International Journal of Evidence Based Coaching and Mentoring
2023, Vol. 21(2), pp.195-210. DOI: 10.24384/30pq-5g57

Academic Paper

Positive Psychology Intervention Supporting Health and Wellness Coach Well-being during COVID-19: Feasibility and Preliminary Effectiveness

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Abstract

This pre-post exploratory feasibility study examined a 6-week, multifaceted, self-guided positive psychology intervention to support the well-being of health and wellness coaches during the COVID-19 pandemic. Nearly 40% of 634 participants completed the post-intervention survey, using the interventions on 60% of possible days, a majority finding the intervention helpful or very helpful. Regressions demonstrated improvements post-intervention in anxiety, depression, and life satisfaction for participants whose initial scores were not optimal. The intervention appears well-received, feasible, and supportive of coach well-being. Future research might find this cost-effective, flexible, and convenient intervention useful in supporting well-being more broadly, including during future health crises.

Keywords

COVID-19, pandemic, health and wellness coach, coach, self-directed intervention, positive psychology, feasibility, clinical trial

Article history

Accepted for publication: 11 July 2023
Published online: 01 August 2023

Introduction

The global COVID-19 pandemic presented major political, social, economic and healthcare challenges, as well as additional personal challenges and cumulative stressors including: social isolation, fear of getting sick, contracting COVID-19, loss of family or friends, work-life changes, and more (e.g., Ben-Ezra, Hou and Goodwin, 2021; Thakur & Jain, 2020). Over a year into the

pandemic, we had made adjustments but even after two years, the cumulative stress had taken a mental health toll on many.

COVID-19 vaccines were just becoming available at the time of this study (early 2021). Still, during the period from March 17 to 29, 2021, 30.1% of adults in the U.S. met screening criteria for an anxiety disorder and 24.7% met criteria for a depressive disorder; overall, 35% met criteria for anxiety or depression (CDC, 2022), a notable increase in comparison with similar data collected prior to the pandemic. Dubey, Biswas, Ghosh, Chatterjee, Dubey, Chatterjee and Lavie (2020) examined the psychosocial impact of COVID-19 on many groups, arguing the need for improved mental health supports.

Individuals in the helping professions, including coaches, were not immune to mental health challenges posed by the pandemic and, indeed, may have faced additional stress due to caregiving roles. We wanted to both support coaches and explore the feasibility of a positive psychology approach to providing support for well-being during the COVID-19 pandemic. For the present study, we explore the feasibility and preliminary impact of a simple but multi-pronged, supportive positive psychology intervention for health and wellness coaches during COVID-19.

The guiding research question for the study is: What are the feasibility and preliminary effectiveness of a 6-week, multifaceted, self-guided positive psychology intervention offered in support of health and wellness coach well-being during the COVID-19 pandemic?

Literature Review

Pandemic Impact on the Health and Wellness Coaching Profession

Individuals in helping professions were called on to support others throughout the pandemic, and coaches, including health and wellness coaches (HWC), were no exception. According to a report of the International Coaching Federation (ICF) (2020a), a year into the pandemic, its impact on coaches was significant:

> *Almost one in two (49%) said they had experienced reduced income while 37% said their hours had been reduced. Just one in three coach practitioners (34%) said they had not experienced adverse effects from the pandemic on their income and employment.* (p. 6)

> (Also) *25% said they had experienced a significant negative (business) impact with a further 40% reporting a limited negative impact. Only one in 10 said there had been no impact….* (p. 9)

While coach personal stress was not examined directly in this ICF survey, its impact may be inferred from the negative business impact coaches reported. Additionally, while coaches in many different specialties had been having conversations about the personal and professional challenges they were facing (e.g., Institute of Coaching, Dally, T., personal communication, July 21, 2020; JST Coaching and Training, Sleeper-Triplett, J., personal communication, April 20, 2020), and online resources were available to support coaches during the pandemic (e.g., by ICF, 2020b), no research was identified that explored how to support coaches during the COVID-19 pandemic.

Positive Psychology Interventions (PPI)

Until recently, most psychological research has focused on deficiencies or illnesses and how to overcome negative emotions, such as stress, anger, fear, and sadness (Kauffman, 2006). Positive psychology, a newer, applied theoretical construct, focuses, instead, on positive emotions,

strengths, and functioning as ways to build personal resources and support human flourishing (Seligman and Csikszentmihalyi, 2000; Oades, Steger, Delle Fave and Passmore, 2017).

According to Passmore and Evans-Krimme (2021), "A vast number of PPI's (positive psychology interventions) have been developed and validated" (p. 2, citing Donaldson, Dollwet and Rao, 2015). In fact, a meta-analysis of randomised controlled trials of PPI, the majority (26 of 39) of which were self-help interventions, found that PPI can significantly enhance subjective and psychological well-being and reduce symptoms of depression with a small to moderate effect size (Bolier, Haverman, Westerhof, Riper, Smit and Bohlmeijer, 2013) and with effects on well-being partly sustained over time. Sin and Lyubomirsky's (2009) meta-analysis had similar findings. Additionally, the use of multiple PPI in combination has been shown to have benefit (Antoine, Congard, Andreotti, Dauvier, Illy and Poinsot, 2018).

