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# Promoting durable well-being among healthcare professionals via an interactive, online, wellness initiative

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## Abstract:

Burnout is recognized as a negative contributor to well-being within healthcare. The purpose of this study was to evaluate whether participation in the Peace Education Program (PEP), a 10-week wellness course, promoted durable improvement of burnout and wellness in a large academic medical center. We deployed PEP virtually through a series of free, interactive, online wellness sessions focusing on 10 domains: peace, appreciation, inner strength, self-awareness, clarity, understanding, dignity, choice, hope, and contentment. Two weeks before and six months following the sessions, we distributed de-identified surveys based upon the validated Schwartz Outcome Scale-10 (SOS-10) with Likert scale scores 0–6 to assess participant wellness. The Mann-Whitney U test was used to analyze statistical differences between post- and pre-course data. Sixty-nine faculty, trainees, and staff registered to participate, 21 participants completed the pre-course survey and 10 completed the post-course survey. The pre-course mean + standard error (SE) SOS-10 score was  $43.2 \pm 0.8$ , which improved to  $51.0 \pm 0.7$  post-course ( $P < 0.001$ ). Overall, all 10 domains demonstrated improved mean scores over time, with the five domains of “inner strength” ( $P = 0.008$ ), “understanding” ( $P = 0.030$ ), “peace” ( $P = 0.048$ ), “choice” ( $P = 0.026$ ), and “hope” ( $P = 0.020$ ) demonstrating statistically significant score improvements six months after course completion. Participants completing  $\geq 7$  sessions benefited more than their counterparts and achieved statistically significant improvement in SOS-10 wellness scores (8.77 points) six months after course completion. Our findings demonstrate improved wellness in participants following peace education course completion. This free, interactive, online course may be utilized at other medical centers to improve wellness.

## Keywords:

Burnout, peace education program, wellness initiative, wellness

## Introduction

Healthcare provider burnout, commonly presenting as a lack of enjoyment from professional activities or feelings of diminished importance and emotional exhaustion, has significant personal and clinical implications.<sup>[1,2]</sup> In recent times, increasing importance has been given to psychological well-being among physicians with the goal of mitigating adverse outcomes associated with work-related stress and anxiety.<sup>[1–3]</sup> With greater emphasis being placed on understanding the social and

behavioral factors influencing physician performance, research into physician wellness as a critical determinant of patient outcomes has gained prominence.<sup>[4]</sup> Lack of physician wellness has been associated with heightened anxiety, personal stress, and interpersonal conflict in medical settings, with potentially deleterious effects on patient care.<sup>[5–8]</sup>

The Peace Education Program (PEP) is a free, online wellness course developed by The Prem Rawat Foundation to promote peace education through modules on 10 domains related to peace, appreciation,

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inner strength, self-awareness, clarity, understanding, dignity, choice, hope, and contentment.<sup>[9]</sup> Results from the implementation of PEP in educational and correctional settings suggest the initiative may help improve self-understanding and address emotional detachment in settings outside of healthcare.<sup>[10]</sup> The aim of the present study was to determine whether PEP improved wellness in a large academic medical center.

## Materials and Methods

In fall 2022, we promoted the PEP course through digital screens at a large, urban, quaternary care medical center, incorporating the date and time of upcoming sessions and including a web link for easy registration. We conducted the workshops utilizing Zoom (Zoom Video Communications, Inc., San Jose, CA, USA), ensuring meaningful audio and video-based participant interaction while adhering to coronavirus disease (COVID) -era gathering guidelines. The series comprised 10 separate hour-long sessions designed to run weekly for a consecutive 10-week period. Each Zoom session was overseen by a volunteer, experienced facilitator who ensured a respectful virtual environment and encouraged participant interactions. Each session also included a volunteer, experienced media technician responsible for playing relevant multimedia clips including animations, interview segments, and lecture clips from PEP source material. Course completion was defined as participation in seven or more sessions. We distributed a de-identified survey, created via Qualtrics software (Qualtrics, Provo, UT, USA), to participants two weeks before the workshops and then again six months after course completion.

