PROMOTING A HEALTHY WORKFORCE:

A LITERATURE REVIEW OF WORKPLACE WELLNESS PROGRAMS

A Thesis

by

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ABSTRACT

Recognizing the value of a healthy workforce, more and more organizations are implementing

wellness programs. Therefore, it is important for organizational leadership to understand what

wellness is and what contributes to wellness program effectiveness. This manuscript reviews

numerous articles across various disciplines including psychology, medicine, business, and

public health. Relevant journal articles, books, and technical reports were identified by searching

Google Scholar, EBSCOhost, and PsycINFO. Some of the key search terms used were

"wellness," "definition of wellness," "wellness dimensions," "worksite wellness program,"

"workplace wellness program," "health promotion program," "effectiveness of a worksite

wellness program," "worksite wellness program participation," and "wellness program

participation." Taking a holistic perspective, wellness is defined as a multidimensional construct

composed of the following eight dimensions: emotional, physical, social, intellectual, spiritual,

psychological, occupational/vocational, and financial. This review summarizes effectiveness of

the workplace wellness programs in three categories: emotional, physical, and comprehensive

programs. Additionally, variables that influence program participation which is a major

antecedent of program effectiveness are organized into three broad categories: individual,

organizational, and program characteristics. Suggestions for best practice are also provided.

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INTRODUCTION

A successful organization begins with the best available human talent (Chapman, Uggerslev, Carroll, Piasentin, & Jones, 2005). Organizations expend considerable resources (money, time, and effort) to select top performers in order to facilitate the best organizational outcomes (e.g., Barrick & Mount, 1991; Leisink & Steijn, 2008). However, even when employees are highly competent, the nature of the work and aspects of the work environment can have adverse effects on the employees (e.g., situational constraints; Peters & O'Connor, 1980). Therefore, it is essential to provide and maintain a supportive work environment to minimize the negative effects of work.

Adults spend the majority of the day working, therefore, implementing health-promoting programs in the workplace is an efficient way to help them conduct adequate physical activity to achieve health and wellbeing benefits (Conn et al., 2009). Additionally, convenience, peer support, formal and informal communication in the workplace, and a healthy workplace climate are other advantages of organizational wellness programs (Shephard, 1996).

Implementing a worksite wellness or health promotion program is believed to be one of the most effective ways to create a sustainable environment that promotes positive employee and organizational outcomes (e.g., Arena et al., 2013; Baicker, Cutler, & Song, 2010; Parks & Steelman, 2008). As a result, an increasing number of organizations have implemented wellness programs (Conrad, 1987). The purpose of this paper is to summarize the research literature on workplace wellness programs and to identify variables that contribute their effectiveness. First, employee wellness is defined followed by an explanation of why it is important to organizations. Second, research on the effectiveness of wellness programs and the factors that contribute to their effectiveness is summarized.

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Definition of Employee Wellness

While wellness programs have received a tremendous amount of attention from organizational scholars and practitioners, there is little consensus on what wellness is and how to maximize the effectiveness of a wellness program. This lack of consensus can cause confusion among scholars as well as practitioners who want to implement interventions to enhance it. According to the World Health Organization (Grad, 2002) health is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (p. 1). Although the term health has been used interchangeably with wellness and they share common characteristics, they are not the same thing. Health refers to a state of being, whereas wellness refers to a process of being (Jonas, 2005). In other words, health is regarded as a condition, whereas wellness is regarded as an ongoing progress. The meaning of wellness has been described in diverse ways as shown in Table 1. Moreover, most researchers describe wellness as a multidimensional construct with up to eight of the following dimensions that are defined in Table 2: emotional, social, physical, intellectual, spiritual/psychological, environmental, occupational/vocational, and financial. Despite the disparate definitions (Roscoe, 2009), most authors agree that wellness is (1) the process of being or an ongoing progress or series of actions to achieve positive health; and (2) a multidimensional construct in which the various dimensions synergistically promote one another (Adams, Bezner, & Steinhardt, 1998). This is consistent with a systems theory of holistic employee wellness.

Multidimensional Perspective on Wellness Programs

Similar to organizations, employee wellness is a system; a result of interactions between wellness dimensions (Georgakopoulos & Kelly, 2017). Organizations are social systems that function as a whole, which is the result of dynamic interactions among individuals (Schwarz,

2017). Organizations have started to regard employee wellness as a part of the organization and begun promoting the well-being of employees, to reflecting on the environments in which the employees work (Georgakopoulos & Kelly, 2017). It is important to acknowledge the multiple dimensions of wellness, as well as their interactions in order to understand it as a system.

Table 1. Definitions of Wellness

Citation	Definition of Wellness
Dunn (1977)	"an integrated method of functioning, which is oriented toward maximizing the potential of which the individual is capable. It requires that the individual maintain a continuum of balance and purposeful direction within the environment where he is functioning" (p. 4).
Hettler (1980)	"an active process through which the individual becomes aware of and makes choices toward a more successful existence" (p. 77).
Greenberg (1985)	"the integration of the components of health into a meaningful whole; high-level wellness is achieving a balance in the integration." (p. 3)
Ardell (1999)	"a lifestyle and a personalized approach to living life in a way that… allows you to become the best kind of person that your potentials, circumstances, and fate will allow" (p. X)
Renger et al. (2000)	"wellness embodies a way of living that encourages individuals to seek a balance in their lifestyle designed to improve the quality of life" (p. 404)
Corbin and Pangrazi (2001)	"a multidimensional state of being describing the existence of positive health in an individual as exemplified by quality of life and a sense of well-being" (p. 3).

Taking a holistic perspective on wellness, it is important to consider each dimension of wellness and how an organization can approach issues in the workplace given these interrelated dimensions. As shown in the Figure 1, wellness dimensions are correlated with each other. An employee's emotional wellness will likely be influenced by their physical, social, psychological, intellectual as well as occupational wellness and vice versa. Which dimension influences the

other and the direction of that influence is likely dynamic. Similar to any system, if one component becomes abnormal, other components in the system could be adversely affected or outcomes of the system might suffer (Georgakopoulos & Kelly, 2017). Since organizations are systems, issues in the workplace are also the result of the systematic interactions among employees in the workplace.

Figure 1. Multiple Dimensions of Wellness adapted from Georgakopoulos & Kelly (2017)

Additionally, the interaction of wellness dimensions is an ongoing process consistent with the definition of the wellness. Therefore, it is important to for organizations to pay attention to employees' wellness continuously for the benefit of all involved.

Employee wellness is optimized when it is conceptualized holistically (Georgakopoulos & Kelly, 2017). A holistic view of employee wellness is consistent with systems theory, which is

the idea that various factors interact with one another to influence a given outcome. For example, efforts to reduce mistreatment (e.g., harassment, bullying, incivility) in the workplace, can be addressed by considering how they impact wellness as a whole. For example, workplace bullying is an interpersonal behavior that is stressful for targets, witnesses, and the organization as a whole (Georgakopoulos & Kelly, 2017). It is likely to impact employees' social, emotional, psychological, and physical wellness. The consequences of bullying at the individual level are emotional distress, anxiety, and fear, which may result in increased turnover, absenteeism, and presenteeism, and subsequent organizational costs (Olive & Cangemi, 2015; Rayner & Cooper, 2006). Stress, fatigue, and anxiety, which are associated with conflicts and bullying in the workplace, can be reduced through multiple activities targeted at various wellness dimensions (Georgakopoulos & Kelly, 2017).