PPI and the Pandemic

Waters, Algoe, Dutton, Emmons, Fredrickson, Heaphy, Moskowitz, Neff, Niemiec, Pury and Steger (2021) suggest that positive psychology interventions can "buffer, bolster and build mental health", even during the pandemic (p. 1). Moskowitz, Addington, Kamsickas, Grote, Leong and Cheung (2021) explored the use of a 5-week, self-guided positive emotion skills intervention as a means of helping individuals maintain emotional well-being in the face of the stresses of the ongoing COVID-19 pandemic. Study participants experienced statistically significant reductions in anxiety, depression, and social isolation as well as significantly increased positive affect, meaning, and purpose.

Early in the COVID -19 pandemic, an article was published in the Greater Good Science Center online newsletter, *Greater Good,* titled "Six daily questions to ask yourself in quarantine" (Anderson, 2020). The mission of *Greater Good* is to translate cutting-edge scientific research into usable strategies applicable to daily life of busy individuals, including health care professionals (The Greater Good Science Center, 2023). The Anderson article applied several key positive psychology principles, in a very practical, easy to implement approach of asking oneself six questions a day to promote positive coping during the pandemic:

- What am I grateful for today?
- Who am I checking in on or connecting with today?
- What expectations of "normal" am I letting go of today?
- How am I getting outside today?
- How am I moving my body today?
- What beauty am I either creating, cultivating, or inviting in today?

Extensive research evidence supports each of these intervention areas, for example: gratitude (Alkozei, Smith and Killgore, 2018); social connection (Feeney and Collins, 2014); nature (White, Alcock, Grellier, Wheeler, Hartig, Warber, Bone, Depledge and Fleming, 2019); movement (Mandolesi, Polverino, Montuori, Foti, Ferraioli, Sorrentino and Sorrentino, 2018); and beauty (Proyer, Gander, Wellenzohn and Ruch, 2016). Additionally, Anderson reported anecdotally, that as of the writing of the article, her previous posting of the questions on social media had resulted in "thousands of people who said that these resonated for them" (Anderson, 2020, para 1).

This seemingly simple intervention, clearly explained in the easy-to-read *Greater Good* article, seemed to have potential for supporting wellbeing, even as the pandemic continued. We saw this as an easy-to-implement, cost-effective multi-pronged PPI that had potential to support health and wellness coaches during COVID-19. If feasible and effective, it could easily be shared with other populations.

Methods

The IRB at the Maryland University of Integrative Health approved this pre-post exploratory feasibility study, utilising online surveys and a 6-week, self-guided, multifaceted positive psychology intervention, based on the Anderson (2020) article, to support credentialed health and wellness coaches during the COVID-19 pandemic. HWCs were recruited by email through the National Board for Health and Wellness Coaching (NBHWC). HWC inclusion criteria for this study were: age 18 years or older; residing in the United States; with the ability to read English. There were no exclusion criteria.

Intervention

The study intervention was a multi-pronged positive psychology intervention. It consisted of reading the *Greater Good* article "Six daily questions to ask yourself in quarantine" (Anderson, 2020), described above, as background, an invitation to participate daily in five of the positive psychology activities described in the article (those related to gratitude, connection, the outdoors, movement and beauty), and completing brief daily online surveys related to those activities.