Our survey incorporated a standard PEP survey comprised of 10 questions, each associated with a unique PEP theme and rated on a Likert scale from 1 to 5 with an additional “not applicable” response option and a total summary score ranging from 10 to 50. We additionally used the Schwartz Outcome Scale-10 (SOS-10), a validated survey with 10 items scored on a Likert scale from 0 to 6, with a total summary score ranging from 0 to 60.<sup>[11]</sup> In our post-workshop survey, we integrated open-ended questions allowing participants to comment on aspects they found most valuable during sessions as well as new elements they would like to see incorporated in future courses.

Survey results were presented as means with associated standard errors (SEs). The Shapiro-Wilk test was employed to ascertain the normality of the data. The Mann-Whitney U test was used to determine the statistical difference between pre- and post-workshop results. Based upon prior literature, a minimal clinically important difference (MCID) in SOS-10 wellness scores

was defined as 8.50 points.<sup>[12]</sup> A two-tailed analysis with a significance level set at  $P \leq 0.05$  was used to identify statistically significant results. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 29.0 (IBM Corp., Armonk, NY, USA).

## Results

A total of 69 faculty members, trainees, and staff registered for the course. Among these participants, 41 (59%) attended more than one session, and 15 (22%) completed the course. Among the 41 participants who attended more than one session, 21 (51%) filled out the pre-course survey, and 10 (24%) completed the post-course survey. Among these 10 respondents, seven respondents (70%) had attended seven or more sessions, thus fulfilling the criteria for course completion.

Table 1 presents the results of our analysis comparing pre-course scores to post-course scores. In the PEP survey, the domain of “understanding” had the lowest pre-course score (mean  $\pm$  SE, 41.0  $\pm$  1.7). There was significant improvement in this domain’s score following the course, as indicated by the post-course score (mean  $\pm$  SE score 47.0  $\pm$  1.5,  $P = 0.030$ ). In the SOS-10 survey, the “appreciation” domain had the lowest pre-course score (mean  $\pm$  SE, 39.5  $\pm$  3.1). Despite showing a trend toward improvement in post-course score (mean  $\pm$  SE score 50.0  $\pm$  3.3), this increase did not reach statistical significance ( $P = 0.057$ ). When comparing pre- to post-course PEP survey results ( $n=10$ ), we observed significant improvement in domain scores for “inner strength” (mean  $\pm$  SE: 42.3  $\pm$  1.1 vs. 48.0  $\pm$  1.3,  $P=0.008$ ) and “understanding” (mean  $\pm$  SE: 41.0  $\pm$  1.7 vs. 47.0  $\pm$  1.5,  $P=0.030$ ). Additionally, when comparing pre- to post-course SOS-10 survey results ( $n = 10$ ), we observed significant improvement in domain scores for “peace” (mean  $\pm$  SE: 42.8  $\pm$  2.1 vs. 51.0  $\pm$  2.7,  $P = 0.048$ ), “choice” (mean  $\pm$  SE: 40.4  $\pm$  2.8 vs. 51.0  $\pm$  2.3,  $P = 0.026$ ), and “hope” (mean  $\pm$  SE: 43.3  $\pm$  2.5 vs. 53.0  $\pm$  1.5,  $P = 0.020$ ).

Interestingly, when we filtered our cohort to analyze individuals who completed the course, defined as attending seven or more sessions ( $n = 7$ ), we observed further improvement. When comparing pre- to post-course PEP survey results in this cohort, we additionally identified significant improvements in the domain scores for “clarity” (mean  $\pm$  SE: 48.5  $\pm$  1.4 vs. 42.3  $\pm$  1.3,  $P=0.019$ ) and “contentment” (mean  $\pm$  SE: 48.5  $\pm$  1.4 vs. 40.9  $\pm$  1.9,  $P=0.030$ ). Furthermore, when comparing pre- to post-course SOS-10 survey results in this cohort, we additionally identified significant improvements in the domain score for “appreciation” (mean  $\pm$  SE: 52.8  $\pm$  2.8 vs. 39.5  $\pm$  3.1,  $P = 0.029$ ).

