sectional design, capturing data at a single point in time. This approach enabled a statistically significant relationship between perceived barriers, perceived benefits, frequency of participation in wellness programs, and HRQoL. However, it is essential to note that while greater participation in wellness programs may enhance HRQoL, it is also possible that individuals with higher HRQoL are more inclined to participate in such programs. As a result, this design inherently limits the conclusions that can be drawn regarding causality or the direction of these relationships. Specifically, follow-up assessments or cohort tracking could determine whether changes in perceived barriers or benefits lead to subsequent changes in participation frequency, which may ultimately impact HRQoL outcomes. Furthermore, the variability in wellness program offerings across different settings can influence participation rates and perceived benefits, highlighting a need for tailored approaches in future research to address these differences effectively.

Another limitation lies in the diversity of employee wellness programs across health care organizations. Although the study assessed perceived barriers and benefits to

participation, it did not consider differences in the scope, quality, accessibility, or institutional support of the wellness programs available to the participants. Some health care workers may access robust, well-promoted programs with strong managerial support, while others may only have limited or poorly advertised resources. These discrepancies may influence how participants perceive the benefits, barriers, and value of engaging in wellness initiatives, directly affecting participation frequency and HRQoL. This variability may hinder the generalization of findings across different health care settings. Future studies should incorporate assessments of program characteristics or stratify responses based on institutional program quality to better contextualize individual-level data.

### **Recommendations**

To enhance the effectiveness of employee wellness programs, health care organizations may wish to go beyond merely tracking participation and instead focus on strategies that consider individual perceptions and quantifiable health outcomes. For over thirty years, employee wellness programs have supported employee retention and organizational health through initiatives centered on health education, nutrition, physical activity, and preventive screenings (Knippen et al., 2018; U.S. Office of Personnel Management, 2018). However, challenges in implementation continue to exist. Most wellness programs, about 62.3%, are overseen by health care professionals with primary clinical duties, such as nurses or doctors, who may perceive wellness promotion as an additional burden (CDC, 2017). This arrangement hampers the consistency and impact of these programs. In contrast, studies indicate that programs led by dedicated on-site

wellness managers who create, promote, and assess initiatives tend to produce superior results (Berry et al., 2020).

Organizations may wish to embrace a more comprehensive, person-focused approach to tackle wellness program participation in health care. This involves reducing structural obstacles with flexible scheduling and accessible programming and enhancing perceived benefits through clear communication, leadership support, and tailored messaging. Additionally, weaving wellness initiatives into wider organizational policies, like mental health resources, adaptable work environments, and stress-relief measures, can help ensure these programs are recognized as interconnected components of a broader strategy for employee well-being.

To more effectively evaluate changes over time and establish causal pathways between these variables, future research should adopt longitudinal or experimental designs to investigate the causal links between wellness engagement and health outcomes. Initial HRQoL data should be gathered to determine if wellness initiatives are effectively reaching those most in need or inadvertently marginalizing vulnerable groups. Furthermore, qualitative approaches reveal subtle barriers and facilitators to participation that surveys may overlook. Given the unexplained variance in participation and HRQoL outcomes, subsequent studies should examine psychosocial and environmental influences, such as organizational culture, supervisor support, and perceived stress, that could affect wellness behavior.

This study emphasizes the need to design Employee wellness programs that tackle both perceptual and structural obstacles to engagement. Evidence-based programs that

adapt to employee needs and prioritize individual motivation are more likely to enhance participation and health outcomes. Instead of solely concentrating on attendance metrics, organizations should integrate wellness initiatives with broader health objectives and employee experiences, thereby strengthening the role of wellness as a factor in organizational performance and staff well-being. To improve generalizability, future research should strive for broader recruitment across diverse health care environments and consider stratified sampling to ensure proportional representation of key subgroups.

### **Implications for Positive Social Change**

This study provides insights into the complex relationship between workplace wellness programs, employee participation, and health-related outcomes. The results highlight critical barriers to participation and opportunities for organizations seeking to improve the overall effectiveness of their wellness initiatives. Participants strongly endorsed benefits such as “wellness programs help me improve my health,” “reduce my risk for serious illness,” and “make me feel better about myself.” These findings carry implications for promoting positive social change, especially within health care organizations striving to support their workforce.