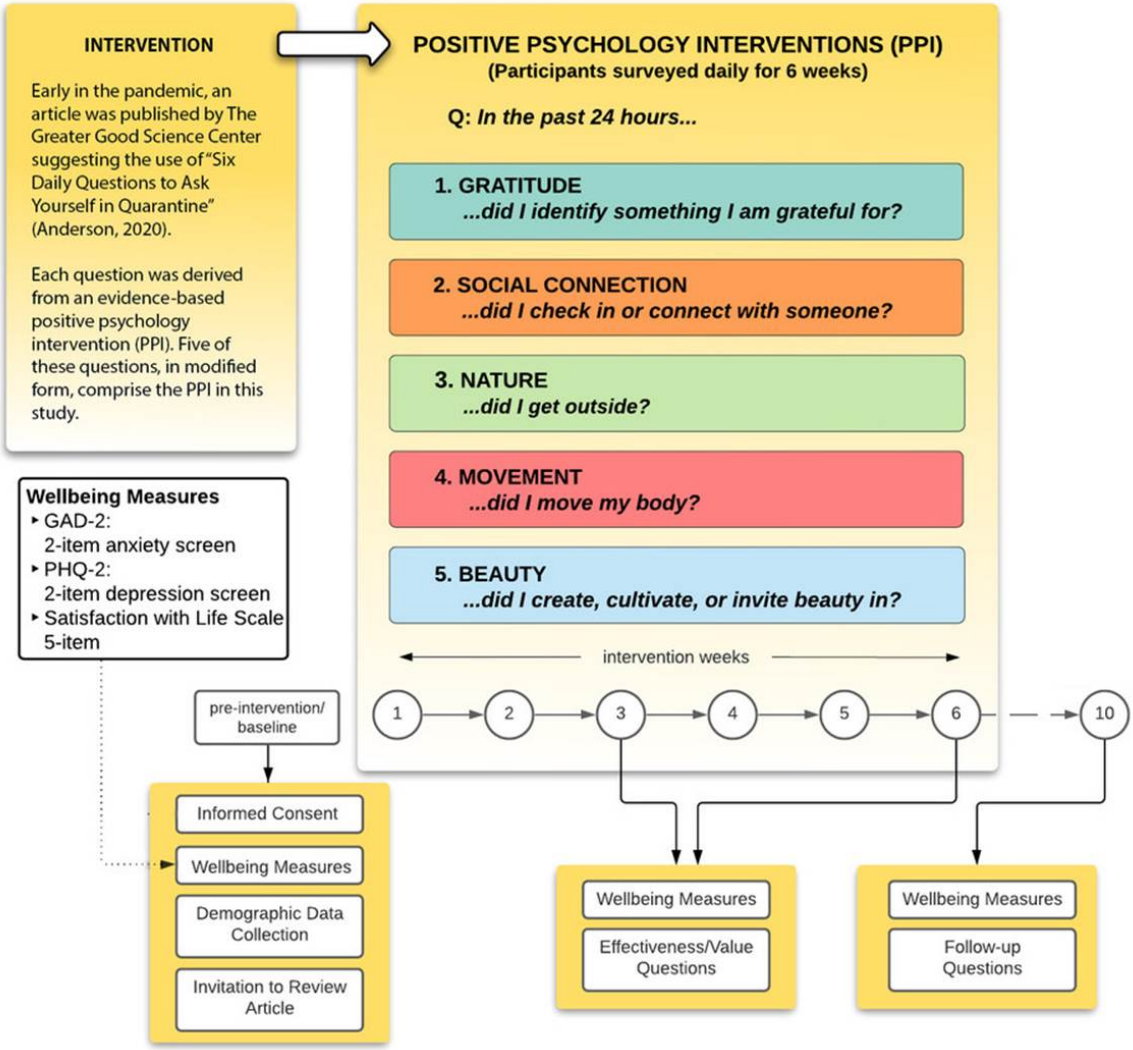
Outcome Measures

Well-being can be conceptualised broadly to include multiple domains (Huber, van Vliet, Giezenberg, Winkens, Heerkens, Dagnelie and Knottnerus, 2016). For this study, well-being was conceptualised as a combination of mental health (anxiety and depression) and life satisfaction. Anxiety was measured using the Generalized Anxiety Disorder, 2-item scale (GAD-2) (Plummer, Manea, Trepel and McMillan, 2016) which is used for case finding in both the UK and the US and, at a cut-off score of 3, has a pooled sensitivity of 0.76 and a pooled specificity of 0.81 compared to the gold-standard clinical interview (Plummer et al., 2016). Depression was measured using the Patient Health Questionnaire, 2-item scale (PHQ-2) (Kroenke, Spitzer and Williams, 2003), which at a cut-off score of 3 demonstrated a sensitivity of 83% and a specificity of 92% for major depressive disorder compared to a clinical interview. Life satisfaction was measured using the Satisfaction with Life Scale (Diener, Emmons, Larsen and Griffin, 1985), which has high internal consistency, temporal reliability, moderate-high correlations with other measures of wellbeing and interviewer estimates of life satisfaction (Diener et al., 1985). All three validated measures have been widely used and have sound psychometric properties (e.g., GAD-2 (Plummer et al., 2016); PHQ-2 (Kroneke et al., 2003); Satisfaction with Life Scale (Diener et al., 1985).

Study Design

The study design is illustrated in Figure 1. The initial pre-intervention questionnaire included demographic questions as follows: age, gender, education level, household composition, years of coaching, employment status, location of work and a question related to status as a pandemic "essential worker". The pre-intervention questionnaire also included the three well-being measures (GAD-2, PHQ-2, and Satisfaction with Life Scale). These measures were repeated at mid-intervention (week 3), post-intervention (week 6), and a four-week follow up (week 10). The week three, six and ten surveys included several additional qualitative and quantitative questions related to both potential confounders and aspects of feasibility: these explored both the impact of COVID-19 on participant personal and professional lives and their satisfaction, plans for continued use, and experience with the intervention. A daily survey was designed to explore the frequency of use of the PPI. It consisted of five questions, each asking if participants had completed one of the five specific positive psychology interventions in the prior 24 hours.

Figure 1. Overview of Study Design



Data Management

All surveys were developed in MS forms and managed in a private HIPAA compliant Sharepoint site. Only the data manager (MM) had access to the raw, identifiable data from these forms. Data was de-identified, and review and clean-up were completed using R. Only the de-identified data was shared with the statistician (MO) and other members of the research team (EA, MS, and SL).

Statistical Analysis

Views of acceptable response rates appear to vary widely (Keller, 2014). Since a response rate of at least 50% is considered adequate for analysis and reporting to minimise bias (Howard, Toonstra, Meade, Whale Conley and Mattacola, 2016, citing Babbie (1990), we chose this as the cut-off for the response rate at 6 weeks to demonstrate one measure of feasibility of the intervention.

Bowen, Kreuter, Spring, Cofta-Woerpel, Linna, Weiner and Fernandez (2009) indicate that a range of approaches and measurements can be used to explore feasibility of an intervention. We explored actual use of the intervention, degree of execution, satisfaction, intent to continue to use, positive effects (preliminary effectiveness), sustainability, and maintenance of changes over time.