Georgakopoulos and Kelly (2017) conducted a qualitative study to determine how to design wellness programs that tackle bullying with more than 100 professionals from different industries. The authors emphasized workplace wellness as a system and as an essential factor for the health and success of employees, organizations, and communities. Based on the results of the study, they propose that workplace bullying can be tackled by targeting specific wellness dimensions.

Most issues or problems in an organization have multiple causes, thus the need to take a holistic/multifaceted view. Moreover, the content of organizational wellness programs varies depending on what is targeted. Table 2 displays examples of activities and expected organizational outcomes for each wellness dimension. Correspondingly, organizations are increasingly interested in implementing wellness programs to minimize the negative aspects of the job and maximize the factors that support employees' health (Aust & Ducki, 2004). The most

crucial factors for organizations to consider when implementing a wellness program are

reviewed next.

Table 2. Wellness Program Activity Examples with Wellness Dimensions

Wellness dimension	Expected Organizational Outcomes	Examples of Activities
Emotional	Job satisfaction Perceived organizational support (POS) Stress Work productivity	• Education of coping with stress (Aldana et al., 2005). • Mindfulness-based stress reduction wellness program (Fries, 2009). • Employee Assistance Plans (EAP) (Mattke et al., 2013).

Physical	Absenteeism
	Chronic diseases
	Good nutrition Smoking
	High physical activity
	Insurance claims
	POS
	Stress
	Substance use
	Work productivity Cost of employer-sponsored health insurance
		• Provide education, training, and assessment regarding sleep (CDC, 2018).
		• Provide napping room for employees to take a short break to reduce mistakes and increase work productivity (CDC, 2018).
		• Conduct health screenings/ health risks assessments to detect health issues and guide employees to participate in wellness program (Mattke et al., 2013).
		• Lifestyle management is primarily a prevention program (Mattke et al., 2013).
		  o Nutrition education
		  o Smoking cessation programs (through counseling, education, and competition)
		  o Weight loss activities (e.g., weight loss competition, Weight Watcher group meetings, personalized health coach phone call)
		  o Available healthy food options
		  o On or off-site gym membership offered to employees (Parks & Steelman, 2008)
		  o Health-related training courses such as how to use equipment safely (Mearns et al., 2010)
		  o On-site vaccinations/provide comprehensive on-site healthcare staffed with doctors and nurses to serve preventive health service (Johnson & Johnson, 2012)

Table 2. Continued

Wellness dimension	Expected Organizational Outcomes	Examples of Activities
Physical	Absenteeism Chronic diseases Good nutrition Smoking High physical activity Insurance claims POS Stress Substance use Work productivity Cost of employer-sponsored health insurance	o Blood pressure control and treatment & back problem prevention and care (Fielding, & Piserchia, 1989). ● Wellness event o Get discount on health insurance by performing health promoted behaviors measured by digital health platform or wearable device (e.g., tracking physical activity) (Bartz, 2018) ● Disease management ● Specific programs are designed to target specific diseases (e.g., diabetes, asthma, coronary artery disease, heart disease, depression, cancer and back pain, etc.) (Mattke et al., 2013).
Social	POS Stress Work productivity	● Violence Prevention program - training in policies and reporting regarding violence at work, evaluating prospective violent workers, creating a culture of support, and focusing on observable violent behaviors (NIOSH, 2004). ● Training program for social skills and leadership skills (Maes et al., 1998). o Create a buddy system to build social support for health promotion (Hurdle, 2001)
Occupational	Affective reactions to the organization Attitudes Job satisfaction POS Work-life balance	● Backup Family Care - providing 15 annual days of backup care support for family members and extra 20 days off for new parents (Shapiro, 2018). ● Task group intervention- changing working condition by taking rotation of tasks, and giving authorization for the entire production process (Maes et al., 1998).

Table 2. Continued

Wellness dimension	Expected Organizational Outcomes	Examples of Activities
Psychological	Absenteeism Job satisfaction Stress	● A Resilience App Based on Behavioral Science – providing customized and actionable how-to tips to employee to keep them healthy and energized during a hectic day (e.g., how to practice mindfulness) (Shapiro, 2018).
Financial	Affective reactions to the organization Attitudes Job satisfaction Organizational commitments POS Stress	● Money Coaching - provide advice on debt management, investing or retirement planning; provide group webinars on such practical topics as health savings accounts, tax planning and budgeting, or get individual sessions with financial coaches (Shapiro, 2018). ● Student Loan Coaching - help student financially with counseling on consolidating and refinancing student loans (Shapiro, 2018). ● Affordable Legal Aid- offers services including estate planning, property transfers, identity theft protection and living trusts (Shapiro, 2018).
Comprehensive	Absenteeism Affective reactions to the organization Attitudes Employee ethics Health claims Job satisfaction Life insurance costs Organizational commitments Organizational costs Patient cost POS Stress Work productivity	● Daily Well-Being Reminders - receiving daily messages to remind employees to take easy, quick actions to promote their wellness (Shapiro, 2018). ● Health circle– discussion group that meet 7-8 times in several months about an hour to 90 mins to discuss all kinds of health-related issues to promote employees'' wellness (Aust & Ducki, 2004).

Table 2. Continued

Wellness dimension	Expected Organizational Outcomes	Examples of Activities
Intellectual	Absenteeism Affective reactions to the organization Job satisfaction Stress Work productivity	● Travel ("Intellectual Wellness", n.d.) ● Pick up a hobby ("Intellectual Wellness", n.d.) ● Time management, remove objectivity, and talk to a wellness counselor ("Environmental Wellness", 2019) ● Exposing yourself to new ideas, people, and beliefs that are different from your own ("Environmental Wellness", 2019) ● Build a library of resources (Amador, 2019) ● Professional development classes: (Amador, 2019) ● Book club (Amador, 2019) ● Creative and innovative thinking activities (Amador, 2019)
Environmental	Absenteeism Affective reactions to the organization Attitudes Job satisfaction Stress Work productivity	● Awareness of Earth's natural resources ("Environmental Wellness", n.d.) ● Outdoor activities for boosting vitamin D ("Environmental Wellness", n.d.) ● Conserve energy ("Environmental Wellness", n.d.) ● Clean with "Safer Choice" or non-toxic products. ("Environmental Wellness Toolkit", n.d.) ● Provide high-quality filtered water, air filters, indoor plant and natural light (Amador, 2019) ● Recycling program (Amador, 2019) ● Avoid using hazardous materials and provide environmentally friendly options (Amador, 2019) ● Organization's farm and greenhouses ("Environmental Wellness", 2019) ● Organic garden ("Environmental Wellness", 2019) ● Reuse it, eat local, turn it off, travel light, and clean green (Amaya, 2018)

In this section, various meta-analytic studies, systematic review studies, and individual studies were reviewed to explain the effectiveness of emotional, physical, and comprehensive wellness programs. To date, there does not appear to be any meta-analyses on social, financial, psychological, or environmental wellness programs. Intellectual and occupational wellness programs appear to encompass family-friendly/work-life balance programs which is such a vast literature, it was deemed beyond the scope of this review.

This review primarily focuses on meta-analytic studies due to the following advantages of meta-analysis over other two types of studies (Schmidt & Hunter, 2014; Walker, Hernandez, & Kattan, 2008). Results of meta-analyses are better estimates of the effect sizes in the population than individual studies. The validity and accuracy of the effect size estimates are enhanced as more data are included in a meta-analysis, and the greater amount of data positively impacts the statistical power to detect the true effects in the population. Further, the heterogeneity in findings across studies can be analyzed, and the sources for these differences can be examined (e.g., differences in the representativeness of samples, publication bias) and reveal meaningful moderators.