**Table 1: Bivariate analysis investigating the differences between pre- and post-workshop survey responses (PEP survey and Schwartz Outcome Scale-10 survey)**

| Instruments/questions   | PEP theme                | Pre-workshop (overall cohort), mean±SE, n=21 | Post-workshop (overall cohort), mean±SE, n=10 | P*    | Post-workshop (more than seven sessions cohort), mean±SE, n=7 | P*    |
|---|--------------------------|--|---|-------|---|-------|
| <b>PEP survey</b>   |                          |  |   |       |   |       |
| 1. I know that it is possible to feel peace in my life  | Peace                    | 44.7±1.3                                     | 48.0±1.3                                      | 0.137 | 48.5±1.4  | 0.121 |
| 2. I know that one of my inner resources is the ability to appreciate and enjoy life                              | Appreciation             | 43.8±1.4                                     | 48.0±1.3                                      | 0.081 | 48.5±1.4  | 0.079 |
| 3. I know that I have inner strengths that I can use to help me in my life  | Inner strength           | 42.3±1.1                                     | 48.0±1.3                                      | 0.008 | 48.5±1.4  | 0.010 |
| 4. As I become more self-aware, I can live my life more consciously   | Self-awareness           | 44.2±1.3                                     | 47.0±1.5                                      | 0.226 | 47.4±1.8  | 0.263 |
| 5. I understand that turning to my inner resource of clarity can help me in my life                               | Clarity                  | 42.3±1.3                                     | 46.0±2.2                                      | 0.106 | 48.5±1.4  | 0.019 |
| 6. I understand the importance of knowing something from my own experience rather than just believing something   | Understanding            | 41.0±1.7                                     | 47.0±1.5                                      | 0.030 | 48.5±1.4  | 0.014 |
| 7. I recognize that as a human being I have an innate dignity, regardless of my circumstances                     | Dignity                  | 45.0±1.5                                     | 48.0±1.3                                      | 0.242 | 48.5±1.4  | 0.205 |
| 8. I recognize that I have the freedom and power to make daily choices and that these choices affect my wellbeing | Choice                   | 43.8±1.4                                     | 48.0±1.3                                      | 0.081 | 47.4±1.8  | 0.243 |
| 9. I understand that hope is an inner resource that can help me deal with challenging times in my life            | Hope                     | 41.9±1.6                                     | 47.0±1.5                                      | 0.067 | 47.4±1.8  | 0.098 |
| 10. I understand that I can feel contentment no matter what is happening in my life                               | Contentment              | 40.9±1.9                                     | 47.0±1.5                                      | 0.059 | 48.5±1.4  | 0.030 |
| <b>Schwartz Outcome Scale-10</b>  |                          |  |   |       |   |       |
| 1. I have peace of mind   | Peace                    | 42.8±2.1                                     | 51.0±2.7                                      | 0.048 | 52.8±2.8  | 0.022 |
| 2. My life is progressing according to my expectations  | Clarity/<br>appreciation | 39.5±3.1                                     | 50.0±3.3                                      | 0.057 | 52.8±2.8  | 0.029 |
| 3. I am generally satisfied with my psychological health  | Inner strength           | 43.8±2.7                                     | 49.0±2.7                                      | 0.324 | 51.4±3.4  | 0.162 |
| 4. I have confidence in my ability to sustain important relationships   | Self-awareness           | 47.6±2.4                                     | 53.0±2.1                                      | 0.226 | 52.8±2.8  | 0.301 |
| 5. I am able to forgive myself for my failures  | Understanding            | 40.9±3.0                                     | 51.0±1.7                                      | 0.051 | 51.4±2.6  | 0.076 |
| 6. Given my current physical condition, I am satisfied with what I can do   | Dignity                  | 42.8±3.0                                     | 52.0±2.4                                      | 0.079 | 52.8±2.8  | 0.083 |
| 7. I am able to handle conflicts with others  | Choice                   | 40.4±2.8                                     | 51.0±2.3                                      | 0.026 | 52.8±2.8  | 0.021 |
| 8. I feel hopeful about my future   | Hope                     | 43.3±2.5                                     | 53.0±1.5                                      | 0.020 | 52.8±1.8  | 0.045 |
| 9. I am often interested and excited about things in my life  | Contentment              | 44.7±2.5                                     | 49.0±2.7                                      | 0.404 | 48.5±3.4  | 0.526 |
| 10. I am able to have fun   | Contentment              | 46.1±2.2                                     | 51.0±2.3                                      | 0.210 | 51.4±2.6  | 0.216 |

