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Marilyn S. Campbell, Student

Dr Richard Ingram, Committee Chair

Dr. Sarah Wackerbarth, Director of Graduate Studies

# THE IMPACT OF COVID-19 ON WORKSITE WELLNESS PROGRAMS

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## CAPSTONE

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A capstone project submitted in partial fulfillment of the requirements for the degree of Master of Public Health in the College of Public Health at the University of Kentucky

By  
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Date of Final Examination: November 10, 2020

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Lexington, KY  
2020

## ABSTRACT

### THE IMPACT OF COVID-19 ON WORKSITE WELLNESS PROGRAMS

*Introduction:* Worksite wellness programs are popular employer offerings as of the last few decades. The COVID-19 pandemic has caused major shifts in behavior since these programs have been implemented. The purpose of this study was to see how the pandemic has affected various offerings within a university worksite wellness program.

*Methods:* This study is a secondary analysis of a university worksite wellness program, and it compares participation in the various offerings in response to the COVID-19 pandemic by evaluating 2019 participation (pre-pandemic) to 2020 participation (including onset of the pandemic and after). This worksite wellness program, which is available to employees at the University of Kentucky (Lexington, KY, USA) and individuals on the university-sponsored health insurance programs, included approximately 40,000 eligible individuals per year in 2019 and 2020. The main outcome measures include participation in the three arms (MoveWell, EatWell, and BeWell) of this university worksite wellness program.

*Results:* Participation in the MoveWell and EatWell arms decreased after the onset of the pandemic in Kentucky (-33.6% and -32.1%, respectively), but participation in the BeWell arm increased (+41.8%). The most dramatic increase in participation that occurred was through BeWell's health coaching, which increased by +76.1% when compared to the same time frame in 2020.

*Conclusions:* Although participation was reduced in the MoveWell and EatWell arms of this worksite wellness program, individuals were still participating in these programs,

which is noteworthy in a pandemic. BeWell program participation increased during the pandemic and is a suggested point of focus for employers.

## ACKNOWLEDGEMENTS

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## TABLE OF CONTENTS

THE IMPACT OF COVID-19 ON WORKSITE WELLNESS PROGRAMS .....	iii
ABSTRACT.....	iv
ACKNOWLEDGEMENTS.....	vi
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	viii
LIST OF FIGURES .....	ix
INTRODUCTION .....	1
ABBREVIATIONS .....	4
METHODS .....	5
<i>Study sample</i> .....	5
<i>Measures</i> .....	5
<i>Statistical Analysis</i> .....	8
RESULTS .....	9
DISCUSSION.....	15
CONCLUSIONS.....	20
REFERENCES .....	21
BIOGRAPHICAL SKETCH .....	23

LIST OF TABLES

Table 1. Participation in the University of Kentucky’s Health and Wellness Program  
based on eligibility status.....12



## LIST OF FIGURES

Figure 1. Participation in BeWell single visit, one-on-one consults in 2019 and 2020.....	13
Figure 2. Participation in BeWell ongoing health coaching in 2019 and 2020 .....	14

## INTRODUCTION

Worksite wellness programs have become increasingly popular in the United States in the last 35 years, as they attempt to improve employee health and reduce the rising health care costs that employers take on to insure health conditions that are costly and often preventable.<sup>1</sup> Employers report that their motivations to offer worksite wellness programs include: improving employee health, controlling health care costs, increasing productivity, decreasing absenteeism, reducing turnover rates, attracting top candidates, improving job satisfaction, and recruiting and retaining employees.<sup>2</sup> Worksite wellness programs are a common employee benefit provided in the workplace<sup>3,4</sup> due to well-documented improvements in employee health,<sup>5</sup> absenteeism,<sup>6</sup> presenteeism,<sup>7</sup> and return on investment.<sup>6,8</sup> For example, an analysis of companies integrating the American Heart Association's newly launched Worksite Health Achievement Index indicated lower CVD risk factors in four out of seven categories (hypertension, high cholesterol, tobacco use, and physical inactivity) among employees participating in these programs.<sup>5</sup> Also, in cardiac patients engaged in a six-month worksite wellness intervention, 57% of "high-risk" patients were effectively shifted to "low-risk", and annual claims costs in the intervention group were reduced 48% in the year following the intervention when compared to the control group.<sup>4</sup> Additionally, previous work has suggested that the return on investment of worksite wellness programs makes them a strategic imperative for businesses.<sup>6,8</sup> Previous investigations have indicated that for every dollar spent on employee wellness, an average of \$3.27 in medical costs was saved and an additional \$2.73 was saved in absenteeism.<sup>6</sup>

