Evaluating a wellness intervention including micro-practices for healthcare professionals before and during COVID-19

Evaluando una intervención de bienestar con micro prácticas para profesionalesde la salud antes y durante el COVID-19

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Research article

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Abstract

Objective: To describe, with a mixed design study, healthcare professionals' pre-post descriptive measures of quality of life (subjective wellness) and prolonged fatigue, as well as an improvement in overall wellness and satisfaction regarding micro-practices as a result of participation in a wellness intervention before and during COVID-19.

Material and Methods: This study had a mixed design involving two independent groups of healthcare professionals participating in a wellness intervention with micro-practices before and during COVID-19. The intervention contained multimodal presentations with animated cartoon stories, comics, storytelling, readings, breathing, mindfulness and visualization exercises, adapted from second-order factors in the Indivisible Self model. Pre-post descriptive measures of quality of life (subjective wellness), prolonged fatigue, as well as improvement in overall wellness and satisfaction regarding micro-practices were collected.

Results: Attending to either wellness interventions before or during COVID-19 had a positive and, in some cases significant, effect on important indicators of quality-of-life and prolonged fatigue among healthcare professionals. A qualitative analysis indicated a subjective improvement in overall wellness and satisfaction regarding the use of micro-practices included in the wellness interventions, regardless of whether these were presented in person or virtually. Most participants subjectively indicated that they improved in the targeted indicators, especially achievement of better wellness.

Conclusions: During ordinary and extraordinary circumstances, healthcare professionals require specific interventions that act primarily to provide them with strategies that can improve physical, emotional, and spiritual health. Use of micro-practices in multimodal workshops to improve healthcare practitioner wellness is a successful tool for learning or remembering the importance of pausing during daily clinical activities and refocusing their energy.

Keywords: Holistic health; Health care providers; Health promotion, Working Conditions.

Resumen

Objetivo: Describir, con un estudio de diseño mixto, la medición descriptiva pre-post sobre la calidad de vida (bienestar subjetivo) y la fatiga prolongada entre profesionales de salud, así como su mejora en el bienestar general y satisfacción respecto al uso de micro-prácticas como resultado de participar en una intervención de bienestar antes y durante COVID-19.

Material y métodos: Este estudio tuvo un diseño mixto en el que participaron dos grupos independientes de profesionales del sector salud en una intervención de bienestar con micro-prácticas antes y durante el COVID-19. La intervención consistió en presentaciones multimodales con historias con dibujos animados, cómics, narración de cuentos, lecturas, ejercicios de respiración, mindfulness y visualización, adaptados a partir de los factores de segundo orden del modelo del Yo Indivisible. Se recolectaron medidas descriptivas pre-post de calidad de vida (bienestar subjetivo), fatiga prolongada, así como su mejora en el bienestar general y la satisfacción con respecto a las micro-prácticas.

Resultados: La asistencia a cualquiera de las intervenciones para el bienestar antes o durante la COVID-19 tuvo un efecto positivo y, en algunos casos, significativo, sobre importantes indicadores de calidad de vida y fatiga prolongada entre los profesionales del ámbito de la salud. El análisis cualitativo indicó una mejoría subjetiva en cuanto a su bienestar general y satisfacción con respecto al uso de las micro-prácticas incluidas en las intervenciones de bienestar, independientemente de si éstas se presentaron en persona o virtualmente. La mayoría de los participantes indicaron subjetivamente que habían mejorado en los indicadores enfocados, especialmente el logro de un mayor bienestar.

Conclusiones: Durante circunstancias ordinarias y extraordinarias, los profesionales de la salud requieren intervenciones específicas que actúen principalmente para proporcionarles estrategias que puedan mejorar la salud física, emocional y espiritual. El uso de microprácticas en talleres multimodales para mejorar el bienestar de los profesionales es una herramienta exitosa para aprender o recordar la importancia que tiene hacer una pausa durante las actividades clínicas diarias y reenfocar su energía.

Palabras clave: Salud Holística; Atención Integral de Salud, Condiciones de trabajo, Promoción de la salud.

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Introduction

The stress and pressure experienced by healthcare providers has rampantly intensified as a consequence of the extraordinary events surrounding the COVID-19 pandemic[1,2]. While healthcare workers in every country have accomplished an extraordinary service, it is clear that they are not exempt from suffering physical and emotional problems[3,4,5]. Providing the most appropriate strategies to support the overall wellness of these professionals is a necessity and an obligation that cannot be overlooked. Eighteen months of hardship due to COVID-19 has allowed us to collect the necessary data to strengthen the individual competencies of these professionals and to enable them to better respond, physically and emotionally, to the ordinary and extraordinary events they are facing[6,7].