All statistical analysis was completed in R. We examined a number of feasibility measures using descriptive statistics. Effects of the intervention on outcome measures, and maintenance of change, were explored using Akaike information criterion (AIC) statistical model comparisons (Anderson, Burnham and Thompson, 2000) and regression analyses. The best-fit models used initial scores on a measure (GAD-2, PHQ-2, or Satisfaction with Life) as a control variable in analysis of the related variable (anxiety, depression, or satisfaction with life, respectively).

Qualitative Analysis

In an open-ended question in the week three, six and ten surveys, participants were asked to provide feedback about the study and/or factors that might impact their results. Three researchers (EA, SL, MS) reviewed this qualitative data and, through an iterative process of four rounds of thematic analysis, accompanied by discussion, identified key themes and sub-themes. Software was not used in this process.

Results

Recruitment emails were sent to 4257 NBHWC-credentialed health and wellness coaches, yielding 668 study participants respondents, of which 34 were excluded (see Flow Diagram, Figure 2). Of these, 54.1% completed the week three survey; 39.1% completed the week six survey; and 31.1% completed the week ten follow-up. Of those completing the full six weeks of the intervention, 79.3% completed the week ten survey.

Demographics

Table 1 provides demographic data for coaches completing week six of the study. These participants had a significantly higher mean age than the participants at the outset of the study (51.71 vs. 49.14 years, $p<0.001$), but there were no significant differences between these groups on any other characteristics.

Table 1. Characteristics of Participants Completing Week 6 Survey (n=245)

Variable	Value	Data
Age[1]	Mean (range)	51.71 (24-76)
Gender	Female (%)	231 (94.3)
Education[2]	No Bachelors (%)	14 (5.7)
	Bachelors (%)	86 (35.1)
	Graduate degree (%)	144 (58.8)
Household composition[1]	Live with others (%)	202 (82.4)
	Live alone (%)	41 (16.7)
Years of coaching	Mean (range)	5.82 (0.5-40)
Employment[2]	Full-time coach (%)	79 (32.2)
	Part-time coach (%)	129 (52.7)
	Other employment (%)	29 (11.8)
	Unemployed (%)	7 (2.9)
Location of work[2]	Home (%)	156 (63.7)
	Hybrid (%)	58 (23.7)
	Outside of home (%)	29 (11.8)
Essential Worker[2, 3]	No (%)	178 (72.7)
	1a (%)	43 (17.6)
	1b (%)	10 (4.1)
	1c (%)	13 (5.3)

[1]n=243
[2]n =244
[3]Categories of essential workers from: CDC (2021). Interim List of Categories of Essential Workers

Mapped to Standardized Industry Codes and Titles. Retrieved from https://www.cdc.gov/vaccines/covid-19/categories-essential-workers.html
1a = Essential healthcare worker
1b = Frontline essential (non-healthcare) worker
1b = Other essential (non-healthcare) worker.

Of note, 37.9% of respondents on the initial survey reported no change in the number of coaching clients due to the pandemic with 33.0% reporting a decrease in the number of clients and 28.7% an increase. Nearly 20% (19.6) of respondents agreed or strongly agreed that coaching was more stressful due to the pandemic and 23.8% slightly agreed. Also, at week six, 29.0% of participants reported having made use of support services themselves, such as therapy or coaching, during the course of the intervention.

At week six of the study, 2% of respondents reported having COVID symptoms prior to any testing being available; 4% reported positive tests at some point, but mild enough symptoms to manage at home; and one individual reported having had symptoms but not testing positive. A similar number of participants (6.1%) reported the loss of someone close to them due to COVID-19 during the six weeks of the intervention. From the beginning of the study to week six, 66.5% of respondents reported receiving full or partial COVID-19 vaccinations. On a 7-point Likert scale, 66.5% of participants reported feeling that COVID-19 was being managed “well” or “very well” where they lived, while 10.7% felt COVID-19 was managed “slightly” to “very poorly”.

Initial Depression and Anxiety Scores

Compared to data from the CDC Pulse survey (CDC, 2022) for the initial week of our study (March 17-29, 2021), participants had markedly lower rates than the US population of anxiety (11.4% vs 30.1%) and depression (5.5% vs 24.7%) on the GAD-2 and PHQ-2, respectively.

Feasibility (including Preliminary Effectiveness)

As outlined in the methods section, various factors were examined to explore feasibility of the intervention. While 54.1% of participants completed the week three survey (mid-intervention), 39.1% completed the week six survey (immediate post-intervention) and 31.1% completed the week ten survey (follow-up). Participants completing the week six survey responded to the daily surveys on 60% of the possible days.

Use of the intervention. Among participants completing the week 6 survey, use of at least one PPI was reported on a mean of 99.7% (SE = 1.90%) of the days they completed the daily survey. The mean was taken by averaging each participant’s daily response rate. The unconditional standard error was the square root of the mean on the participant variances plus the variance of the participant response rate.

Degree of execution. Similarly, the frequency of daily use of all five of the PPI together was a mean of 89% (SE = 12.7%) on the days that respondents completed the daily survey. This was taken by averaging the proportion of each participant’s daily participation. The conditional standard error was the square root of the mean on the participant’s daily variances plus the variance of the participant’s daily means.

Satisfaction. At week six, 60.8% of respondents reported finding the intervention either helpful or very helpful; 68.2% reported being likely or very likely to use the intervention with clients; and 59.1% reported they would be likely or very likely to recommend the intervention to family or friends.