Emotional Wellness Programs

The primary way organizations address emotional wellness is through stress management programs. Richardson and Rothstein (2008) conducted a meta-analysis to examine the effectiveness of stress management interventions. Their study included 36 experimental studies that used random assignment, stated a sample size, and excluded samples diagnosed with a clinical illness. The majority (35 out of 36 studies) measured effectiveness with a psychological outcome (e.g., stress, anxiety, general mental health, and job/work satisfaction). The second most

examined outcome variable (nine studies) was a physiological outcome (e.g., systolic and diastolic blood pressure). Only six studies measured organizational outcomes (absenteeism and productivity). Richardson and Rothstein classified the stress management programs into five types: (1) cognitive-behavioral, (2) relaxation, (3) organizational, (4) multimodal, or (5) alternative interventions. Cognitive-behavioral interventions educate employees on the skills to modify their thoughts and emotions to manage stressful events (cf. Bond & Bunce, 2000). Relaxation interventions include meditation and deep-breathing exercises that help employees stay in a physical or mental state that is opposite of physiological stress (cf. Benson, 1975) or (Richardson & Rothstein, 2008). Organizational interventions focus on organizational support for stress. Multimodal interventions include multiple components from other interventions introduced previously. Alternative interventions include exercise or electromyogram biofeedback training, journaling, personal skills development, or classroom management training (for the educator).

Among all stress management intervention types, the cognitive-behavioral intervention type showed the most change ($k = 7$, $d = 1.16$), which was the most active strategy for dealing with stress. The next most effective was the alternative intervention ($k = 7$, $d = 0.91$). Relaxation interventions showed medium effectiveness ($k = 17$, $d = 0.50$). Multimodal interventions showed effectiveness, but the effect size was small ($k = 19$, $d = 0.24$). Multimodal intervention Organizational interventions were the least effective ($k = 5$, $d = 0.14$). Each multimodal intervention included in this study was not identical in that it had a different number of components and combination of components. Therefore, it is difficult to identify which specific factor influenced its effectiveness. Intervention length had no impact on the size of the effect. Overall, this meta-analysis suggested that organizations concerned with emotional wellness

should use an intensive cognitive-behavioral intervention rather than combining this intervention with other treatments. However, relaxation can be combined with other treatments and yield quite promising results (Richardson & Rothstein, 2008).

Physical Wellness Programs

Physical wellness programs are among the most popular programs implemented by organizations. Research has shown that physical fitness and exercise reduce stress levels (Iwasaki, Zuzanek, & Mannell, 2001). Thus, implementing a physical wellness program is likely to improve both physical and emotional wellness. Parks and Steelman (2008) conducted a meta-analysis ($k = 17$) of the effectiveness of fitness-oriented programs and comprehensive wellness programs. Criteria for inclusion in the meta-analysis were (1) it was conducted between 1980 to 2005, (2) had a control group to compare the results of participants to non-participants, (3) included job satisfaction and/or absenteeism outcome variables, and (4) gathered empirical data. Fitness-oriented programs offered employees on or off-site gym membership, whereas comprehensive wellness programs offered both fitness membership and health education such as stress reduction classes and nutrition classes. The study showed that the average effect sizes for both fitness-oriented programs and comprehensive wellness programs with absenteeism ($d = -0.30$) and job satisfaction ($d = 0.42$) were not trivial (Parks & Steelman, 2008). The type of wellness program did not make a difference, nor did the methodological rigor of the primary study.

A more recent meta-analysis by Rongen et al. (2013) focused on worksite wellness programs concerning smoking cessation, physical activity, healthy eating, and/or obesity on absenteeism due to health issues, work productivity, and workability. The primary studies ($k = 18$) ranged from 1993 to 2012, and 15 studies were published in the 2000s. The integrated effect

size of the programs was small ($r = .24$); however, the effectiveness of the programs varied based on characteristics of the program. Participation consisted of predominantly white-collar workers, and programs were more effective for employees who were less than 40 years old. Additionally, programs that encourage participants with at least weekly-based communication were shown to be four times more effective. Moreover, when the initial number of participants was small, the effect of the program was larger. Rongen et al. (2013) interpreted this finding as self-selected participants have higher motivation, which results in better outcomes. Therefore, the authors recommended that organizations stimulate workers' motivation to participate in health promotion programs and focus on motivated workers. Regarding the study design and effectiveness, poor or fair methodological quality of studies had larger effects on sick absenteeism, work productivity, and work ability than good or excellent methodological quality studies. This result seems inconsistent with treating more methodologically rigorous studies as a higher standard of research; however, poorly designed programs have been shown to be more effective for negative outcomes (Terpstra, 1981)

In an effort to identify monetary savings from wellness programs, Baicker, Cutler, and Song (2010) conducted a meta-analysis of wellness programs ($k = 32$) that were focused mostly on smoking or/and obesity (some programs included more components such as stress management, alcohol consumption, and blood pressure). The most common form of delivery was a survey assessing health risks followed by self-help education materials, health counseling with professionals, and group activities with a trainer. The inclusion criteria for the primary studies were (1) well-defined intervention; (2) comparison group; and (3) a new intervention. The study measured a reduction in employees' absenteeism or/and medical costs to show whether these programs generate savings for organizations. Regarding absenteeism ($k = 22$), the average

savings were about $294 per employee, while average program costs were $132 per employee

per year. Regarding medical costs ($k = 22$), the average savings were about $358 per employee,

while average program costs were $144 per employee per year. Considering that over 90 percent

of the organizations implementing these programs were large firms (greater than 1000

employees), these savings are quite considerable. However, the benefits of implementing these

programs in small businesses are unknown.

  Sleep programs. Workplace wellness programs for sleep are a relatively newer

phenomenon compared to other programs (e.g., stress management and substance use); thus, no

meta-analyses have been conducted on workplace sleep programs. Instead, single studies of

workplace sleep programs are reviewed. Studies have shown that inadequate sleep can be

indirectly costly to an organization through workplace accidents and injuries as well as

absenteeism and low work productivity (Kleinman et al., 2009; Lockley et al., 2007). To avoid

this workplace cost, sleep researchers report that adults need to sleep more than seven hours a

day (Badr et al., 2015). According to Gingerich, Seaverson, and Anderson (2018), optimal

productivity was found among the employees who reported eight hours of sleep a day across

multiple industries and feeling fatigued during the daytime was associated with presenteeism and

absenteeism. Burton et al. (2017) reported similar results and added that employees with seven to

eight hours of sleep a day had a lower number of health risk factors than employees who slept

less. To avoid all the disadvantages in the workplace associated with a lack of sleep, employers

can provide remedies to encourage better sleep habits such as flexible starting and ending times

(Grzywacz, Casey, & Jones, 2007) and an on-site napping room for overtime workers (Atkinson,

1999).

In a study of a sleep well-being program that promotes good sleep habits, researchers measured changes in sleep habits from 2012 to 2013 and reported that participants significantly improved in job productivity (Burton et al., 2017). Additionally, a workplace sleep education program implemented for five months included education with webinars, monthly reminders with useful resources for good sleep as well as strategies to enact, followed by incentives (Burton et al., 2017). Effectiveness of the program was measured with pre-, and post-program self-report surveys among 357 participants. The results showed that there was significant enhancement in sleep quantity and quality. Munafo et al. (2018) conducted a case study called ProjectZ which is internet-based cognitive behavioral therapy (CBT) application to help employees with sleeping issue. The program is gamified, self-paced, and customized to each employee who shows sleep deprivation based on a health screening. To measure the effectiveness of the program, the study gathered and compared pre and post screening regarding sleep deprivation. Results showed that ProjectZ was effective, significantly decreasing sleep deprivation symptoms by 74%.