### **Organizational**

Healthcare organizations are in a great position to promote employee health by creating workplace cultures that prioritize wellness. The findings from this study can inform policy and practice, helping to shift the focus toward workplaces that support employee well-being. The strong connection between wellness participation and HRQoL seen in this study supports the idea that comprehensive wellness initiatives are essential

for building a healthy, sustainable workforce (Sitlinger & Zafar, 2018). Programs that combine health education, behavioral support, nutrition, physical activity, and mental health may lead to more equitable and lasting improvements in worker well-being.

One major hurdle, though, is how these programs are managed. Studies show that 62.3% of wellness initiatives are led by healthcare professionals, like nurses or doctors, who also have heavy clinical duties (CDC, 2017). This double burden can make it harder to deliver the program and limit its effect on the organization. On the other hand, wellness programs run by dedicated staff—such as those certified by CHES or mental health professionals—typically have higher engagement rates and a longer-lasting impact on workplace culture (Berry et al., 2020; CDC, 2018). These roles can also spark social change by promoting bigger changes in how organizations value and support their employees.

Establishing dedicated wellness departments can boost the consistency and visibility of employee wellness programs. These departments would act as central hubs for education, outreach, evaluation, and gathering feedback on wellness. When wellness is integrated into daily routines and supported by leadership, it helps build a culture of support. Smaller organizations may consider collaborative models, sharing resources to offer joint wellness programs across institutions. This cooperative approach could be a model for health systems looking to fairly expand access to wellness opportunities.

As time passes, these organizational changes can shape wider industry standards. New norms and best practices may emerge as more healthcare organizations adopt employee-centered wellness frameworks. This way, the study's findings add to the

ongoing discussions about workforce sustainability and institutional accountability.

Programs that enhance HRQoL for staff can potentially reduce turnover, boost morale, and improve care delivery—each of which supports the mission of healthcare as a social good.

### **Individual**

Boosting the HRQoL of healthcare workers through wellness programs significantly affects individuals and their surroundings. This includes better physical and emotional well-being and increased resilience in high-pressure situations. Although this study found a surprising negative connection between perceived benefits and participation, this result may be due to contextual or interpretive issues, such as unclear program relevance, rather than a fundamental flaw in wellness initiatives. The HBM suggests that participation hinges on individuals' risk, benefit, and feasibility assessments. Well-designed education programs can alter these perceptions and help individuals better understand the personal value of participating (Ostovarfat et al., 2021).

For individuals, eliminating or reducing obstacles like time, energy, or access can boost participation rates and results. Flexible schedules, wellness breaks, or on-site services can help ease competing demands. Teaching that shows clear, short-term benefits (e.g., better sleep, more energy, less stress) can also help make wellness seem practical and achievable. These strategies support personal behavior change and help create a more inclusive workplace where wellness is within reach for all staff.

What is more, social modeling among coworkers can encourage participation. Seeing peers benefit from wellness programs through less stress or better health can

change workplace norms and reinforce shared wellness values. Over time, individual engagement can help create a collective sense of purpose and build environments where staff support each other's health. These dynamics lead to a workplace climate where wellness is seen as an expected and supported behavior, rather than just a personal responsibility or optional benefit. Organizations can help individuals adopt sustainable wellness habits by addressing personal barriers and motivations. These actions benefit the individual and contribute to a healthier and more stable workforce, offering a path to positive social change through improved well-being and reduced occupational burnout in healthcare settings.

### **Methodological Implications**

This study provides several methodological insights for future research on employee wellness programs and HRQoL. First, the cross-sectional design restricts the ability to infer causality between the frequency of participation and HRQoL outcomes. Although significant associations were observed, such as the notable negative correlation between wellness participation and unhealthy days, future research should incorporate longitudinal or experimental designs to identify causal relationships more accurately. Secondly, the dependence on self-reported data raises the possibility of response bias, particularly due to social desirability effects, which could exaggerate reported participation or minimize the reporting of health issues. To enhance the validity of future findings, it would be beneficial to include objective measures like biometric screenings or attendance records.

Additionally, this study utilized a ratio variable to assess the relationship between perceived benefits and barriers (benrat), which emerged as a strong predictor of engagement. This implication is groundbreaking for current literature, as this ratio variable has not been used thus far. This methodological strategy underscores the importance of integrating multiple perceptual variables into a single metric, leading to a deeper understanding of motivational factors. However, future investigations may also consider latent variable modeling or structural equation modeling to mitigate measurement error and explore more intricate mediational relationships among psychosocial predictors, participation behaviors, and HRQoL outcomes. In summary, this research establishes a groundwork for more comprehensive, multi-method studies that can more effectively isolate the connections between wellness program design, individual perceptions, and employee health outcomes.