The changing climate due to the COVID-19 pandemic, where many employees are spending less time in the workplace, is likely changing participation in worksite wellness programs. Furthermore, the wellness needs of employees are not likely the same as they were during pre-pandemic times, and the well-being of individuals has become a topic of great interest and is critically important at this time.<sup>9</sup> To respond to the changing needs and adapted lifestyles of their employees, many worksite wellness programs may need to adjust their program offerings to support their employees.

The primary objective of this study was to evaluate how participation in an ongoing University-based worksite wellness program changed during the COVID-19 pandemic by looking at representative programs in the MoveWell, EatWell, and BeWell arms of UK's Health and Wellness Program. MoveWell focuses on increasing physical activity and includes various optional programs such as: group fitness classes (associated fee), exercise consultations, gym membership (associated fee), gym-based exercise prescriptions, and step competitions. EatWell aims to improve nutritional habits and includes the following optional programs: EatWell Membership, nutrition consultations, cooking classes, grocery store tours, and the Community Supported Agriculture program (associated fee). BeWell directs individuals to improve various aspects of well-being, including cultivating positivity, connecting with personal strengths and meaning, improving resiliency, achieving any number of well-being focused goals, nourishing positive relationships, reducing stress, enhancing mindfulness, and encouraging tobacco cessation. Optional programs offered through the BeWell arm include: health coaching (ongoing), single visit consultations with a health coach, BeWell Practice Group, chair

massages, KORU mindfulness, Mindfulness-Based Stress Reduction workshops, tobacco cessation coaching, and a podcast-based Well-being Web Series. In addition to these offerings in the three arms of UK Health and Wellness, a LiveWell Check-in (LWCI) is offered on a rotating basis every two years to eligible participants. The LWCI is a biometric screening that looks at various health measures and is one of the most widely attended Health and Wellness programs. In the fall semester of 2018, UK employees working on campus and/or in Lexington (the majority of eligible participants) as well as new on-campus employees hired by December 7, 2018 were eligible for LWCIs. In the spring semester of 2019, new on-campus employees hired on or after December 10, 2018, extension employees, HealthCare employees outside of Lexington, retirees, retiree spouses, and affiliate programs were eligible for LWCIs. In the fall semester of 2019, employee spouses and sponsored dependents were eligible for LWCIs. A new cycle of LWCIs would have begun in the fall semester of 2020, but these are currently unavailable due to the COVID-19 pandemic. In response to the COVID-19 pandemic, we hypothesized that participation in programs focused on physical activity and nutrition had decreased with a concomitant increase in participation among programs focused on well-being.

## ABBREVIATIONS

ARMS = Accounts Receivable Management Services

COVID-19 = Coronavirus Disease of 2019

ESH = Eastern State Hospital

FY = Fiscal Year

KCTCS = Kentucky Community and Technical College Systems

LWCI = LiveWell Check-in

SD = Standard Deviation

UK = University of Kentucky

## METHODS

UK's worksite wellness participation data were de-identified by the Health and Wellness Program for analysis by the research team. Data were collected for January-December 2019 (pre-pandemic time frame) and for a corresponding time frame in 2020 up to the available month of September (capturing the onset of the pandemic). This study was approved by the University's Institutional Review Board, and the need for informed consent was waived.

### *Study sample*

The Health and Wellness program is available to all employees at UK (approximately 23,000 individuals in 2019 and 2020) and also select groups that are on UK health plans, including affiliate group employees (Kentucky Community and Technical College System (KCTCS), Accounts Receivable Management Services (ARMS), Eastern State Hospital (ESH)), employee spouses, employee sponsored dependents, retirees, retiree spouses, and retiree sponsored dependents (approximately 40,000 total eligible individuals). Participation in programming varies throughout the year in the MoveWell, EatWell, and BeWell arms, with January typically being one of the highest months of participation, and both November and December being the lowest months of participation.