  Substance use programs. Considering the definitions of wellness dimensions, substance use falls under emotional and physical wellness. Frone (2013) reviewed two meta-analyses (Bennett, Reynolds, & Lehman, 2003; Webb et al., 2009), together comprised of 19 unique studies and 14 additional studies to determine the effectiveness of substance use wellness programs. The programs Frone reviewed encompass health and lifestyle assessment, training in psychosocial skills, and educational interventions including stress management, healthy eating, active lifestyle, anger management, goal setting, and team awareness training. The effectiveness of the substance use wellness programs was assessed with self-report measures of alcohol problems or alcohol consumption, binge drinking, or job performance productivity. Some studies measured effectiveness at multiple time points (e.g., 6 or 12 months), and some studies included

a control group to compare with the experimental group. Overall, substance use wellness programs had either no effect or a small effect. These results indicated that increased awareness of alcohol and drug risks do not necessarily lead to a modification of substance use (Maisto, Galizio, & Connors, 2008).

Additionally, many of the programs reviewed in Frone's (2013) review had methodological weaknesses such as selection bias, low participation rates, low compliance with the intervention, small sample sizes, high dropout rates, and no effort to adjust the analyses for the dropout rate. Frone (2013) acknowledged that it is difficult to avoid having a single methodological issue or limitation in a study. Despite the potential advantages of reducing substance use and eventually increasing job performance and reducing employer costs, none of the studies reviewed support the effectiveness of substance use programs. Therefore, Frone (2013) recommended reconsidering the theoretical underpinnings of substance use wellness programs as one of the ways to increase their effectiveness.

Comprehensive Wellness Programs

"Comprehensive" wellness programs are designed to address more than one wellness dimension. Aust and Ducki (2004) conducted a review ($k = 11$) of comprehensive wellness programs called health circles ($N = 81$) in Germany. A health circle refers to a discussion group of employees focusing on workers' physical and psychosocial health by improving working conditions based on objective and subjective assessments. The primary studies included in this review had either (1) a randomized control group, (2) a nonrandomized control group, or (3) an evaluation of the study. Evaluation outcomes included reaction (satisfaction) outcomes, improvement of working conditions, absenteeism due to sickness, and health effects mostly assessed with a retrospective survey. All of the studies showed health circle participants had high

levels of satisfaction except for one. All but one study showed improvements in working conditions such as improved communication with peers and supervisors and working relationships, as well as social support, which is related to social and occupational wellness. Five of the seven studies showed a reduction in absenteeism due to sickness. Five studies measured health with a self-report survey, and four studies showed positive changes in self-rated psychological and physical health.

Safety in the workplace is one of the major factors that influence employees' health, as well as physical and psychological wellness. The National Institute for Occupational Safety and Health (NIOSH) added components of wellness and well-being (or health promotion) to their definition of occupational health and safety. They coined the phrase Total Worker Health (TWH) in 2011 which is defined as "policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being" (NIOSH, 2012; p.1). This integration occurred based on the following four premises: (1) employees' exposure to occupational hazards and risky behavior increase the possibility of worker diseases, (2) workers who are exposed to work hazards are more likely to conduct risky behaviors, (3) a TWH approach to the program will increase participation rates in such programs and effectiveness for high risk workers, and (4) TWH programs will benefit an organization overall.

Anger et al. (2015) conducted a review of 17 primary studies implementing a TWH program that included outcome data for statistical analyses. Outcome variables were measures of weight, exercise, smoking cessation, blood pressure, and cholesterol level. All but weight showed positive changes. However, the effect sizes were not computed since the number of comparable studies was small. Contrary to the studies that only focused on occupational safety

and health only – programs which narrowly defined health promotion – TWH programs rapidly and effectively influenced work injuries, as well as chronic diseases. Only two programs measured return on investment. Both showed savings for the organization.

Pellertier (1991; 1993; 1996; 1999; 2001; 2005; 2009; 2011) issued eight reviews and analyses of clinical and cost-effectiveness studies of comprehensive health promotion and disease management programs at the worksite. Pellertier reviewed new studies every two to three years. Each review documented changes in the wellness programs and their effectiveness.

Interventions from 1998 to 2000 (fifth series; $k = 15$) indicated that interventions were targeted at very specific diseases (e.g., breast cancer, prostate cancer, diabetes mellitus) that were significant to the organizations. Interventions guided high risk employees with focused, consistent, sustained behavioral changes and medical oversight. As a result, these specific disease management programs were both clinically-effective and cost-effective in a short period of time. However, attrition is often greater in these intensive interventions, despite companies showing continuous support and informing participants of requirements and incentives for completion. Regarding program duration, the effects of long-term programs (3 to 5 years) last longer than short-term programs. None of the comprehensive wellness programs reduced all targeted risk factors, but programs were beneficial and individual employees may benefit differently from the same program. Moreover, the most significant reduction in chronic disease risk factors resulted when an organization established a supportive environment and implemented an intervention that targeted previously-identified individualized risk factors (Pellertier, 2001; 2005; 2009; 2011).

Programs from 2008-2010 (eighth series; $k = 27$) were either experimental designs or quasi-experimental designs that provided comprehensive and individualized risk reduction for all

employees at high health risk (Pellertier, 2011). The programs demonstrated increased number of longitudinal studies of over two, four, and seven years. In addition to specific diseases addressed in the previous studies, obesity, metabolic syndrome, back pain, and lupus were added for outcomes analysis. Productivity and performance were also measured as organizational outcomes which showed significant improvement. Programs included in this eighth series study utilized advanced information technologies (e.g., personal health records, electronic medical records, interconnectivity, web-based health improvement programs, and handheld information portals) which significantly influenced health care delivery efficiency and health enhancement efforts. As a result, the study highlighted well -designed, -implemented, and -evaluated disease management programs that encompass comprehensive and high-risk interventions to achieve optimal clinical and cost-effectiveness.

Song and Baicker (2019) conducted randomized clinical trial of worksite wellness programs at 160 worksites between January 2015 to June 2016. Twenty worksites (4037 employee) were randomly assigned to the treatment group and 140 worksites (28,937 employee) were randomly assigned to the control group. Contrary to the positive clinical and cost-effective outcomes from Pellertier's comprehensive reviews, Song and Baicker (2019) showed that even with increased investment in worksite wellness programs, only two self-reported health outcomes improved (e.g., 8.3% increase in regular exercise ($p =.03$); 13.6 % increase in actively managing weight ($p = .02$) out of 29 outcomes. They reported no significant changes in clinical measures of health, health care cost, or employment outcomes (e.g., absenteeism, job tenure, and job performance). This result is inconsistent with a number of studies described previously. Wellness programs focused on nutrition, physical activity, stress reduction. They did not, however, targeted specific diseases, which Pelletier emphasized as a successful strategy to build

for improved clinical outcomes. It is important to note that most of the studies included in Pellertier's reviews used observational (non-experimental) designs, whereas Song and Baicker (2019) conducted a randomized clinical trial (experiment) which is considered the gold standard in research study design. This may explain the discrepancies in the results between Pellertier's reviews and Song and Baicker's study.