### **Theoretical Implications**

This study also contributes to theoretical understanding by showing how factors beyond individual beliefs, such as the organization's context, culture, and perceived feasibility, influence workplace wellness engagement. While the HBM provided a helpful framework, combining constructs like benefits and barriers into a single ratio (benrat) may give a more accurate picture of real-world decision-making. The limited impact of demographics also suggests that models based on perceptions and social learning may be more relevant than those focused solely on individual characteristics.

Social cognitive theory and organizational psychology frameworks could make future models more explanatory. For instance, concepts like self-efficacy, environmental

cues, and normative beliefs might help capture the factors influencing wellness participation in professional settings. By refining and expanding these theoretical models, researchers can produce more practical insights that guide policy and practice, ultimately supporting efforts to improve health outcomes and drive social change within healthcare organizations.

### **Conclusion**

This research enhances our understanding of the factors motivating participation in workplace wellness programs and the effect of such involvement on employee health, particularly in the demanding realm of health care. Central to these insights is a straightforward yet impactful revelation: employees are significantly more inclined to participate in wellness initiatives when they recognize that the advantages surpass the obstacles. This perceived value, not influenced by age, job classification, or work schedule, determines who engages and, consequently, who benefits from improved health outcomes.

The potential impact of this study and the connection to HRQoL for health care workers due to visiting employee wellness programs is significant. Although many wellness programs follow generic models, this study demonstrates that approaches tailored to individuals' perceptions are much more effective in tackling the specific stressors health care professionals face. The notable connection between participation and enhanced health outcomes, especially reducing unhealthy days, indicates that wellness initiatives customized for health care environments can be crucial in fighting burnout and fostering resilience. These results encourage a shift in the narrative, positioning wellness

programs as essential to protecting frontline health beyond financial savings and productivity increases.

Organizations should envision wellness as a benefit and element woven into the fabric of workplace culture. Programs should be accessible, meaningful, and resonate with employee perceptions to achieve genuine success. Moving forward, research may expand on this study's innovative use of the benefits-to-barrier ratio as a key metric, employing longitudinal methods to examine what is effective and why. Ultimately, this research establishes a groundwork for wellness initiatives better crafted and human-anchored in the real experiences of the workforce they intend to support.

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## Appendix A: Survey

### Employee Wellness Participation and HRQoL

#### Welcome to My Survey

Thank you for participating in our survey. Your feedback is important. This survey will take approximately 4-6 minutes to complete.

Participant Consent / Study Info

1. Are you a healthcare worker, as defined below.

A variety of job categories including registered nurse, nursing assistant, physician, medical assistant, pharmacist, pharmacy technician, physical therapist, nurse practitioner, medical records, physician assistant, occupational therapist, rehabilitation therapist, environmental services technician, pharmacologist, building maintenance, support staff, hospital leadership, corporate.

Yes

No

2. My healthcare organization offers an employee wellness department/program for my voluntary participation. These programs may include but not limited to educational materials, activities, classes, screenings, services, environmental supports, or policies encouraging individuals to maintain good health (Centers for Disease Control and Prevention, 2018).

Yes

No

## Health-Related Quality of Life Scale

### Core Healthy Days Module

3. Would you say that in general your health is:

Excellent

Very good

Good

Fair

Poor

4. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?

None

Number of days:

5. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

None

Number of days:

6. During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

None

Number of days:

**Activity Limitations Module**

*These next questions are about physical, mental, or emotional problems or limitations you may have in your daily life.*

7. Are you LIMITED in any way in any activities because of any impairment or health problem?

Yes

No

8. What is the MAJOR impairment or health problem that limits your activities?

Arthritis/rheumatism

Back or neck problem

Fractures, bone/joint injury

Walking problem

Lung/breathing problem

Hearing problem

Eye/vision problem

Heart problem

Stroke problem

Hypertension/high blood pressure

Diabetes

Cancer

Depression/anxiety/emotional problem

Other impairment/problem

9. For HOW LONG have your activities been limited because of your major impairment or health problem?

Days

Weeks

Months

Years

10. Because of any impairment or health problem, do you need the help of other persons with your PERSONAL CARE needs, such as eating, bathing, dressing, or getting around the house?