### *Measures*

To represent the University's three-armed Health and Wellness Program (MoveWell, EatWell, and BeWell), two programs were selected from each arm to capture: (1)

participation in one-time visit consultations and (2) participation in ongoing support offered through each arm of wellness. Each arm (MoveWell, EatWell, and BeWell) of the University's Health and Wellness Program offers single visit, one-on-one consultations with credentialed professionals in the field (a fitness specialist, dietitian, and health coach, respectively), but one ongoing program was also selected in each arm that represented participation for ongoing support in that arm. Programs were selected that were not interrupted during the pandemic and that did not offer material incentives for participation, as incentives create varying participation patterns that might not be comparable among programs.<sup>10,11</sup>

To represent the MoveWell arm of the Health and Wellness Program, one-on-one, single visit exercise consultations with a fitness specialist and group fitness classes were selected. Prior to the pandemic, these one-on-one consultations were offered in-person, on the phone, and via e-mail, although most employees opted for in-person visits. After the onset of the pandemic and the tightening of restrictions in Kentucky and on campus (March 2020), these consultations shifted to virtual only options (on the phone and via e-mail), and a Zoom conferencing option was added. In-person consultations with a fitness specialist were offered again beginning in August 2020. Group fitness classes were offered in-person on campus during the lunchtime and typical after work hours through March 16, 2020, when all in-person group fitness classes were cancelled and virtual group fitness classes were created to accommodate typical home equipment and resources, with expanded class time offerings of early mornings as well as lunchtime and typical after work hours. On August 10, 2020, in-person group fitness classes were

reinstated, with fewer class offerings and more restrictions to accommodate physical distancing, but virtual fitness classes were maintained. It is worth noting that participation in group fitness classes requires a \$7/month fee, which includes access to two on-site campus gym facilities for faculty and staff.

The programs offered through the EatWell arm of the Health and Wellness program are represented by one-on-one, single visit nutrition consultations with a dietitian and EatWell Membership. The one-on-one nutrition consultations were offered in-person, on the phone, and via e-mail before the onset of the pandemic, with in-person visits being the most popular offering. These consultations switched from in-person to virtual options (phone and e-mail) in March 2020, with the new possibility of a Zoom conferencing option. One-on-one nutrition consultations have remained virtual. EatWell Membership, a program offered in 10-week cycles (although those who have completed a 10-week cycle can remain in the program indefinitely), facilitates an ongoing relationship with dietitians that are building a community around living a healthy lifestyle regarding nutrition and well-being while managing weight safely. Before the onset of the pandemic, an in-person option and an online platform for the program were offered. Only the online platform has been offered since April 2020.

BeWell programming is represented by one-on-one, single visit consultations with a health coach and ongoing health coaching. Preceding the COVID-19 pandemic, one-on-one consultations were offered with a health coach in-person, over the phone, via e-mail, or via Zoom. In March 2020, all one-on-one consultations switched to over the phone, via



e-mail, or via Zoom and have remained virtual. Ongoing health coaching is a program offering eight 30-45-minute one-on-one sessions with a certified health coach to help individuals build capacity for greater well-being in areas including stress reduction, positivity, strengths, meaning, resiliency, goals, relationships, and mindfulness.

### *Statistical Analysis*

All analyses were conducted in October 2020 for the data set, which included data from January 2019-September 2020. The first COVID-19 case in Kentucky was confirmed on March 6, 2020, so March-September 2020 were used as the timeframe to represent the period after the onset of the COVID-19 pandemic. To determine percent change in participation, each month from March 2020-September 2020 was compared to the same respective month in 2019 using the following formula: % Change =  $((\text{Month in 2020} - \text{Month in 2019}) / \text{Month in 2019}) \times 100$ . Means are reported  $\pm$  standard deviation.