Intent to continue use of the intervention. At week six, 64.1% of respondents reported they would likely or very likely continue the intervention.

Effects (Preliminary Effectiveness) of the Intervention. The regression models were derived from comparisons done using Akaike Information Criterion (AIC). For the intervention period, models that included controlling for the initial survey score were significantly better than the other models tested for all three outcome measures. For the post-intervention period, there were no significant differences among the models tested, and a model that showed no change between the periods was adequate for all the surveys. As shown in Figure 3, in the week 0 to 6 intervention period, the graphs illustrate significant improvement in well-being for those with initial low life satisfaction, high anxiety, and high depression. There was no improvement for those that already scored high in well-being. For the week 6 to week 10 period (follow-up), there were no significant changes in scores. This may indicate that improvements attained during the intervention period were sustained over the following month.

Sustainability. At week ten, participants were asked if they had continued with any of the PPI since the end of the study intervention (week six). Respondents reported using any of the PPI twice a week or more (82%), three times a week or more (80%), and most or every day (71%).

Maintenance of Change Over Time. For all three outcome measures, AIC model comparisons indicated that the best fit model included the initial score on the instrument as a control variable. As illustrated in Figure 3, regression analysis, controlling for initial score on each measure, indicated no significant change in scores from week six to week ten on any measure. Reductions in anxiety and depression scores were maintained, and increases in satisfaction with life were maintained.