WELLNESS PROGRAM STUDY DESIGN AND EVALUATION

As illustrated by the descriptions of various wellness programs in this manuscript, no two wellness programs are exactly alike. Heterogeneity in program design and evaluation (Batorsky, 2017) are due to the organizations' different needs or purposes regarding their employees' wellness; different types, level, and form of services (Batorsky, Van Stolk, & Liu, 2016); different strategies to get employees engaged (Huang et al., 2016), as well as different workplace characteristics. The mixed results of studies examining wellness program effectiveness may also be due to study design and differences in the way that variables are operationalized (Osilla et al., 2012). For example, although some studies include a comparison group, that group may not have been created through random assignment. Further, some studies do not have a comparison group and some studies rely solely on observation to evaluate their effectiveness. That said, even randomized controlled trials report mixed results in employee outcomes (Engbers et al., 2005). With regard to operationalization of variables, even something as simple as participation in the program varies across studies. Some studies measure program participation as the number of people who signed-up, whereas other studies measure it as the number of participants who completed the program (Glasgow, McCaul & Fisher, 1993). Moreover, organizations may be tempted to choose designs and measures that yield more favorable results (Baxter et al., 2014).

Best Practices for Employee Wellness Program Design and Evaluation

Goetzel et al. (2014) reviewed three decades of wellness programs to identify the best practices for wellness program design and evaluation. They reviewed both effective and ineffective programs and identified three components of an effective program: (1) program structure; (2) delivery process; and (3) outcomes. Program structure focused on the appropriateness of program components and how the components are placed (e.g., "How is the program delivered to employees and are the operational underpinnings reliable? What topics are

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covered and are they relevant to the population served?"). Programs that are more relevant are likely to be more successful.

Delivery process focused on the how well the program is executed (e.g., "Are communications and branding strategies robust and sufficiently diverse to attract the attention of different population segments? Do programs yield sustained engagement over time?"). Poorly executed well-designed programs will show poor results. Thus, it is important to invest in communication and branding and identify ways to sustain employee engagement over time. Additional program structure and delivery process questions appear in Appendices A and B.

Wellness program outcomes can be organized into three domains: employee's wellness (e.g., health habits, biometric characteristics, well-being), organizational cost (e.g., medical insurance claims, absenteeism records, workers' compensation liability claims), and individual and organizational performance (e.g., absenteeism, safety incidents) (Cancelliere et al., 2011). Ideally multiple outcomes are measured to assess the overall impact of the wellness program (Goetzel et al., 2014). It often takes three or more years of implementation to see organizational savings (Lerner et al., 2013; Serxner, Gold, & Parkerk, 2013). The following section describes the factors identified in the literature that influence wellness program effectiveness, as well as best practice elements.

As Frone (2013) noted, there are many methodological issues that influence wellness program effectiveness. Even when the program is well-designed, implemented and evaluated, low employee participation rates limit its effectiveness (Sherman, 2002). Therefore, it is important for organizations to recognize the variables that influence participation, enhance the variables that promote program participation, and minimize barriers to participation. There are many studies addressing factors that influence wellness program participation rates and program effectiveness. Bayer (2016) categorized the predictors of the program participation rate into four categories: individual characteristics, organizational characteristics, program characteristics, and environmental characteristics. Each of these will be reviewed next, collapsing environmental characteristics with organizational characteristics.

Individual Characteristics

Poor health impacts employees' productivity at all ages. Employers have a perception that older workers tend to be influenced more by health than young workers regarding work productivity (Pitt-Catsouphes, James, & Matz-Costa, 2015). However, age of the workers' does not significantly correlate with work productivity unless certain health conditions prevent them from fulfilling job requirements (Schultz & Edington, 2007). Regardless, research has shown that it is hard to convince older workers to participate in health promotion programs because of a lack of time during or outside of the work (Kruger et al., 2007; Person et al., 2010). Additionally, older workers' negative attitudes about exercise and a lack of knowledge of exercise benefits negatively influences their participation (Miller, 2009). In a recent study comparing participants and nonparticipants of a workplace health promotion program, older workers ($\geq$50 years of age) were significantly more likely to agree with the statement "employer interference with my health

is a violation of my privacy" than what would be expected by chance (Robroek et al., 2012). The same finding was not found for individuals less the 40 or for 40-49-year olds.

Although research shows that older workers are less interested in participating in wellness programs, Robroek, Van Lenthe, Van Empelen, and Burdorf's (2009) systematic review of the literature revealed that program participation rates for older workers were mixed. Among the ten studies they examined, five studies showed a high participation rate for older workers, whereas the other five studies showed a low participation rate. In one study, Baby Boomers (born between 1946-1964) showed greater beliefs in the value of the wellness program, intention to participate, and were more likely to gain incentives through the wellness program than Millennials (born between 1981-1996) and Gen X employees (born 1965-1980) (Ott-Holland, Shepherd, & Ryan, 2019).

Employee sex was significantly related to participation in a wellness program in 15 out of 22 studies. However, the results were not consistent. Twelve of these studies indicated that women were more likely to participate and three of these studies indicated that men were more likely to participate. Women were more likely to participate in educational and multicomponent wellness programs than fitness-only programs. This may be explained by women showing greater health care-seeking behavior than men (Thompson et al., 2016).

Sex differences may be further complicated by other variables. For example, Tavares and Plotnikoff (2008) added that it is harder for women with young children to participate in fitness-related wellness programs than women without children. In another study, women reported they were lacking time due to work (Gjerdingen, McGovern, Bekker, Lundberg, and Willemsen, 2001).

Besides sex, workers' levels of self-interest in their own health and self-efficacy were

influential to program participation and achievement (Lovato & Green, 1990). Additionally, employees with healthy lifestyles and good health conditions tend to participate in wellness programs (Thompson, Smith, & Bybee, 2005). However, this contradicts the study that showed the reason why employees choose not to participate in wellness programs was due to their good health condition (Robroek, Lindeboom, & Burdorf, 2012). The reason for these mixed results may be due to variations in the types of wellness programs. For example, if the wellness program focuses on maintaining a healthy lifestyle, then the employees who are already in good health may be more likely to participate in order to maintain their health. However, if the program focuses on treating or preventing disease, employees in good health may think the program is designed for people in bad health and will therefore be less likely to participate.

There were mixed results for marital status, education level of employees, and employees' income. Across seven studies, five studies showed higher participation rates for married and cohabitating workers (Robroek et al., 2009). Regarding education level of the employees, there were positive and negative correlations with program participation. Among five studies, one study found employees with a lower level of education were significantly more likely to participate, while the other four studies found that employees with a higher level of education were more likely to participate (Robroek et al., 2009). Four studies were reviewed regarding income and participation, and only one study showed a positive significant association between income and participation.

Organizational and Environmental Characteristics

Leaders are the organizational representatives who play a major role in creating an organizational culture that values wellness (DeJoy et al., 2009). A culture that values health promotion programs encourage employees' engagement and participation in the program

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(Seaverson, Grossmeier, Miller, & Anderson, 2009). In various studies, leadership has shown to be one of the most crucial variables that impact wellness program participation rates and effectiveness (Della et al., 2008; DeJoy et al., 2009; Hoert, Herd, & Hambrick, 2018). Senior management personnel visibly participating in the health promotion programs can be perceived as leadership support for the program (Sherman, 2002).