## RESULTS

Participation in UK's Health and Wellness Program based on eligibility status is depicted in Table 1 according to the tracking cycles of Fiscal Year 2018-2019 (July 1, 2018-June 30, 2019) and Fiscal Year 2019-2020 (July 1, 2019-June 30, 2020). In all, 10,335 participants (44.96% of eligible participants) were engaged in at least one offering from UK Health and Wellness in Fiscal Year 2018-2019, while 7,175 participants (31.08% of eligible participants) were engaged in at least one offering in Fiscal Year 2019-2020. The difference in engagement between Fiscal Year 2018-2019 and Fiscal Year 2019-2020 can largely be explained by the 4,110 individuals who only participated in the LWCI. Due to the two-year cycles of offering LWCI, that number was significantly reduced based on eligible individuals in Fiscal Year 2019-2020, with 598 participants engaging in the LWCI only.

MoveWell programs typically have the largest engagement out of the three arms. Additionally, MoveWell had the greatest reductions in participation following the onset of the pandemic when compared to the same time frame in 2019, with an overall reduction of  $-33.6 \pm 25.9\%$ . One-on-one consultations were reduced by  $-49.7 \pm 25.7\%$  relative to 2019, seeing the largest reductions in April 2020 and August 2020 ( $-75.0\%$ ). Group fitness class participation was reduced by  $-22.4 \pm 18.9\%$  overall, with an unexpected increase of  $+13.7\%$  in April 2020 compared to 2019, but the largest reduction of  $-47.8\%$  relative to 2019 occurring the month prior, March 2020. Since April 2020, all other months have reflected a decrease in participation relative to 2019, but to a smaller degree than was seen in March 2020.

The programs offered through the EatWell arm have the next largest numbers for participation out of the three arms. EatWell programs, likewise, saw reductions in participation after the onset of the pandemic, amounting to an overall decrease of  $-32.1 \pm 26.5\%$  in EatWell programs. This included an average reduction of  $-46.6 \pm 25.2\%$  in one-on-one consultations, with the greatest reduction occurring in April 2020 ( $-89.3\%$  relative to April 2019). EatWell Memberships reflected smaller reductions in participation, with an overall decrease of  $-17.5 \pm 20.0\%$ . There was an unexpected increase in March 2020 of  $+10.5\%$ ,  $0\%$  change in June 2020, and the largest decrease of  $-40.9\%$  in May 2020 relative to the same months in 2019. All other months have revealed a reduction, but to a smaller degree, in participation in 2020 when compared to the same month in 2019.

BeWell programs have historically had the lowest amount of participation of the three arms. Interestingly, BeWell was the only arm that saw consistent increases in program participation in 2020, with an overall increase of  $+41.8 \pm 89.5\%$ , indicating significant variation, primarily due to low numbers of engagement. The one-on-one BeWell consults showed the greatest amount of variability after the onset of the pandemic, indicating an overall increase of  $+7.4 \pm 76.9\%$  relative to 2019, but a significant range from a  $-75.0\%$  reduction in May 2020 to an augmentation of  $+125.0\%$  in March 2020 (Figure 1).

Ongoing health coaching saw an overall increase of  $+76.1 \pm 93.1\%$  relative to the same time frame in 2020 (Figure 2). Since the onset of the pandemic, most months have demonstrated an increase in participation relative to 2019, with the largest increase of  $250.0\%$  occurring in April 2020. However, two months showed reductions in

