

EFFECTOS DE UN PROGRAMA DE
ENTRENAMIENTO EN MINDFULNESS Y
AUTOCOMPASIÓN SOBRE EL ESTADO
EMOCIONAL DE MÉDICOS Y ENFERMERAS
RESIDENTES DE ATENCIÓN FAMILIAR Y
COMUNITARIA Y SUS TUTORES: **PROYECTO
MINDUDD**



UNIVERSIDAD DE BURGOS

Doctorado en Educación

TESIS DOCTORAL:

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UNIVERSIDAD DE BURGOS

“Efectos de un programa de entrenamiento en Mindfulness y autocompasión sobre el estado emocional de médicos y enfermeras residentes de atención familiar y comunitaria y sus tutores: **PROYECTO MINDUDD**”

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<<La práctica de mindfulness en medicina es más que meditar y desarrollo personal. Es saber detenerse brevemente, mirar al paciente a los ojos y preguntar: “¿Eso es todo o hay algo más que saber?” y entonces, ese paciente cuya diabetes ha dejado de estar controlada, me dirá que no se ha ocupado de sí mismo desde que su esposa murió hace seis meses>>

Ronald Epstein

<<The practice of mindfulness in medicine is more than meditation and personal development. It is knowing how to stop briefly, look the patient in the eye and ask: “Is that all or is there more to know?” and then, that patient whose diabetes is no longer under control, will tell me that he hasn’t taken care of himself since his wife died six months ago>>

Ronald Epstein

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LISTADO DE ABREVIATURAS:

SIGLAS	SIGNIFICADO
SNS	Sistema Nacional de Salud
ZBS	Zona Básica de Salud
EAP	Equipo de Atención Primaria
MF	Médico de Familia
EF	Enfermería Familiar
MIR	Médico Interno Residente
EIR	Enfermero Interno Residente
FSE	Formación Sanitaria Especializada
BOE	Boletín Oficial del Estado
UDD	Unidades Docentes
MFyC	Medicina Familiar y Comunitaria
AP	Atención Primaria
EFyC	Enfermería Familiar y Comunitaria
AE	Agotamiento Emocional
DP	Despersonalización
RP	Realización Personal
MBSR	Minfulness Based Stress Reduction
MSC	Mindful Self-Compassion
FFMQ	Five Facet Mindfulness Questionnaire
SCS-SF	Self-Compassion Scale-Short Form
PSQ	Perceived Stress Questionnaire
MBI-SG	Maslach Burnout Inventory-General Survey
JSPE	Jefferson Scale of Physician Empathy
GADS	Goldberg Anxiety and Depression Scale
GAS	Goldberg Anxiety Scale
GDS	Goldberg Depression Scale

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1. Resumen

La presente tesis doctoral se realiza según la modalidad de tesis por compendio de artículos científicos. El esquema de trabajo establecido para lograr los objetivos planteados, se basa en un estudio compuesto por 4 artículos estructurados (uno de los cuales se encuentra en revisión) de dos diseños diferentes, uno exploratorio y otro, un ensayo clínico de tipo longitudinal.

Objetivos

Conocer los niveles de mindfulness y autocompasión y su relación con el estrés laboral en tutores y residentes de las especialidades de Medicina y Enfermería Familiar y Comunitaria

Comprobar si un programa de entrenamiento en mindfulness y autocompasión basado en una intervención de 4 sesiones (programa abreviado) es tan eficaz como el programa estándar de 8 sesiones en la reducción del estrés laboral y el burnout en tutores y residentes de Medicina y Enfermería Familiar y Comunitaria

Material y métodos

Para el desarrollo del presente proyecto, se creó el grupo de estudio MINDUDD (Mindfulness en las Unidades Docentes).

Se incorporaron al proyecto las Unidades Docentes de Córdoba, Jaén, Almería, Burgos, Ponferrada y Zaragoza

Se diseñó el protocolo de intervención (Estudio I de la tesis) y dos tipos de estudios diferentes: un estudio observacional transversal (Estudio II de la tesis) y otro de tipo longitudinal, experimental (Estudios III y IV de la tesis).