\*Mann-Whitney U-test

Aggregating all responses from the PEP survey revealed significant overall improvement when comparing pre- to post-workshop scores (mean ± SE: 43.0 ± 0.5 vs. 47.4 ± 0.5,  $P < 0.001$ ). Aggregating all responses from the PEP survey among those who completed the course revealed significant and greater overall improvement when comparing pre- to post-workshop scores (mean ± SE: 43.0 ± 0.5 vs. 48.1 ± 0.5,  $P < 0.001$ ). This trend was also reflected in the SOS-10 survey when comparing pre- to post-workshop scores in the overall cohort (mean ± SE: 43.2 ± 0.9 vs. 51.0 ± 0.8,  $P < 0.001$ ) as well as the subset of participants that completed the course (mean ± SE: 43.2 ± 0.9 vs. 52.0 ± 0.9,  $P < 0.001$ ). The cohort of participants who completed the course demonstrated an

8.77-point improvement on the SOS-10 survey, crossing the pre-defined MCID of 8.50 points for significantly improved wellness. These findings are further detailed in Table 2.

Detailed responses to open-ended questions included in our post-course survey are presented in Supplemental Table 1. A recurring theme among responses was a desire for PEP to be lengthier, to offer more sessions, and to be more frequently conducted in the future. All survey respondents affirmatively answered the questions “Has the Peace Education Program helped you in your life?” and “Would you invite someone else to attend a future PEP?” In addition,

**Table 2: Bivariate analyses examining the differences between all pre- and post-workshop survey responses**

|               | Pre-workshop (overall cohort), mean±SE | Post-workshop (overall cohort), mean±SE | P*     | Post-workshop (more than seven sessions cohort), mean±SE | P*     |
|---------------|--|---|--------|--|--------|
| PEP survey    | 43.0±0.5                               | 47.4±0.5                                | <0.001 | 48.1±0.5   | <0.001 |
| SOS-10 survey | 43.2±0.9                               | 51.0±0.8                                | <0.001 | 52.0±0.9   | <0.001 |

seven out of eight respondents expressed their intention to participate in future PEP courses.

## Discussion

We sought to evaluate the utility of PEP in improving wellness among healthcare professionals. In bivariate analysis, participants who attended seven or more sessions had significant improvement in domain scores related to “inner strength,” “clarity,” “understanding,” “contentment,” “hope,” “appreciation,” and “choice” even six months after the course ended. This cohort of participants achieved a MCID for improved wellness as defined by the SOS-10 survey. To our knowledge, the present study is the first to demonstrate statistically significant improvement in wellness metrics via a fully virtual, interactive wellness course among healthcare professionals.