Figure 2. Study flow diagram

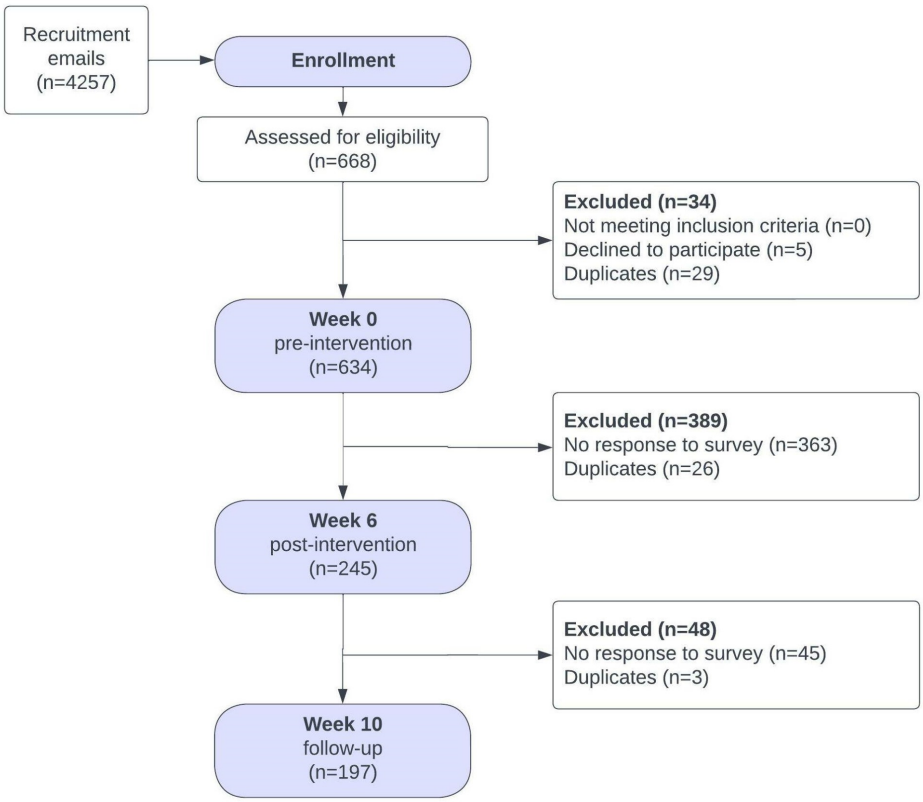


Figure 3. Preliminary Effectiveness Regression Results

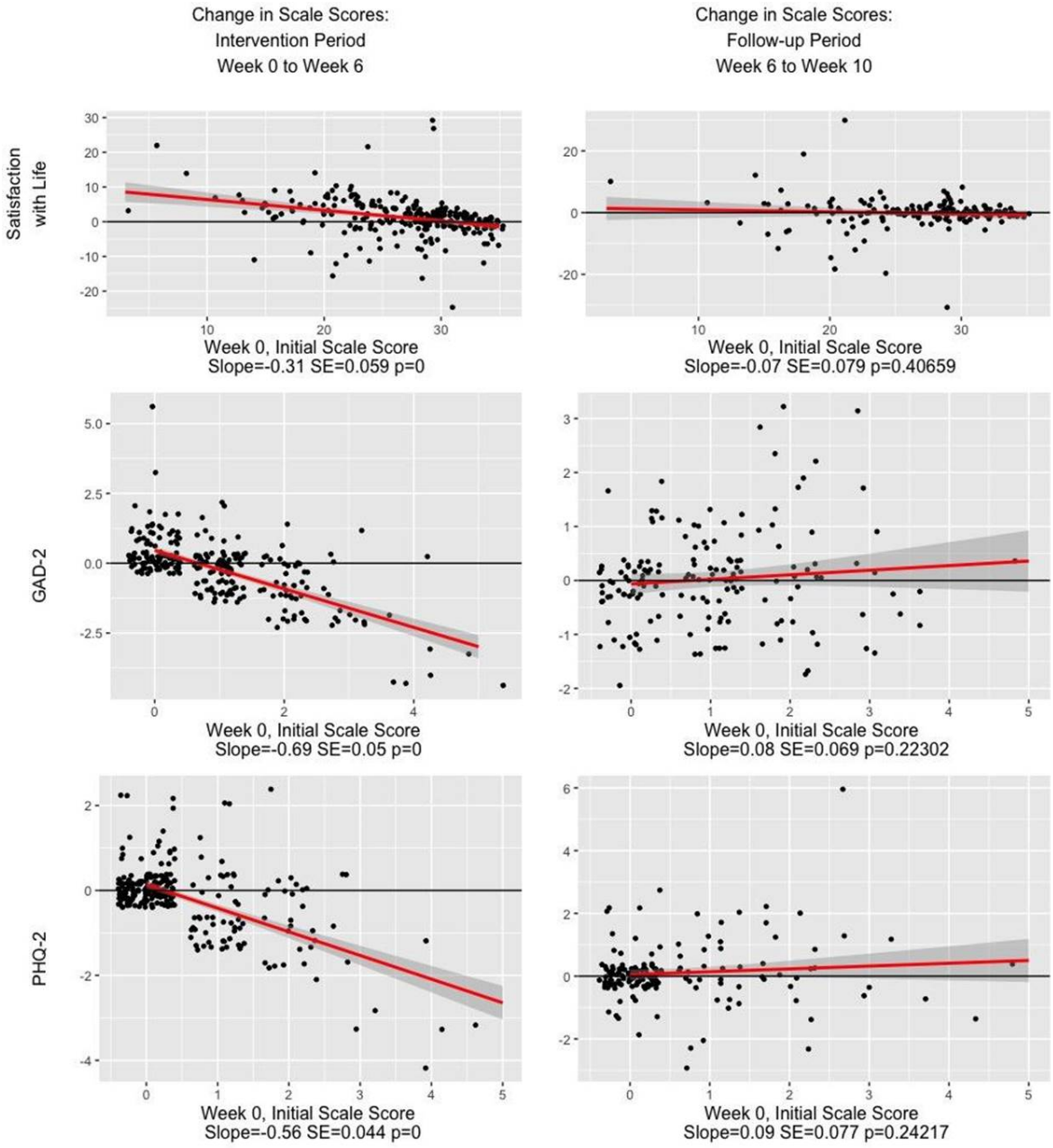


Figure 3 Legend: In each graph, the red regression line with the grey 95% confidence interval demonstrates a regression of changes in scores (y-axis) during the interval on the initial scores (x-axis). The zero reference line on the y-axis indicates no change. Scores indicating lower well-being in each graph are at the ends of the regression lines farther away from the zero reference line on the y-axis. Higher scores on the Satisfaction with Life Scale and lower scores on the GAD-2 and PHQ-2 signify greater well-being. Note: In designing the graphs, the survey scores and score differences were jiggled to show more accurately the number of observations for each.

Qualitative Responses

While the main focus of this study was not a qualitative exploration, participants were invited to provide feedback about the study and/or factors that might have impacted their results. A total of 203 participants responded to the open-ended qualitative question asked in weeks three, six, and

ten, 129 responding at just one data collection point, and others reporting more than once. Three key themes, and a number of sub-themes were identified.

One theme was: *factors influencing results*. Some participants remarked on previous experience using aspects of the intervention, a factor that might have affected their individual outcomes in the study: "The intervention of this study is something I have been using for years so it is not new to me but still very helpful" (ID 89, week 3). Interestingly, one participant offered a perspective on how geographical factors could potentially impact results: "I think the area of the country a participant lives in and how the participant feels about the decisions authorities are making can impact responses and results" (ID 397, week 10). Other personal and societal factors occurring during the intervention period that participants felt might have impacted their results included: a death in the family, personal or family member health issues (e.g., cancer, surgery), job loss, job stress, how COVID-19 was handled, pregnancy, the Derek Chauvin trial, and financial hardships being faced. As an example, one participant shared, "My mother passed away in Feb 2021. This study is helping me work through my grief" (ID 363, week 3). Another shared, "I was laid off from my job of 16 years 6 weeks ago. Having a hard time with the adjustment (ID 275, week 10).

The second theme addressed the personal *impact of the study on participants*, in particular: finding value, usefulness, positive outcomes, sharing the practices with others, and gratitude for the opportunity to participate. One participant shared, "It was a great reminder to create positive experiences for myself instead of waiting for them to happen. (ID 50, week 6). Another commented about the value for themselves that they also wanted to share with others:

> *I love that this study acts as a daily reminder for me to check in. It has inspired me to take a look at my own life and make adjustments where necessary. I've also shared some of these questions in my social media community and got great feedback. Thank you!* (ID 323, week 3).

Many participants expressed gratitude for participation in the study, as the following examples illustrate:

- *My favourite part of my day is sitting down with a pot of tea at breakfast, watching the birds and writing the answers to these questions. Thank you thank you thank you.* (ID 33, week 6).
- *The study has created a stronger habit of daily gratitude journaling, which I am so thankful for...Thank you!* (ID 190, week 6)

Participants also reflected on the lasting impact of the interventions: "Just want to reinforce how answering these questions everyday brought back the natural high I experienced when actually doing the act" (ID 42, week 6), and "I loved participating in this study, and I still think, did I connect or did I move?" (ID 591, week 10).