Additionally, the direct supervisor can actively encourage employees to participate in the program and serve as a program supporter. As a number of advocates and participants of the health promotion program increase, employees' general acceptance of the program will increase, and eventually, a worksite health-promoting culture will be created. Hoert, Herd, and Hambrick (2018) proposed that employees who perceived a high level of leadership support for a health promotion program showed a high level of wellness program activity participation, less job stress, as well as a high level of health behaviors. Additionally, perceived leadership support for the wellness program has been shown to be significantly related to participation and perceived effectiveness (Batorsky, 2017).

Similar to leadership support, Burke and Dailey (2017) noted the importance of social influences including coworkers' support and socialization on employees' health behaviors. They recommended that organizations provide opportunities for employees to communicate and socialize with their coworkers to encourage healthy behaviors. Leadership support as well as coworker support are positively associated with wellness program participation (Ott-Holland, Shepherd, & Ryan, 2019). Additionally, implementing a wellness program in an organization can increase the perceived workplace health support which is associated with employee productivity (Chen et al., 2015). Moreover, perceived workplace health support can create a perceived norm in which one feels social pressure to engage or not in certain behaviors (Fishbein & Ajzen,

1975). As individuals positively perceive the norm toward the behavior, their intention to perform the behavior increases. Therefore, employees who perceive the norm of wellness program behaviors positively, have greater intentions to participate in wellness programs (Black, 2017).

Berry, Mirabito, and Baun (2010) pointed out that the wellness of employees at small companies (less than 500 employees) is crucial as each employee holds bigger responsibility in the organization compared to large organizations and this likely to cause a lot of stress. Moreover, losing one employee in a smaller company is a significant loss, thus retention of employees is vital. Unfortunately, small businesses are less likely to offer wellness programs in the first place and when they do, they are less-comprehensive (Harris, Hannon, Beresford, Linnan, & McLellan, 2014) worksite health promotion programs compared to large organizations (McCoy et al., 2014).

Barriers which hinder the sustainability or implementation of wellness programs are direct (Linnan et al., 2008) and indirect costs (e.g., staff, time, and facility; Liss-Levinson, Goetzel, Goodman, & Kennedy, 2009) of the wellness program, lack of expertise to implement a program independently, and concerns about protecting employees' privacy (citation). Especially for screening programs, employees at smaller companies (less than 50 employees) are less likely to participate (Hall, Kelly, Burmeister, & Merchant, 2017) and the underlining reason can be privacy concerns. Additionally, smaller companies are less likely offer health insurance which is a one of the key vehicles for offering a wellness program (Hall et al., 2017). However, smaller organizations have opportunities such as less bureaucracy, easier incorporation of employees' suggestions, greater personal accountability, and high potential for teamwork and bonding. Regarding willingness to participate, organization size was not a determining factor once the

wellness program was implemented (Hall et al., 2017). Organizations located in rural settings will have similar obstacles to implementing wellness program compared to organization located in urban settings (Liss-Levinson et al., 2009). Categorization of the size of the organization varies depending on the study and this makes comparisons complicated (Harris, Hannon, Beresford, Linnan, & McLellan, 2014). In the future, researchers could use the Bureau of Labor and Statistics' firm size classes or use a continuous ratio scale for organization size.

Wellness Program Characteristics

Garofalo (1994) reported that two years after a wellness program was implemented in a company, many of the employees were still overweight and had high cholesterol levels. In response to the disappointing results, a 12-week incentive-based wellness program was implemented to change employees' lifestyles. The program took a team approach to create social support and reward employees based on the team's achievements, as well as individual achievement. Team members reported their progress and achievements to their team leader, and the team leader submitted the results to the program committees. As a result, more than half of the participants lost weight, and the food consumed in the company cafeteria reflected healthier food choices. For example, the consumption of whole milk, French fries, donuts, and chips decreased, while skim milk and bagels increased. A reaction evaluation survey showed that the majority of the respondents indicated that the program helped them change their dietary habits (84%), exercise more frequently (67%), and influenced their willingness to continue this changed lifestyle (97%) and attend the program next time if offered (93.5%).

Fu, Bradley, Viswanathan, Chan and Stampfer (2016) demonstrated a wellness program effectively improved employees' biometrics (e.g., body mass index, blood glucose, blood pressure, and nicotine) by using an incentive system. The incentive was a discount off the

employee health insurance premium contribution which was distributed to employees who passed a health standard. Moreover, an employee who failed to meet the health measure initially received a retroactive rebate on the next opportunity if they met the standard. The continued opportunities to earn a health insurance benefit kept employees participating in the program an additional two years or until they achieved the program goal.

Incentive systems are considered extrinsic motivation that aim to increase wellness program participation, especially for those employees who are not intrinsically motivated by the benefit of wellness or toward wellness programs (Seifert, Chapman, Hart, & Perez, 2012). Incentives can be used to initiate participation in a wellness program and as a bridge to intrinsic motivation. For example, as employees learn accurate information about wellness benefits under their own volition by participating in the program, intrinsic motivation to complete the program will increase. However, across multiple studies there is mixed support for the effectiveness of program incentives. It appears to be positively related to perceived effectiveness but not related to participation.

In addition to the incentive system, accessibility plays an important role in employees' participation (Sherman, 2002). Considerable changes in employees' usual schedule are negatively associated with program attraction and involvement. According to Conlon (2013), the results of a survey and interview with employees who have not participated in a wellness program reported that they have no time during the workday to participate (67%); they have no time before and after the work (51%), or they are too tired (13%). Participation during work time was significantly related to perceived effectiveness (Batorsky, 2017). Therefore, it is crucial to provide a convenient schedule to participate in the program in the initial recruitment period. For example, wellness programs are more likely to attract employees when the program is

communicated to a large number of the employees during lunchtime or a health fair (Sherman, 2002). However, wellness programs are less likely to attract employees if the program requires an employee to put additional effort to learn about the program in the initial stage.

Empowerment and participation are two leading aspects of program success (Aust & Ducki, 2004). Ownership includes the right to control and the right to enjoy consequences of the control (Ben-Ner, Han, & Jones, 1996). Programs should be designed to encourage employees to raise their voices about organizational issues regarding workplace wellness and suggest strategies to solve the issues. Contribution to the decision-making procedure allows employees to develop their own capacities are viewed as vital factors for successful health promotion programs in addition to health enhancement in themselves (Aust & Ducki, 2004). Additionally, employee experience greater ownership and are more likely to participate in the programs since their requests may be incorporated (Georgakopoulos & Kelly, 2017). Therefore, the design of a wellness program should be an engaging process that encompasses employees as stakeholders to adapt and customize to the changing needs of both organizations and employees to create a thriving and sustainable wellness program.

Program comprehensiveness is one of the factors that is positively associated with participation (Goetzel et al., 2014; Prank, 2014). Further, people will participate in the program that is relevant to their needs (e.g., disease prevention programs for poor health or at-risk employees; lifestyle management and improvement programs for healthy employees). Therefore, taking a more comprehensive approach to wellness allows the program to target a broader population in the organization.

Batorsky (2017) gathered survey results from 81 employers (with a total of 24,393 employees), who implemented wellness programs, to test the relationship between the number of

activities and participation. Controlling for employees' characteristics, the author examined the relationship between program components and participation. The number of activities were organized into three levels: low (average number = 7), medium (16), and high (24) level. There were no significant differences between high and medium levels of activities on participation, but there were significant differences in participation between the low and medium/high levels of activities. However, Parks and Steelman's (2008) meta-analysis showed both single activity wellness programs (e.g., physical activity) and comprehensive wellness programs had significant effects on job absenteeism and job satisfaction. Therefore, study results are mixed. It is important to note that there are several factors other than participation rate that influence wellness programs effectiveness.