Distance learning modalities are have become the main source of continuing education for healthcare professionals. This change is driven by the need to abandon clinical practices, in-person teaching sessions, laboratories, and one-on-one tutorials during the COVID-19 pandemic[8]. Multimodal strategies to provide health professionals with the tools they require to develop critical basic and clinical skills have been implemented in different contexts with the intention to minimize the educational gap[9,10,11,12]. Following this emerging trend, practitioner wellness skills have been a concern and a priority given the tremendous pressures confronted by these professionals during these times. Studies published during the pandemic revealed healthcare providers' appreciation and need for classes, workshops, and conferences that allow them to recall and learn practical techniques (micro-practices) that require minimal time to learn and to implement[13,14]. The central focus of this approach is to allow the practitioner to create key micro-moments where they can pause regular activities and tap into simple techniques to improve different aspects of their health (e.g., physical, emotional, and/or spiritual). From the physical health perspective, a key micro-moment can focus attention on characteristics such as how their body is feeling, their breathing, the need to drink water, and to perform a review of sleep deprivation. From the emotional health perspective they can review emotions, coping mechanisms, emotional intelligence skills, resilience, and optimism. From the spiritual health perspective, they can review practices such as mindfulness, visualization, meditation, and breathing exercises.

To determine the effects of a wellness intervention using micro-practices that was presented in workshops offered to two independent groups of healthcare providers before and during COVID-19, we proposed the following objective:

To describe with a mixed design study, healthcare professionals' pre-post descriptive measures of quality of life (subjective wellness), prolonged fatigue, as well as an improvement in overall wellness and satisfaction regarding micro-practices as a result of their participation in a wellness intervention before and during COVID-19.

Materials and Methods

Type of Study: The study had a mixed design with pre-post descriptive intervention quantitative measures and post qualitative measures.

Place of Study: The study location was Ciudad Juarez, Chihuahua, Mexico.
Participants: Group 1 (in person) was composed of a convenience sample of 47 healthcare providers (7 nurses and 40 primary care physicians) working in the private/public sector before the COVID-19 pandemic. Group 2 (Virtual) was also a convenience sample. It included 47 healthcare professionals (18 nurses and 28 primary care physicians) working in public sector clinics during the COVID-19 pandemic. Healthcare providers who received the intervention in Group 1 were ineligible to participate in Group 2.

Intervention description:

The wellness micro-practices intervention includes a curriculum adapted and expanded for healthcare providers from the initial proposals evaluated among non-health care providers and health science students[15,16] that were adapted and based on the Indivisible Self model developed by Myers and Sweeney[17,18]. The model, derived from the Wheel of Wellness, included five of the so-called second-order factors: the "Essential Self", which encompassed factors of spirituality, self-care, gender identity, and culture; the "Creative Self", which integrated the attributes of each person that make them unique among others, implying: thoughts, emotions, control, positive mood, and work; the "Coping Self", based on realistic character beliefs, such as coping with stress, self-esteem, and leisure; the "Social Self", which consisted of two components, friendship and love; and the "Physical Self", which involved physical activity and exercise.

Based on these second-order factors, we provided specific presentations to account for each domain, including micro-practices as a specific tool for healthcare providers and as a reinforcement foundation for each unit. In the Essential Self component, the content of the sessions included resilience, spirituality, identity, empathy, optimism, happiness, and self-compassion. In the Coping Self component, strategic resources for coping and change included a focus on the development of emotional and cognitive skills. Emotional intelligence, stress, and anger management were included in the Creative Self component. The Social Self component included creation, development, and maintenance of social

support networks. The Physical Self included physical activity to promote circulation and nutrition.

Micro-practices were derived from multimodal presentations using animation, comics, storytelling, readings, breathing exercises, mindfulness and visualization exercises that allowed for self-exploration of the second-order factors included in the Indivisible Self model, which is based on counseling theory[19,20].

Quantitative procedure and analysis:

Group 1 healthcare providers attended a 5-hour wellness course before the pandemic that consisted of two sessions of 2.5 hours; each session was separated by 1 week. Group 2 attended five, virtual, 1-hour sessions.