Responses from participants also fell into a third theme which was *providing feedback on aspects of the study*. Several participants commented on the value of the daily reminder emails. As one put it:

> *I find that my participation is a source of accountability. I notice that I look for ways to increase my movement and connect with people. I am pushed past a mere desire and I seek to actively meet these goals* (ID 146, week 3).

Several participants detailed challenges with the study technology. For example:

- *I might add that it would be helpful not to have to type in one's demographic info (e-mail, name) every single day, prior to completing the daily survey* (ID 457, week 3)
- *It would be helpful to include specific dates in the questions for example, what the date of the end of intervention is* (ID 374, week 10)

A number of participants remarked on challenges understanding the intervention practice of cultivating beauty, as the following example illustrates: "'Inviting Beauty' was unclear and confusing, I had to go to the expanded narrative several times and then found it wasn't much help…" (ID 108, week 3).

Discussion

This study explored the feasibility and preliminary effectiveness of a 6-week, multifaceted, self-administered positive psychology intervention for health and wellness coaches during the COVID-19 pandemic. At the outset of the study, participants had markedly lower rates of depression and anxiety on the GAD-2 and PHQ-2, as compared to the US population (CDC, 2022). While just under 40% of participants completed the week six survey, on the days they completed daily surveys, most were completing at least one PPI, and generally all five. Also, a majority of the week six respondents found the intervention helpful or very helpful, reported being likely or very likely to continue the intervention, and were likely or very likely to both use it with clients and recommend it to friends or family. Additionally, at six weeks, we found improvements in life satisfaction and reductions in depression and anxiety for study participants who initially had lower well-being scores. A large majority of the week ten survey respondents were still using the intervention at least part of each week, and positive outcomes were sustained. Qualitative data also indicates that participants experienced benefits of participation and a positive impact. Overall, these varied ways of exploring our data suggest a feasible and effective intervention.

The timing of our study, beginning just as vaccines were being made available in the U.S., may confound interpretation of preliminary effectiveness of the intervention. The availability of vaccines may have had a salutary effect on participant well-being that, in itself, affected study outcomes.

Still, the positive outcomes of this intervention support findings of Waters et al. (2021) and are consistent with the results of two meta-analyses of RCTs of PPI (Bolier et al., 2013; Sin and Lyubomirsky, 2009). They also provide additional research support for positive mental health and well-being outcomes of engaging in PPI, and, more specifically, self-guided and multi-pronged PPI, including during the pandemic. The sustained gains at ten weeks are consistent with the Bolier et al. (2013) meta-analysis of PPI which found effects on well-being partially sustained over time. Because many participants in our study reported continued use of the PPI at ten weeks, it is not possible to ascertain whether the beneficial effects resulting from use of the PPI would be sustained in the absence of ongoing practice.

We had anticipated using the daily surveys to determine frequency of participant use of the daily interventions. However, various technical considerations, described in "Limitations" below, may have impacted consistent use and return of the daily surveys and, thus, daily reporting. For these reasons, the 60% response rate to daily surveys among week six survey respondents may not accurately reflect actual frequency of use of the intervention in this study and may under-report use and feasibility. When responding, participants almost always reported use of at least one, and, generally, all five, PPI in a day, suggesting feasibility.

We are not able to ascertain the reason for the lower than hoped for response rate to the week six survey (just under 40%). Possibilities include: 1) the six-week intervention was too long a duration to retain participant interest; 2) daily surveys led to participant fatigue; and/or 3) participant frustration with technical issues related to the daily surveys lead to some dropping out of the study. High satisfaction with the intervention at weeks three and six, apparent high use of the PPI among week six respondents, and continued use of the intervention by many completing the week ten survey, may suggest that technical issues, rather than anything about the intervention itself, limited the week six response rate. Menon and Muraleedharan (2020) suggest that a 25-30% response rate to email surveys is common, so perhaps nearly 40% demonstrates reasonable participant

engagement. The response rate may, however, impact generalisability of findings from this study of feasibility and preliminary effectiveness.

While the week six survey completion rate of nearly 40% did not meet our established 50% criteria for feasibility, our other findings suggest feasibility, (preliminary) effectiveness, and a valuing of the intervention by participants. The multi-pronged, self-guided PPI used in this study appears well received; had a positive effect on depression, anxiety, and satisfaction with life; and was characterised by maintenance of both use and benefit at a post-intervention follow-up, by at least a portion of participants. Because of these findings, we suggest that future research on this multi-pronged PPI would be beneficial, particularly if the technical challenges inherent in this study's design, mentioned in "Limitations", could be overcome.

Limitations

A number of technical issues, largely stemming from our limited budget and resultant use of free survey and email management services, affected the study. One of these technical issues was the survey tool going off-line for 24 hours at the beginning of the study. Another challenge faced was the requirement for participants to manually enter their name and email, on each survey, as unique identifiers, to align the daily and week 3, 6 and 10 responses prior to de-identification. The survey software used did not allow automatic identification of the user. This created an extra participant burden which may have impacted ongoing participation for some. Additionally, any typos and changes in email addresses needed to be cleaned from the data before de-identification and analysis. Use of industry standard software such as Qualtrics would likely have improved data collection procedures and both reduced participant burden and increased response rates. Development of an app, instead of relying on daily emails, to track participant engagement might also have been more effective.