La muestra del estudio transversal estuvo formada por un total de 475 profesionales de atención primaria, de los cuales el 66.9% eran mujeres y el 33.1% eran hombres, cuya media de edad fue de 40.14 (DE±13.12). Con respecto a la categoría profesional, el 42.5% eran residentes de medicina y enfermería, el 29.3% médicos de familia y el 20.2% enfermeras. El 54.5% tenían conocimiento sobre el mindfulness, el 24.0% habían recibido formación del mismo y el 22.5% lo practicaban de forma regular.

El estudio longitudinal experimental fue un “Ensayo clínico controlado, aleatorizado por clúster, multicéntrico de tres brazos paralelos”. Se aleatorizaron 6 Unidades Docentes (ratio 1:1:1) a cada uno de los tres grupos de estudio: 1) Grupo Experimental-8 (GE8): ocho sesiones estándar; 2) Grupo Experimental-4 (GE4: una versión abreviada de cuatro sesiones; 3) Grupo control (GC), sin intervención.

Las intervenciones estuvieron basadas en el programa MBSR (Mindfulness Based Stress Reduction) al que se añadieron algunas de las prácticas de autocompasión que integran el programa MSC (Mindful Self-Compassion).

La intervención GE8 se llevó a cabo durante 8 sesiones semanales presenciales de 2,5 horas, mientras que la intervención GE4 constaba de 4 sesiones de 2,5 horas.

Los participantes debían realizar prácticas complementarias durante 45 minutos al día en el GE8 y 15 minutos al día en el GE4.

En los 3 grupos se administraron los cuestionarios FFMQ (mindfulness) y SCS (autocompasión). También se midió el nivel de empatía a través de la Escala de Empatía de Jefferson (EEMJ), trastornos de ansiedad y depresión mediante el cuestionario de Goldberg (EADG) y el estado de salud autopercebido.

Se llevó a cabo un análisis estadístico por intención de tratar. También un análisis de la comparabilidad inicial de los grupos y la evaluación del efecto de la intervención mediante análisis bivariado y multivariado, controlando los factores predictores y/o confusores, mediante Regresión Lineal Múltiple.

La muestra estuvo formada por un total de 112 profesionales sanitarios de atención primaria, de los cuales el 76.79% eran mujeres y el 20.21% eran hombres, cuya media de edad fue de 40.61 años ($DE \pm 12.61$). El 86.82% de los participantes trabajan en Atención Primaria, siendo el médico la categoría profesional más representada ($N=95$; 84.82%). La experiencia laboral media fue de 12.88 años ($DE \pm 13.15$). La muestra se distribuyó entre tutores y residentes (50 frente a 62).

Resultados

Los resultados mostraron que los niveles de mindfulness en los profesionales de atención primaria coincidieron con los observados en otros grupos de profesionales sanitarios. El 50.0% de los profesionales sanitarios de Atención Primaria presentaron niveles elevados de estrés. Los participantes que practicaban mindfulness presentaron niveles más bajos de estrés laboral.

El estudio experimental mostró que el programa de entrenamiento estándar (8 semanas) MBSR y MSC mejoraba los niveles de atención plena, autocompasión, ansiedad y depresión, en tutores y residentes de Medicina y Enfermería Familiar y Comunitaria manteniendo estos efectos en el tiempo. Sin embargo, el programa abreviado de 4 semanas no ha producido cambios significativos sobre estas variables.

Conclusiones

Este estudio aporta evidencia acerca de la eficacia de un programa MBSR y MSC estándar (8 semanas) sobre este colectivo de tutores y residentes. Los beneficios que aporta, invitan a incorporar esta formación en el plan docente de los residentes y tutores, al igual que se hizo anteriormente con la capacitación en Entrevista clínica y que supuso un salto cualitativo en la relación con el paciente.

Con respecto a la incorporación de programas abreviados, se requieren nuevos estudios que demuestren su eficacia

PALABRAS CLAVE: Sistema Nacional de Salud; Mindfulness; Atención Plena; Autocompasión; Estrés laboral; Burnout; Atención Primaria; Empatía autopercebida; Ansiedad; Depresión.

2. Abstract

The present doctoral thesis is carried out according to the thesis modality by compendium of scientific articles. The work scheme established to achieve the proposed objectives is based on a study composed of 4 structured articles (one of which is under review) of two different designs, one exploratory and the other, a longitudinal clinical trial.