Organizational Implications

An organization can strategically increase the workplace wellness program participation rate by considering and targeting individual characteristics. As older workers' barriers for participating in wellness programs are a lack of time, concerns about privacy, negative attitudes, and lack of knowledge of wellness benefits, organization can provide activities at various times, provide activities that increase awareness and knowledge of health benefits, and strengthen the data security to mitigate the barriers.

Additionally, organizations may want to implement strategies depending on the sex composition in their organization. If there are more females in the organization, they may want to emphasize educational and multicomponent wellness programs. Additionally, providing childcare assistance service (which is related to financial wellness and occupational wellness) may eliminate this barrier to participation that may be stronger for women. Given men showed less tendency to seek health behaviors (Thompson et al., 2016), extrinsic motivators may

facilitate their participation (Seifert et al., 2012).

Therefore, it is important to know the organization population's needs, beliefs about their health as well as how the wellness program is advertised relative to their needs. However, accessing employee health information may be difficult (Paul, 2017). Additional research is needed on the extent to which marital status, education level, and income related to wellness program participation. Finally, other variables are also likely to relate to program participation including segmentation from other work-related activities; program alignment with company mission, vision, and business objectives; and program accountability (Pronk, 2014).

Regarding the organizational characteristics, an organization can build support from leadership and coworkers and a culture of participation to positively influence participation in wellness programs. These factors are associated with a higher level of organizational commitment to a healthy culture (e.g., mission and vision), multi-level leadership (e.g., executives, direct supervisor, senior management personnel), engagement in the program design, implementation, and evaluation (Pronk, 2014); and participation in the program (Sherman, 2002).

In terms of program characteristics, an organization can provide incentives that meet the needs of the employees to increase participation (e.g., meaningful and relevant participation incentives; Pronk, 2014). Additionally, providing multiple activities offered at multiple times via various modalities are considered a best practice (Pronk, 2014).

Building employee's ownership of the wellness program is one of the best practices that an organization can do to increase the program effectiveness. Encouraging employees to participate in designing the program will help the wellness program to be tailored to the

organizations' population and needs. As a result, employees' commitment toward the organization, as well as participation will increase.

An organization can provide multiple programs that advocate for a comprehensive approach to wellness with multiple activities to attract broad range of participants. Multiple programs can be an integration of wellness-like programs and vendors, including Employee Assistance Programs, work-life balance, disease management, case management, return-to-work, FMLA, occupational safety and health, occupational medicine, ergonomics. Moreover, encouraging year-round comprehensive program communications (Batorsky, 2017; Pronk, 2014) helps increase participation. All these suggestions and guidelines regarding individual, organizational, and program characteristics can and should be considered when designing, implementing, and evaluating wellness programs.

CONCLUSIONS

The answer to the question "Are employee wellness programs effective?" is "it depends" on the wellness dimension targeted, participation, and the outcomes measured. Many organizations have implemented workplace wellness programs and achieved positive organizational outcomes. The return on investment for these programs varies by how well the program is designed, implemented, and evaluated, as well as how long the program is in place. Wellness is defined as an ongoing progress or series of actions of achieving positive health in eight dimensions which synergistically promote one another: social, emotional, physical, intellectual, spiritual/psychological, environmental, occupational/ vocational, and financial. Multiple meta-analyses provide efficient overviews of the effectiveness of wellness programs categorized by the various program types. Additionally, individual, organizational/ environmental, and wellness program characteristics that impact program participation as well as best practice elements were identified. However, additional research is needed to demonstrate their efficacy, particularly with regard to the design, implementation, and evaluation of the programs.

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APPENDIX A

EMPLOYEE WELLNESS DIMENSIONS

Construct	Citation	Definition provided
Social wellness	Hettler (1980)	"Degree to which one contributes to the common welfare of one's community. This emphasizes the interdependence with others and with nature." (p. 78)
	Crose et al. (1992)	Components including "psychosocial history/history if significant relationships, social network/ density, relational style/patterns, attitudes toward relationships and seeking help from others" (p. 153)
	Csiernik (1995)	"Involves social systems including family, work, school, religious affiliation, social values, customs and social supports and the ability to interact effectively with others, including the development of appropriate relationships among friends, families, co-workers, and communities" (p. 6)
	Adams et al. (1997)	"The perception of having support available from family friend in times of need and the perception of being a valued support provider" (p. 211)
	Renger et al. (2000)	"Getting along with others, people react to person answering, and person interaction with social environment" (p. 406)
	Durlak (2000)	"Peer acceptance, altruism, attachment/bonds with others, social skills as communication, assertiveness, conflict-resolution" (p. 223)
	Roscoe (2009)	"The movement toward balance and integration of the interaction between the individual, society, and nature." (p. 218)
	Strout & Howard (2012)	"Ability to form and maintain positive personal and community relationships" (p. 197)
	Stoewen (2017)	"Maintaining healthy relationships, enjoying being with others, developing friendships and intimate relations, caring about others, and letting others care about you; contributing to your community" (p. 182)
Emotional wellness	Hettler (1980)	"Degree to which one has an awareness and acceptance of one's feelings. This includes the degree to which one feels positive and enthusiastic about oneself and life. It measures the capacity to appropriately control one's feelings and related behavior, including the realistic assessment of one's limitations." (p. 78)
	Crose et al. (1992)	Components including "Psychiatric history/medications, coping style/patterns, self-

		awareness/self-image, and attitudes toward emotional expression/disclosure" (p. 153)
	Csiernik (1995)	"involves ability to maintain relative control over emotional states in response to life events and is associated with stress management and responses to emotional crises" (p. 5)
	Adams et al. (1997)	"Procession of a secure self-identity and a positive sense of self-regard, both of which are facets of self-esteem" (p. 211)
	Renger et al. (2000)	Level of "anxiety, depression, well-being, self-control, and optimism" (p. 406)
	Roscoe (2009)	"an awareness and acceptance of feelings, as well as a positive attitude about life, oneself, and the future." (p. 219)
	Strout & Howard (2012)	"Ability to acknowledge personal responsibility for life decisions and their outcomes with emotional stability and positivity" (p.197)
	Stoewen (2017)	"Understanding and respecting your feelings, values, and attitudes; appreciating the feelings of others; Managing your emotions in a constructive way; feeling positive and enthusiastic about your life" (p. 182)
Physical wellness	Hettler (1980)	"degree to which one maintains cardiovascular flexibility and strength", "the behaviors that help one to prevent or detect early illnesses" and "degree to which one chooses foods that are consistent with the dietary goals." (p. 78)
	Crose et al. (1992)	Components including "medical history/medications, reproductive health history, body awareness/ body image, exercise and eating behaviors, and attitudes toward physical fitness and health care." (p. 153)
	Csiernik (1995)	"Fitness, nutrition, adequate rest and sleep, and medical self-care including the absence of disease and genetic influences that affect physiological functioning as well as behaviors that affect biological functioning including smoking, and drug use" (p. 4)
	Adams et al. (1997)	"Positive perception and expectation of physical health" (p. 210)
	Durlak (2000)	"Physical indices such as muscle tone, cholesterol level, blood pressure; behaviors such as eating habits, exercise levels" (p.223)
	Renger et al. (2000)	"Fitness, nutrition, avoidance of harmful behavior, prevention, and early recognition." (p. 406)
	Roscoe (2009)	"The active and continuous effort to maintain the