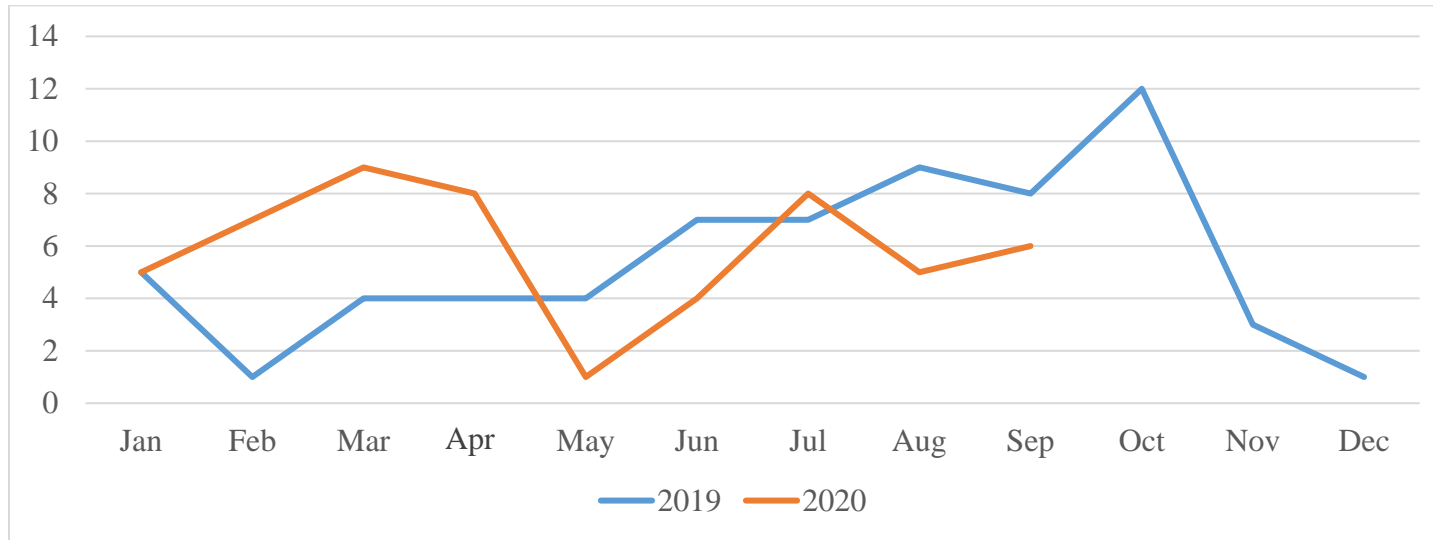
participation relative to 2019, and those months were March 2020 (-35.3%) and August 2020 (-18.2%).

**Table 1: Participation in the University of Kentucky’s Health and Wellness Program based on eligibility status.**

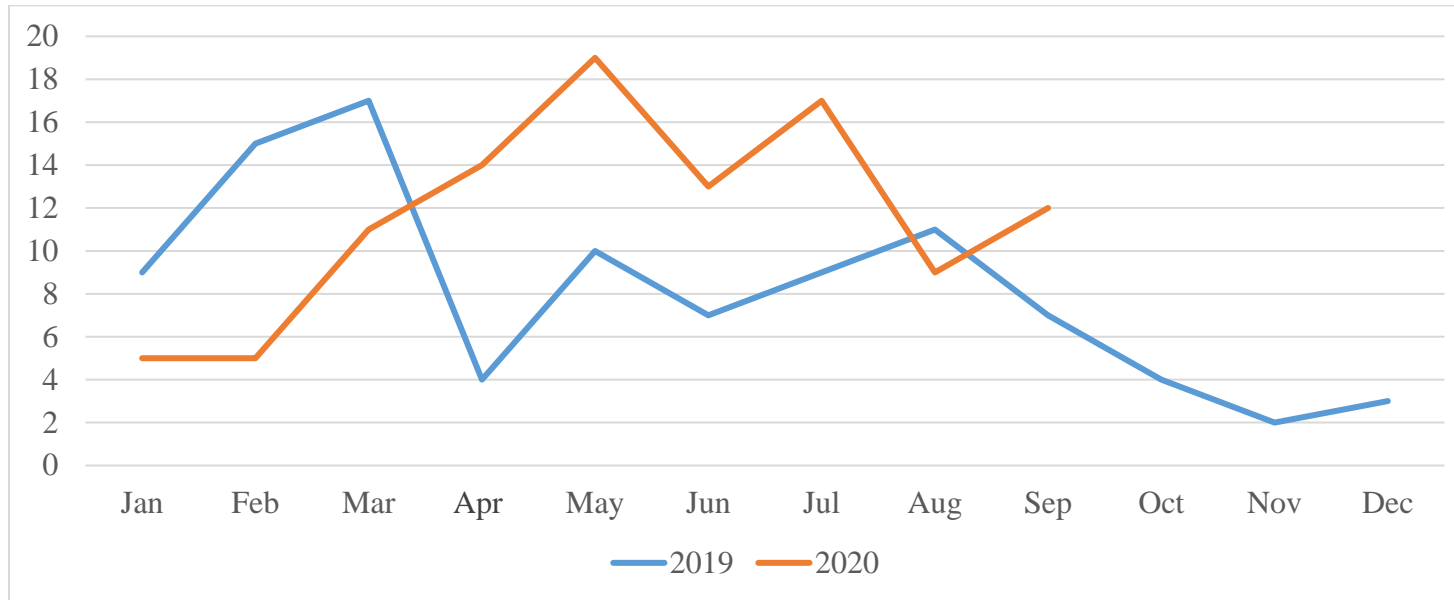
	FY18-19 Participation	FY18-19 Total Eligible	FY19-20 Participation	FY19-20 Total Eligible
<b>Eligibility status</b>				
Employees	10,335	22,989	7,175	23,085
Affiliate group employees (KCTCS, ARMS, ESH)	211	1,170	87	1,201
Employee spouses and employees' sponsored dependents	549	11,040	1,169	11,378
Retirees, retiree spouses, and retirees' sponsored dependents	482	4,602	180	4,831
All	11,577	39,801	8,611	40,495
<b>Participation by Number of Programs</b>				
One Health and Wellness service	7,160	11,577	5,184	8,611
Two Health and Wellness services	2,864	11,577	2,417	8,611
Three or more Health and Wellness services	1,553	11,577	1,010	8,611