Yes

No

11. Because of any impairment or health problem, do you need the help of other persons in handling your ROUTINE needs, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?

Yes

No

### Healthy Days Symptoms Module

12. During the past 30 days, for about how many days did PAIN make it hard for you to do your usual activities, such as self-care, work, or recreation?

None

Number of days:

13. During the past 30 days, for about how many days have you felt SAD, BLUE, or DEPRESSED?

None

Number of days:

14. During the past 30 days, for about how many days have you felt WORRIED, TENSE, or ANXIOUS?

None

Number of days:

15. During the past 30 days, for about how many days have you felt you did NOT get ENOUGH REST or SLEEP?

None

Number of days:

16. During the past 30 days, for about how many days have you felt VERY HEALTHY and FULL OF ENERGY?

None

Number of days:

## Employee Wellness Participation and HRQoL

### Demographic Questions

17. Age

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

18. Sex defined at birth

Male	Female
<input type="radio"/>	<input type="radio"/>

19. Race/ethnicity

American Indian or Alaska Native	Asian or Asian American	Black or African American	Hispanic or Latino	Middle Eastern or North African	Native Hawaiian or other Pacific Islander	White	Decline to answer
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. How many times did you participate in employee wellness opportunities in the past MONTH?

21. Which job category best describes your line of work?

22. Which work shift best aligns with your job?

- 1st - day shift (typically 9am-5pm)
- 2nd - afternoon shift (typically 5pm-1am)
- 3rd - night shift (typically 1am-9am)

## Employee Wellness Participation and HRQoL

### Perceived Benefits and Barriers Scale

This section is used to pair your demographic questions with your perceived benefits and barriers to participating in employee wellness programs.

#### Employee Wellness Participation

Report this section on the previous month's participation with employee wellness, if at all.

Questions about **perceived benefits** of participating in employee wellness programs.

23. Improve my health.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Reduce my risk for serious health problems.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. Feel better about myself.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Somewhat disagree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. Become stronger.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. Have fun.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questions about **perceived barriers** to participating in employee wellness programs.

28. Do not have time.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. Do not have the energy.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. Do not have enough money.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31. Am not good at being active.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. Do not know what to do.

Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Employee Wellness Participation and HRQoL

Thank you!

Thank you for your participation in this survey. Once your answers are submitted, you may exit this screen.

## Appendix B: HRQoL-14 Scoring

**Health-Related Quality of Life Scale**

*This survey accompanies a measure in the SPARQTools.org [Measuring Mobility toolkit](#), which provides practitioners curated instruments for assessing mobility from poverty and tools for selecting the most appropriate measures for their programs.*

**Age:** Adult

**Duration:** 3-5 minutes

**Reading Level:** < 6th grade (orally delivered) / 9th-12th grade (written survey) **Number of items:** 14

**Answer Format:** This survey uses multiple answer formats. Please see the scoring instructions below for more information.

**Scoring:**

The *Core Healthy Days Module* subscale contains Q1. The answer format for this question is: 1 = excellent; 2 = very good; 3 = good; 4 = fair; 5 = poor.

The *Core Healthy Days Module* subscale also contains Q2, Q3, and Q4. The answer format for these questions is: 1 = number of day (fill in the blank); 2 = none.

The *Activity Limitations Module* subscale contains Q5. The answer format for this question is: 1 = yes; 2 = no.

The *Activity Limitations Module* subscale also contains Q6. The answer format for this question is: 1 = arthritis/rheumatism; 2 = back or neck problem; 3 = fractures, bone/joint injury; 4 = walking problem; 5 = lung/breathing problem; 6 = hearing problem; 7 = eye/vision problem; 8 = heart problem; 9 = stroke problem; 10 = hypertension/high blood pressure; 11 = diabetes; 12 = cancer; 13 = depression/anxiety/emotional problem; 14 = other impairment/problem.

The *Activity Limitations Module* subscale also contains Q7. The answer format for this question is fill in the blank.

To calculate the unhealthy days score for each participant, sum the number of physically unhealthy and mentally unhealthy days. The maximum score is 30 unhealthy days, even if the number of unhealthy days totals more than 30. To calculate a healthy days score, subtract the number of unhealthy days from 30.

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