All participants completed the Quality-of-Life and Fatigue scales questionnaires at Time 1 (T1) before the workshop and at Time 2 (T2) after they completed each workshop. Only data from participants who completed all sessions were included in the results.

Measurements: Quality-of-life: The World Health Organization Quality-of-life is a self-administered survey that consists of 26 questions distributed across four factors: physical health, psychological health, social relations, and environment. The survey included questions regarding events and experiences over the previous 2 weeks. Each question had five response options based on a Likert scale (ranging from 1 (unfavorable) to 5 (favorable)). Both the English and Spanish versions of this scale have been found to have adequate psychometric properties, with a Cronbach alpha score >70[21].

Fatigue: The Multidimensional Fatigue Inventory (MFI-20) was used to measure prolonged fatigue among the participants. This self-administered survey consisted of 20 questions divided across five factors: General fatigue, Physical fatigue, Mental Fatigue, Reduced Motivation, Reduced Activity. The General Fatigue component referred to an individual's function, Physical Fatigue to physical sensations, Mental Fatigue to cognitive symptoms, Reduced Motivation to whether there was a lack of motivation to start any activity, and Reduced Activity to a frequently occurring reduction in activity[22].

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Qualitative analysis

Five questions about subjective perceptions of improvements in physical and emotional health, anger, stress, and subjective wellness (e.g., Do you feel that your emotional health after attending to the workshop is better, same, worst) were also included. Each question had three possible responses (i.e., better, same, or worst). Demographic information questions were also included.

Data Analysis: Descriptive data were analyzed using IBM SPSS v.22.0 software. Frequency distributions and mean and standard deviation values were calculated for demographic-related variables. ANOVA or independent sample t-tests were used to examine the significance of mean differences in outcome variables between the groups at T1 (before workshop) and T2 (after workshop). The effect of the wellness intervention on pre- and post-test scores was assessed using paired-sample t-tests comparing the factors corresponding to quality-of-life and prolonged fatigue. Chi-square tests were used to determine the independence of groups with regard to subjective perception of improvements in physical and emotional health, anger, stress, and changes in subjective wellness.

Qualitative procedure and analysis:

A thematic analysis approach was used to code qualitative responses to three open-ended questions and then extract themes and subthemes from the coded data.

The three open-ended questions asked respondents to convey (1) what they liked most about the workshop, (2) what they liked least, and (3) their opinion of the workshop.

Thematic analysis: The themes and subthemes that emerged from the thematic analysis of the qualitative responses directly related to the micro-practices of the open-ended questions were based on the framework proposed by Boyatzis[23]. The analysis was performed by three independent reviewers. Open-ended responses to the three qualitative questions were exported to a Microsoft Excel spreadsheet to allow the researchers to independently code the data. The researchers searched the responses for use or inference to the word micro-practices and proposed themes and subthemes rather than asking directly about micro-practices. The intention was not to ask directly about satisfaction with the micro-practices, but to look at the specific mention of micro-practices in the comments regarding what they liked most, what they liked least, and what they thought of the course.

Ethical Approval: Study was approved by the Bioethics committee from the Instituto Mexicano del Seguro Social and Autonomous University of Ciudad Juarez in Mexico.

Research involving secondary data analysis of data was exempted by the Texas Tech University Health Sciences Center Institutional Review Board, because information was recorded by the investigator in such a manner that the resulting dataset contains no information that can identify subjects, directly or through identifiers linked to the subjects.

Results

Quantitative results

Results of Group 1 before the pandemic:

This group included 27 (57.40%) women with 40 (85.10%) physicians and 7 (14.90%) nurses. The mean age of the participants was 47.98, with a standard deviation of 11.86. Table 1 presents the baseline data for Group 1 before and after the intervention, as well as the differences between the baseline measures (pre-test) and measures used at the end of the workshops (post-test). A positive outcome would be indicated by a difference (increase) between the two measures of the mean scores on the quality of life sub-scales. This increasing differential is present on all the sub-scales and with significant or borderline results (p = 0.05 or lower) on all but one of the Social Relations sub-scales with a value of p = 0.386. A difference (decrease) in terms of the two pre-post measures for the Prolonged Fatigue subscales in terms of mean scores can be considered a positive sign of improvement. All subscales decreased with the exception of one subscale with a small non-significant variation. The results were non-significant in all sub-scales with a significant result at the p =.05 limit in Reduced Motivation.

Table 1. Quality-of-Life and Prolonged Fatigue Subscales, Pre-Post results among Group 1.