		optimum level of physical activity and focus on nutrition, as well as self-care and maintaining healthy lifestyle choices (e.g., use of medical services, preventative health measures, abstinence from drugs and excessive alcohol use, safe sex practices)," the perception and expectation of wellness, as well as the acceptance of one's physical state (e.g., body image, disability)" (p. 219)
	Strout & Howard (2012)	"Commitment to self-care through regular participation in physical activity, healthy eating, and appropriate health care utilization." (p.197)
	Stoewen (2017)	"Caring for your body to stay healthy now and in the future" (p.182)
Intellectual wellness	Hettler (1980)	"Degree to which one engages his or her mind in creative, stimulating mental activities" (p. 78)
	Crose et al. (1992)	"Education/learning history, mental status, cognitive style/flexibility, and attitude toward learning" (p. 153)
	Csiernik (1995)	"Encompasses the realms of education, achievement, role-fulfillment, and career development" (p. 6)
	Adams et al. (1997)	"Perception of being internally energized by an optimal amount of intellectually stimulating activity" (p. 211)
	Renger et al. (2000)	"Personal growth, education/achievement, and creativity" (p. 406)
	Durlak (2000)	"Full development of cognitive talents and abilities, meta-learning (learning how to learn), and higher order thinking skills" (p. 223)
	Roscoe (2009)	"The perception of, and motivation for, one's optimal level of stimulating intellectual activity. The optimal level of activity is achieved by the continual acquisition, use, sharing, and application of knowledge in a creative and critical fashion for the personal growth of the individual and for the betterment of society" (p. 220)
	Strout & Howard (2012)	"Commitment to lifelong learning through continual acquisition of skills and knowledge" (p. 197)
	Stoewen (2017)	"Growing intellectually, maintaining curiosity about all there is to learn, valuing lifelong learning, and responding positively to intellectual challenges; expanding knowledge and skills while discovering the potential for sharing your gifts with others" (p. 182)
Spiritual wellness	Hettler (1980)	"One's ongoing involvement in seeking meaning and purpose in human existence. It includes a deep appreciation for the depth and expanse of life and natural forces that exist in the universe." (p. 78)
	Myers (1991)	"A continuing search for meaning and purpose in life;

		appreciation for depth of life, the expanse of the universe, and natural forces which operate; a personal belief system" (p. 11)
	Crose et al. (1992)	Components including "Religious/spiritual history, life satisfaction, purpose and meaning in life/beliefs about death, and attitude toward transpersonal aspects of living" (p. 153)
	Adams et al. (1998)	"A positive sense of meaning and purpose in life" (p. 167)
	Renger et al. (2000)	"Basic purpose of life, ability to give/receive love/joy/peace, pursue a fulfilling life, and helping others" (p.406)
	Roscoe (2009)	"the innate and continual process of finding meaning and purpose in life, while accepting and transcending one's place in the complex and interrelated universe" a shared connection or community with others, nature, the universe, and a higher power", and "the development of values and a personal belief system." (p. 221)
	Strout & Howard (2012)	"Acquiring purpose in life and a value system" (p. 197)
	Stoewen (2017)	"Finding purpose, value, and meaning in your life with or without organized religion; participating in activities that are consistent with your beliefs and values" (p. 182)
Psychological wellness	Adams et al. (1998)	"Perception that one will experience positive outcomes to the events and circumstances of life" (p. 167)
	Durlak (2000)	Competencies as "psychological well-being, self-efficacy, self-esteem and adaptive skills such as coping, emotional regulation, and behavioral self-control" (p. 223)
	Renger et al. (2000)	"Home/work, environmental impact on individual, individual impact on home/work environment, and interaction" (p. 406)
	Roscoe (2009)	"... focuses on the nature of an individual's reciprocal interaction with the environment (e.g., home, work, community, and nature)." (p. 221)
	Stoewen (2017)	"Understanding how your social, natural, and built environments affect your health and well-being; being aware of the unstable state of the earth and the effects of your daily habits on the physical environment; demonstrating commitment to a healthy planet" (p. 182)
Occupational /vocational	Hettler (1980)	"The satisfaction gained from one's work and the degree to which one is enriched by that work." (p. 78)

wellness	Crose et al. (1992)	Components including "Work history, vocational/avocation/leisure patterns and balance, vocational goals, and attitude toward work and leisure." (p. 153)
	Roscoe (2009)	"The extent to which one can express individual values and gain personal satisfaction and enrichment from paid and non-paid work; one's attitude toward work and ability to balance several roles; and the ways in which one can use skills and abilities to contribute to the community." (p. 221)
	Strout & Howard (2012)	"Ability to contribute unique skills to personally meaningful and rewarding paid or unpaid work." (p. 197)
	Stoewen (2017)	"Preparing for and participating in work that provides personal satisfaction and life enrichment that is consistent with your values, goals, and lifestyle; contributing your unique gifts, skills, and talents to work that is personally meaningful and rewarding." (p. 182)
Environmental wellness	Sackney, Noonan, & Miller (2000)	"Physical surroundings of a worker including air quality and lighting, safety and comfort.", "the act of making an effort, however small it may be, to affect change in one's environment." (p. 222)
	Miller & Foster (2010)	"broad dimension that considers the nature of an individual's interaction with the environment on a local, community and global level. The environment includes home, work, the community, and nature" (p. 8)
	Stoewen (2017)	• "Understanding how your social, natural, and built environments affect your health and well-being", "Being aware of the unstable state of the earth and the effects of your daily habits on the physical environment", and "Demonstrating commitment to a healthy planet" (p.862)
Financial wellness	Stoewen (2017)	"Managing your resources to live within your means, making informed financial decisions and investments, setting realistic goals, and preparing for short-term and long-term needs or emergencies; being aware that everyone's financial values, needs, and circumstances are unique" (p. 182)

APPENDIX B

12 QUESTIONS TO ASSESS WELLNESS PROGRAM STRUCTURE (Goetzel et al., 2014)

(1) What are the interventions and their component parts?
(2) Are those interventions aligned to the demographic and health status characteristics of employees and family members?
(3) How is the program delivered to employees and are the operational underpinnings reliable?
(4) What topics are covered and are they relevant to the population served?
(5) Are the interventions evidence-based?
(6) Is there coherence, consistency, and integration among the various program components?
(7) If there are incentives in place, are they appropriate to promoting health and well-being?
(8) Are sufficient resources allocated and is staffing adequate?
(9) Are organizational factors important to success integrated into the program design?
(10) Is the program a permanent, integrated feature of employee benefits?
(11) Does the program fit the "culture" of the organization?
(12) Is there an infrastructure in place to track critical measures necessary to evaluate program outcomes?

APPENDIX C

NINE QUESTIONS ASSESSING WELLNESS PROGRAM DELIVERY PROCESS

(Goetzel et al., 2014)

(1) Are the programs engaging the right people?
(2) How many participate and complete the interventions?
(3) Do participants advance in their readiness to change behaviors, and do they become more engaged in improving their health?
(4) How satisfied are they with the way the program is run and its relevance to their needs?
(5) Is the program delivered with sufficient dose or intensity to be noticed?
(6) Is fidelity high meaning that program components are delivered in a similar way across locations or business units?
(7) Do corporate and local leaderships endorse the program?
(8) Are communications and branding strategies robust and sufficiently diverse to attract the attention of different population segments?
(9) Do programs yield sustained engagement over time?