ARMS = Accounts Receivable Management Services; ESH = Eastern State Hospital; FY = Fiscal Year; KCTCS = Kentucky Community & Technical College System

**Figure 1: Participation in BeWell single visit, one-on-one consults in 2019 and 2020.**



**Figure 2: Participation in BeWell ongoing health coaching in 2019 and 2020.**



## DISCUSSION

In this analysis of the impacts of COVID-19 on worksite wellness programs, an overall decrease in participation in physical activity and nutrition-based programs was observed with a concomitant increase in overall participation in programs focused on well-being, confirming our hypothesis. Considerable variation in participation was observed in the programs, although care was taken to compare participation to the same time period in the previous year due to known seasonal changes. The variation present in the different Health and Wellness opportunities suggests that people are engaging with various areas of health in differential patterns throughout the pandemic. Our results suggest that employees may value well-being as a more important facet of their own health than previously and are more willing to engage in worksite wellness opportunities to address it. Nevertheless, the fact that individuals are participating and engaging with any of these programs, even if participation is reduced, is important. Given that the demand is still there, we believe it is important for employers to be offering these programs to address various aspects of individual health, and perhaps it is even more important at this time to be offering them than previously due to various indicators of decreased health in the midst of the global pandemic.<sup>9,12-14</sup>

Compared to 2019, individuals are prioritizing physical activity and nutrition opportunities offered through worksite wellness programs less, but there have been some unexpected patterns of participation, where shortly after the pandemic onset (April 2020), group fitness classes saw a major uptick in participation. It is possible that the new virtual offerings were enticing and more easily available while many individuals were working



from home, but after the first month, these classes seemed to have lost some appeal. Even after in-person classes were added back in with these virtual group fitness opportunities, participation remains relatively low for this season. Likewise, EatWell Membership had increased participation during the pandemic onset (March 2020), but participation in the two months that followed indicated the largest decrease. Participation remains moderately lower than the same time last year but to a lesser degree than those initial months. One-on one consultations have taken larger dips in participation than the ongoing program offerings. At the same time, a worldwide survey indicated that individuals globally are decreasing physical activity, primarily due to increased sedentary time, and are making more unhealthy dietary decisions, including choosing less healthy options, engaging in more binge eating, and adding additional snacks between meals (despite decreased binge drinking).<sup>13</sup> Comfort eating is a commonly used mechanism to deal with stress and anxiety, and this behavior is associated with lockdown practices.<sup>15</sup> Given these negative shifts in health behaviors that are occurring in response to the pandemic, worksite wellness programs could help to meet some of the needs that individuals have during this time.