Subscales	Group 1- Before Pandemic *n*=47		
Quality-of-Life**	Pre-test	Post-test	*p*
Physical Health	15.68 (2.26)	16.18 (2.24)	0.050*
Psychological Health	14.50 (2.55)	15.25 (1.92)	0.001*
Social Relationships	14.44 (2.87)	14.72 (2.82)	0.386
Environment	14.20 (2.00)	14.77 (1.84)	0.003*
Prolongued Fatigue***			
General Fatigue	10.32 (4.12)	10.02 (2.87)	0.407
Physical Fatigue	9.91 (4.31)	9.47 (2.99)	0.247
Reduced Activity	8.40 (2.62)	8.47 (2.74)	0.875
Reduced Motivation	7.34 (2.81)	6.85 (2.38)	0.050*
Mental Fatigue	8.38 (3.96)	7.87 (2.90)	0.313

* Statistically or borderline significant
** Mean scores were expected to increase as a positive sign
**Mean scores were expected to decrease as a positive sign
Source: Own data

Results for Group 2 during the pandemic:

This group included 30(63.80%) females with 19(40.40%) physicians and 28(59.60%) nurses. Ages mean 42.51 SD 7.86. Table 2 presents the baseline data for Group 2 before and after the intervention, as well as the differences between the baseline measures (pre-test) and the measures implemented at the end of the workshops (post-test). A positive outcome would be indicated by a difference (increase) between the two measures of the mean scores on the quality of life sub-scales. This increasing differential is present on all the sub-scales and with significant results (p<.001). A difference (decrease) in terms of the two pre-post measures for the Prolonged Fatigue subscales in terms of mean scores can be considered a positive sign of improvement. All subscales decreased with a significant difference in three sub-escales General Fatigue <.001 Physical Fatigue p =0.011 and Reduced Motivation p =0.034.

Table 2. Quality-of-Life and Prolonged Fatigue Subscales, Pre-Post results among Group 2.

Subscales	Group 2- During Pandemic N=47		
Quality-of-Life**	T1	T2	*p*
Physical Health	15.03 (2.26)	16.04 (2.21)	0.001*
Psychological Health	14.57 (2.55)	15.49 (1.90)	0.001*
Social Relationships	14.58 (2.87)	15.32 (2.79)	0.033*
Environment	14.52 (2.00)	15.46 (1.83)	0.000*
Prolongued Fatigue***			
General Fatigue	11.85 (4.10)	10.66 (2.84)	0.001*
Physical Fatigue	11.28 (4.30)	10.26 (2.96)	0.011*
Reduced Activity	10.30 (2.67)	9.64 (2.71)	0.084
Reduced Motivation	8.89 (2.78)	8.36 (2.35)	0.034*
Mental Fatigue	9.53 (3.92)	9.40 (2.88)	0.688

* Statistically or borderline significant
** Mean scores were expected to increase as a positive sign
**Mean scores were expected to decrease as a positive sign.
Source: Own data

Qualitative results

Group 1. Regarding the participants' self-perception of changes (same, better or worse) after participating in the wellness intervention in physical health, the results indicate that 61.7% stated they were the same and 38.3% were better. In Emotional health, 29.8% indicated the same, and 70.2% better. In Management of Anger, 34.0% same and 66.0% better and for Management of Stress 27.7% same and 72.3% better. Improvement on Wellness indicated 10.6% same and 89.4% better.

Group 2. Self-perception of changes (same, better or worse) after participating in the wellness intervention in regard to their physical health, 47.8% indicated feeling the same and

52.5% better. In Emotional Health, 34.8% reported the same and 65.2% better. In Management of Anger 30.4% same and 69.6% better, and Management of Stress reported 26.1% same and 73.9% better. Improvement on Wellness was 23.9% same and 76.1% better.

Qualitative analysis of the responses to open-ended questions.

Group 1 and 2 responses were grouped to simplify the analysis of themes and subthemes extracted and coded from the comments and presented in table 3. Total comments were 94; 26 (27.7%) were not related to micro-practices mentioned in any of the open questions. Group 1 participants' comments indicated a preference for micro-practices related to resilience and stories; Group 2 comments indicated a preference for stories; Stress and Anger management had the highest percentages. Micro-practices related to development and maintenance of social networks or being entertaining had the lowest percentages in both groups.