Medicine as a profession has historically displayed relatively little interest in supporting organized efforts targeting occupational well-being for physicians. However, as recent literature has continued to highlight, a correlation exists between gaps in patient care and physician burnout, and strategies aiming to promulgate cultures supporting occupational well-being within medical fields have recently gained prominence.<sup>[1-3]</sup> In a 2019 meta-analysis by Hodkinson *et al.*<sup>[13]</sup> focusing on data from 170 observational studies encompassing a total of 239,246 physicians, a striking correlation between physician burnout and patient safety was found. Specifically, patient safety incidents were found to be twice as high among physicians experiencing burnout compared to their counterparts. Furthermore, greater burnout was associated with up to a threefold decrease in patient satisfaction and more than a twofold decrease in perceived professionalism. These findings underscore the imperative for healthcare organizations to dedicate significant resources and effort toward the development and implementation of targeted strategies aimed at reducing physician burnout across various specialties.<sup>[13]</sup> Indeed, in recent years, medical institutions across the United States have established programs in diverse specialties aimed at educating physicians about the risks of burnout while supporting long-term career sustainability. Eskander *et al.*<sup>[14]</sup> performed a systematic review of the literature regarding wellness interventions for resident physicians, highlighting 18 studies describing wellness programs for diverse medical trainee cohorts. Similarly, Pascual *et al.*<sup>[15]</sup> performed a systematic

review of wellness programs for neurosurgical trainees, highlighting several areas of potential improvement for facilitated program implementation and increased access. Similar to the program presented in the current study, most initiatives published in previous literature included wellness lectures in both virtual and in-person modalities.<sup>[16-25]</sup> However, several programs also included additional funding that attempted to address physical well-being, support team-building initiatives, and promote additional faculty mentorship.<sup>[16-26]</sup> The primary purpose of our study was to address the inter- and intra-personal factors that may contribute to mitigating symptoms of burnout.

Overall, programs previously described in the literature received positive feedback from participants, irrespective of training level. Indeed, responses to qualitative surveys from program participants indicated that wellness initiatives provided a positive outlet for stress and bolstered support for discussions on occupational satisfaction and wellness.<sup>[16-27]</sup> Building on these results, West *et al.*<sup>[3]</sup> focused on physician-specific studies in a meta-analysis that utilized single-arm, pre-post comparison methods to evaluate interventions aimed at preventing and reducing physician burnout. The study concluded that overall burnout decreased from 54% to 44% ( $P < 0.0001$ ;  $I^2 = 15\%$ ), emotional exhaustion scores decreased from 23.82 points to 21.17 points ( $P < 0.0001$ ;  $I^2 = 82\%$ ), and depersonalization scores decreased from 9.05 to 8.41 ( $P = 0.01$ ;  $I^2 = 58\%$ ) across studies. Similarly, a 2021 meta-analysis conducted by Cohen *et al.*<sup>[28]</sup> involving a total of 925 physicians demonstrated that mindfulness-based interventions (MBIs) were effective in significantly reducing burnout and stress levels among participants. Nevertheless, several initiatives found that promoting trainee involvement was difficult due to time constraints and negative perceptions regarding participation in wellness programs.<sup>[16,19]</sup> Wellness programs instituted by the Medical University of South Carolina, the University of Minnesota, and the University of Pittsburgh Medical Center found that resident time availability was a principal barrier to program implementation, noting that aspects of these initiatives requiring less time investment, such as free gym memberships or self-driven wellness activities, had the highest levels of participation.<sup>[15,20]</sup> Furthermore, despite programs displaying qualitative improvements in wellness among participants, previous studies that implemented quantitative measures for mental health, such as the Maslach Burnout Inventory score, found no



significant differences in outcomes.<sup>[19,21-24]</sup> These results may indicate that there is still a need to develop wellness initiatives that can provide durably improved mental health outcomes while also being easily implemented into existing physician workflows.