There are benefits to addressing each of the areas of health that are offered through UK's worksite wellness program in the prevention and long-term risk of COVID-19. In particular, enhancing physical activity can improve the innate immune response and help counteract co-morbidities such as obesity, diabetes, and heart conditions.<sup>16</sup> Beyond that, physical activity has a profound effect on emotional and mental status, which are of primary concern during this pandemic, as reports indicate considerable psychological

distress and necessity for behavioral health interventions.<sup>17,18</sup> One study indicated that even a perceived reduction in physical activity and/or exercise during the pandemic has led to increased stress levels and heightened anxiety levels.<sup>14</sup> Furthermore, individuals incorporating vigorous physical activity during the pandemic had improved emotional states compared to those with light physical activity.<sup>19</sup> Likewise, nutritional habits can have a profound impact on immunity due to their regulation in cell signaling and gene expression as well as their effects on the gut microbiome. Specifically, emerging evidence has suggested that Vitamin D inadequacy may be a risk factor of interest for COVID-19.<sup>20</sup> Beyond that, the immune system, in general, may be compromised without adequate supply of total energy, protein, iron, zinc, Vitamin A, Vitamin E, Vitamin B6, and Vitamin B12.<sup>21</sup> Therefore, the support offered by worksite wellness programs to improve physical activity and nutrition habits may provide an avenue to reduce risk and improve immune response to defend against the COVID-19 pandemic.

This study addresses an emerging topic, as the COVID-19 pandemic is influencing all areas of life. Currently, there is a gap in the literature regarding how worksite wellness programs are affected by this global shift and how employers offering these programs can respond to the changing needs of their employees during this time. When viewed in the context of the increased and changing demands added to the schedules of various individuals affected by the pandemic, it is interesting and noteworthy that BeWell participation, addressing various aspects of well-being, is increasing relative to the same time last year. Given that nutritional and physical activity habits are changing and increasing the stress and anxiety of individuals, the fact that people are not engaging

more with the MoveWell or EatWell arms could be contributing to the higher perceived needs for BeWell services, which include stress reduction.<sup>19</sup> Additionally, stress and anxiety commonly lead to sleep disruption,<sup>12</sup> shaking the foundational needs at the most basic level of “immediate physiology needs” presented in Maslow’s famous Hierarchy of Needs.<sup>22</sup> In his theory, Maslow states that individuals who are unable to meet this lowest level of immediate physiological needs are at a disadvantage in attending to higher level needs.<sup>22</sup> Given the ongoing, indefinite threat to the most fundamental needs, individuals may be seeking out ways to rectify aspects of well-being that were not previously threatened pre-pandemic.<sup>15</sup> Physical activity could present a valuable resource to attend to some of the stress and anxiety brought on by the current pandemic,<sup>15</sup> and perhaps the connection between well-being and physical activity can be made clearer throughout these worksite wellness offerings to increase engagement in both. Given our findings herein, we suggest that, while participation may be reduced in worksite wellness programs, employers should offer various programs to address multiple aspects of health in the midst of a global pandemic, but we suggest more robust offerings attending to the well-being of employees to meet their altered needs during the pandemic. Well-being, stress and anxiety are known to have a tremendous influence on immune response, and worksite wellness programs could help meet this need during the global pandemic.<sup>23,24</sup>

### *Limitations*

Some limitations exist with the current study. A primary limitation that exists is that the university’s worksite wellness program was principally set up as a service to employees rather than as a randomized controlled experiment, and this study represents a secondary

analysis of the program. Thus, the design of the program was not intended to reduce all potential confounding variables, and the voluntary nature of program participation contributes to selection bias. Additionally, confounders are often present in longitudinal data sets like these that could be impacting participation, such as weather, new employees, and changes in programs over time. Finally, we have minimal demographic information due to privacy regulations protecting the individuals who participate in these worksite wellness programs, and demographics are known to affect participation in these programs.<sup>25</sup>

## CONCLUSIONS

This study helps to describe the changes occurring in participation in various worksite wellness offerings in a university-based worksite wellness program. The analyses contained herein indicate that participants are less likely to engage in programs aimed at physical activity and nutrition after the onset of a pandemic but are more likely to engage in programs aimed at overall well-being. Nevertheless, individuals are still engaging in all programs, which provides rationale to continue offering them. Such information could be used by employers to target programs and shift offerings to reflect the needs of individuals during a widespread global pandemic.

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