In the qualitative data, a number of participants mentioned that they had been doing at least some of the study practices prior to participation in the study, a factor that may have impacted outcomes and should be accounted for in future studies of PPI. Additionally, more explanation of each PPI might have better guided participants, as some mentioned that the intervention related to "beauty" was unclear.

While we controlled for the biggest potential confounders (initial levels of depression, anxiety, satisfaction with life) in our regression analysis, a more extensive exploration of confounding was beyond the scope of this study which focused on feasibility and preliminary effectiveness. For example, the fact that nearly 30% of coaches reported making use of coaching or therapy support during the intervention period may confound interpretation of the impact of the intervention. Future research on this, or similar, interventions should explore a range of potential confounding variables in examining outcomes.

Several characteristics of study participants may impact generalisability of findings from this feasibility/preliminary effectiveness study to other populations or the general public. These included the following: the fact that approximately 27% of participants identified as essential health care workers, creating potential additional stress; most (94%) were women; 87% lived with others, thus not experiencing isolation that plagued many during the early period of the pandemic; and 64% worked from home at the time of the surveys. Nearly 30% of participants reported making use of coaching or therapy support during the intervention. Additionally, health and wellness coaches may, based on their training, have knowledge of, and experience with, positive psychology interventions, and it is difficult to ascertain how this prior knowledge or experience might impact engagement and outcomes differently than for others lacking this background. Further, the fact that study coaches had lower initial rates than the US population of anxiety (11.4% vs 30.1%) and depression (5.5% vs 24.7%) on the GAD-2 and PHQ-2, respectively, raises the question of whether the study intervention might impact other groups differently.

Strengths

Despite potential stresses faced by members of the coaching profession as a result of the COVID-19 experience, we are aware of no other study that has explored support for health and wellness coaches during the pandemic. This study offered a unique opportunity to provide possible support while also researching its effects.

The study intervention provided a whole person approach by offering multiple PPI in different domains of well-being, consistent with prior research (e.g., Antoine et al, 2018) and a client/patient-centred view of health, proposed by Huber et al. (2016). Additionally, a self-guided PPI is a cost-effective approach that can be easily replicated. As indicated in the qualitative data, respondents noted that the daily surveys provided frequent accountability reminders; this may have supported putting the positive psychology interventions into practice.

Conclusions

We explored the feasibility and preliminary effectiveness of a positive psychology intervention on the well-being of health and wellness coaches during the COVID-19 pandemic, finding participant engagement and benefit. Both quantitative outcomes and qualitative responses suggest that this intervention, making use of multiple self-guided positive psychology activities on a daily basis, was feasible and beneficial for this group of coaches. It seems reasonable to suggest that it might be useful for other groups of coaches in similar, or other, challenging circumstances as well. While further research is warranted, if this intervention is found not only feasible, but also effective in future studies, such PPI might be useful for supervisors to share with coaches, for coaches to use themselves, as well as for coaches to introduce to their clients.

Additionally, while the psychological toll of the pandemic on frontline workers during the COVID-19 pandemic was well documented, and it is understood that access to psychological support can offer protection from the potential mental health toll of a disease outbreak, both a lack of evidence to inform psychological interventions and the challenge of providing flexible and accessible mental health support posed barriers to optimally addressing the concerns and needs of these key personnel (Billings, Seif, Hegarty, Ondruskova, Soulios, Bloomfield and Greene, 2021; Billings, Ching, Gkofa, Greene and Bloomfield, 2021; Kisely, Warren, McMahon, Dalai, Henry and Siskind, 2020; Pollock, Campbell, Cheyne, Cowie, Davis, McCallum, McGill, Elders, Hagen, McClurg, Torrens and Maxwell, 2020).

Clearly, additional approaches to supporting the well-being of all human service personnel in a pandemic, or future similar crises, are needed. An advantage of an intervention such as the self-guided PPI explored in this study is that it is flexible enough to be made easily accessible to any worker, anywhere, and can be engaged individually, with or without group support. The flexibility of this intervention may make it an ideal type of intervention to support the well-being of not only coaches, but a range of personnel in varied settings. Further research on this, or similar, PPI might explore these questions among varied types of health or social care workers as well as other coaches and the general public.

In this feasibility/preliminary effectiveness study, well-being was conceptualised as including mental health (anxiety and depression) and satisfaction with life, as these were expected to reflect the impact of COVID-19. At the same time, the PPI addressed multiple life arenas: gratitude, connection, the outdoors, movement, and beauty, all previously demonstrated to positively impact well-being. In a recent paper, Kemp and Fisher (2022) expand the concept of well-being to embrace a broad, multi-level framework including “the individual (... a balanced mind and a healthy body), community (social connectedness), the environment (connection with nature), positive societal change and sociostructural factors” (p. 3). Use of their framework in a study with university students during the pandemic was associated with beneficial outcomes. A similarly broad

conceptualisation of well-being might beneficially inform future research on this study's PPI, or other supportive interventions.

Acknowledgements

Daryl Nault, MS assisted with some of the statistical analysis.

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