Table 3. Themes and subthemes by group1 and 2

Themes and subthemes	Group 1 η=47 N (%)	Group 2 η=47 N (%)
Other not related	12(25.5)	14(29.8)
Micro-practices Opinion		
Micro-practices useful	5(10.6)	11(23.4)
Micro-practices entertaining	2(4.3)	0(0.0)
Micro-practices Preferences		
Micro-practice Stories	8(17.0)	10(21.3)
Micro-practice Stress and Anger Management	6(12.8)	5(10.6)
Micro-practice Spiritual	5(10.6)	4(8.5)
Micro-practice Social Networks	1(2.1)	0(0.0)
Micro-practice Resilience	8(17.0)	3(6.4)

Source: Own data

Discussion

We hypothesized that participation in our wellness intervention with micro-practices would lead to an improvement in quality-of-life and a reduction in fatigue factors among healthcare providers, among the two groups attending before and during the COVID-19 pandemic. Participants who attended either virtually or in person benefited from the intervention experiences. The unexpected nature of these two interventions challenged our model in many ways. For example, moving from live to virtual and adapting to a complex and new situation due to the COVID-19 pandemic. In addition, presenting to groups of participants that were seated separately and wearing face protection to follow COVID-19 guidelines made it difficult for the speaker to assess possible reactions among the healthcare professionals in attendance. Finally, the news and the conditions in which the physicians were operating during the pandemic surpassed any imaginable scenario when, in one of the presentations, a silence was observed in honor of the colleagues who had died that morning as a result of COVID-19.

The model we adapt and integrate in our intervention has been extensively cited in different fields[24] and uses a holistic approach which has been considered effective[25].

The subjective appreciation of the participants regarding any posible change (same, better or worse) as a result of attending the workshops indicate few differences, although the studies were not planned to be a comparison.

Including micro-practices in the workshop for healthcare providers appeared to have been well received. Many of the comments included the benefits of learning, observing, and practicing the exercises performed in the workshop, which were linked to Indivisible Self model domains.

A number of important advances have been made in the response to the infectious challenges presented by the COVID-19 pandemic[26]. However, a critical opportunity will be missed if some of the many unmet needs highlighted by the pandemic are overlooked[27]. Possibly the most striking need for society is its dependence on healthcare workers during such an emergency[28].

One limitation of this study was the use of convenience samples. Participants were not selected from a randomized population and there was an uneven number of nurses. In addition, we could not find other studies that used the IFM-20 among physicians so that we could compare scores and determine whether the fatigue scores obtained in this study were high or low. The results of the only study we found that compared physicians (i.e., general practitioners in Venezuela) indicated that our sample had significantly higher scores for most scales[29]. Comparison with the results of some available nursing studies revealed that nurses' scores in general are higher than physicians, so it was very difficult to determine whether our sample scores were high or low, as no normative results could be found[30,31,32]. In addition, the sample included Mexican physicians and nurses and the results cannot be generalized to other healthcare professionals from different countries. However, the preparation of these professionals and the challenges they confront are very similar across countries and nationalities. Despite the limitations, it is valuable to consider further development of interventions using a theoretical model such as the Indivisible Self[17]. In addition, the advantages of micro-practices presented using multimodal active learning strategies (cartoons, comics,

storytelling, mindfulness practices, breathing exercises, and visualization)

Conclusions

The importance of wellness interventions, including those with holistic content, has been supported by the scientific evidence. Some important insights include consideration of evidence-based interventions rather than those motivated by political or financial factors. From a theoretical viewpoint, attainment of wellness requires a positive balance between two components, emotion and cognition. Given that emotional effects tend to be transitory and change frequently, the perspective that an individual applies to a situation is critical to determine whether that situation has a positive or negative effect on that individual over a short- or long-term period. Cognitive effects appear to have a lasting effect on an individual's life due to the possibilities of recording the event. For this reason, a model system that combines the key components of the "Indivisible Self" model is ideally suited for use in systematic and comprehensive wellness courses that include multimodal presentations.

Conflict of interest

There is no conflict of interest of any of the authors although is an ongoing work of Dr. Marie Leiner with other colleagues including the initial work. Interventions are delivered free of charge. There are no sponsors involved.

Authors' contribution

Conceptualization M.L., F.R.R., M.T.R. and B.M.; Methodology M.L., M.T.R.; Project Management M.L., M.T.R.; Data collection and analysis M.L., F.R.R., M.T.R. and B.M.; Writing, revising and editing the manuscript M.L., F.R.R., M.T.R. and B.M.

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