To address this need, we find that peace education through the PEP may serve as an implementable, self-directed educational initiative that can be incorporated into previous wellness initiatives described in literature. Indeed, Tang *et al.*<sup>[29]</sup> and Kase *et al.*<sup>[30]</sup> draw upon national surveys on wellness initiatives for trainees and attending physicians to describe a comprehensive set of criteria that such programs should incorporate, finding that the promotion of positive interpersonal relationships and a strong community should be a core component of wellness initiatives. The authors also found that programs should assess the best time to implement wellness training with prioritization for time periods near the beginning of residency or faculty careers.<sup>[29,30]</sup> The PEP fulfills this need through the promotion of topics related to interpersonal interaction. Further, the program may be incorporated into educational opportunities for early-career physicians, requiring a small initial time investment of seven hours that may be self-directed.<sup>[29]</sup> Further, the virtual, interactive modality of the program facilitates accessibility and may reduce fatigue from mandatory in-person classes. Indeed, several past reviews of existing wellness programs found that presentation-based modules were cornerstones of successful wellness initiatives.<sup>[5,14,15,20]</sup> The PEP may be implemented as a validated presentation-based component of future initiatives from medical institutions looking to implement physician wellness programming.<sup>[31]</sup>

There were several limitations inherent to our study. First, the small sample size of participants who completed the post-course survey could curtail the power of our statistical analyses and limit the generalizability of our results. Moreover, the self-selection of participants may have induced selection bias, potentially skewing results towards individuals who were already notably interested in participation or positively impacted by PEP. This scenario may restrict the external validity of our study. Furthermore, the absence of a control group in our study design precludes us from definitively attributing observed changes solely to PEP. Additionally, this study is subject to biases inherent to all single-institution studies. Lastly, the effect of dropout bias should not be overlooked, as those who completed the course and responded to the survey might differ substantially from those who did not. Despite these limitations, we believe the findings of our study shed light on the positive impact of the PEP. We recommend future research to address the limitations of this study, inclusive of a larger

sample size and the use of a control group for more comparative analyses.

## Conclusion

Our study provides evidence supporting the positive impact of PEP upon fostering inner strength, understanding, hope, choice, and peace among participants, as corroborated by significant improvement in pre- and post-course scores within these domains. We believe that these findings highlight the need for continued implementation and research into such wellness-focused programs for healthcare professionals.

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## Ethics statement

The Institutional Review Board (IRB), acting as a Health Insurance Portability and Accountability Act (HIPAA) Privacy Board, reviewed and approved the waiver of informed consent for this Brief Report (IRB00345751).

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## Conflicts of interest

There are no conflicts of interest.

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### Supplemental Table 1: Post-workshop survey: Participants' answers to open-ended questions

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What did you like most about the Peace Education Program? ( $n=7$ )

- Amazing
- Friendly
- Discussion time
- Interaction between people
- Knowing that others felt the same way I did and desired to improve their well-being.
- Spending time with others talking about and thinking about peace and how to be more grateful and mindful.
- The fact that it was an integrated program, meaning visual, auditory and group participation.

Is there anything about the Peace Education Program that could be improved? ( $n=6$ )

- A mechanism to continue the sessions into the future would be great.
- If there are articles and journal entries relating to each topic that would be of great additional resource to the topic being discussed.
- More sessions x2
- Would be great if there was more bedside clinician/nurse involvement.

How has the Peace Education Program helped you in your life? ( $n=7$ )

- I do in fact rely on the key points and try to integrate them in my life.
- I enjoyed the book.
- I know my colleagues and myself better.
- Judgement
- Provided other views.
- Thinking in a different aspect regarding life
- Yes

Do you have any other comments (no matter how small) about the Peace Education Program? ( $n=7$ )

- As a Christian, some questions are difficult to answer as I believe that my peace and hope are related to the Holy Spirit in my life so "inner" can sometimes have other connotations.
- Hope we can invite/have an in-person PEP session with Prem in the future!

I like the idea about the book club.

- I think we don't focus on mental health as strongly as we should, and this was really eye opening and a breath of fresh air. Almost took the embarrassment of having to admit we are just as strong as our weakest link. I would love to see this program run back-to-back.
  - More sessions
  - More time ( $n=2$ )
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