Objectives

To know the levels of mindfulness and self-compassion and their relationship with work-related stress in tutors and residents of the specialty of Family and Community Medicine and Nursing.

Verify if a training program in mindfulness and self-compassion based on an intervention of 4 sessions (abbreviated program) is as effective as the standard program of 8 sessions in reducing work stress and burnout in tutors and residents of Family and Community Medicine and Nursing.

Material and methods

For the development of the present project, the MINDUUDD study group (Mindfulness in Teaching Units) was created.

The Teaching Units of Córdoba, Jaén, Almería, Burgos, Ponferrada and Zaragoza joined the Project.

The intervention protocol (Study I of the thesis) and two different types of studies were designed: a cross-sectional observational study (Study II of the thesis) and another of a longitudinal experimental type (Studies III and IV of the thesis).

The cross-sectional study sample consisted of a total of 475 primary care professionals, of which 66.9% were women and 33.1% were men, whose mean age was 40.14 (SD \pm 13.12). Regarding the professional category, 42.5% were medical and nursing residents, 29.3% family doctors, and 20.2% were nurses. 54.5% had knowledge about mindfulness, 24.0% had received training on it and 22.5% practiced it regularly.

The experimental longitudinal study was a "Three parallel arms, multicenter, cluster-randomized, controlled clinical trial." 6 Teaching Units were randomized (ratio 1: 1: 1) to each of the three study groups: 1) Experimental Group-8 (GE8): eight standard sessions; 2) Experimental Group-4 (EG4: an abbreviated version of four sessions; 3) Control group (CG), without intervention.

The interventions were based on the MBSR (Mindfulness Based Stress Reduction) program to which some of the self-compassion practices that make up the MSC (Mindful Self-Compassion) program were added.

The GE8 intervention was carried out for 8 weekly sessions of 2.5 hours, while the GE4 intervention consisted of 4 sessions of 2.5 hours.

The participants had to carry out complementary practices for 45 minutes a day in GE8 and 15 minutes a day in GE4.

The FFMQ (mindfulness) and SCS (self-compassion) questionnaires were administered in the 3 groups. The level of empathy using the Jefferson Empathy Scale (JEMS), anxiety and depression disorders using the Goldberg questionnaire (EADG), and self-perceived health status were also measured.

An intention-to-treat statistical analysis was carried out. Also an analysis of the initial comparability of the groups and the evaluation of the effect of the intervention by means of bivariate and multivariate analysis, controlling the predictive and/or confounding factors, by means of Multiple Linear Regression.

The sample consisted of a total of 112 primary care health professionals, of which 76.79% were women and 20.21% were men, whose mean age was 40.61 years ($SD \pm 12.61$). 86.82% of the participants work in Primary Care, with the doctor being the most represented professional category ($N = 95$; 84.82%). The mean work experience was 12.88 years ($SD \pm 13.15$). The sample was distributed between tutors and residents (50 vs 62).

Results

The results showed that the levels of mindfulness in primary care professionals were agree on those observed in other groups of health professionals. 50.0% of the Primary Care health professionals presented high levels of stress. Participants who practiced mindfulness had lower levels of work stress.

The experimental study showed that the standard training program (8 weeks) MBSR and MSC improved the levels of mindfulness, self-compassion, anxiety and depression, in tutors and residents of Family and Community Medicine and Nursing, maintaining these effects over time. However, the abbreviated 4-week program hasn't produced significant changes on these variables.

Conclusions

This study provides evidence about the efficacy of a standard MBSR and MSC program (8 weeks) on this group of tutors and residents. The benefits it brings invite us to incorporate this training into the teaching plan of residents and tutors, as was done previously with the training in Clinical Interview, which represented a qualitative leap in the relationship with the patient.

Regarding the incorporation of abbreviated programs, new studies are required to demonstrate their effectiveness.

KEY WORDS: National Health System; Mindfulness; Full attention; Self pity; Work stress; Burnout; Primary Care; Self-perceived empathy; Anxiety; Depression.

3. INTRODUCCIÓN

El Sistema Público de Salud Español y la Atención Primaria

El sistema de salud español está caracterizado por la coexistencia de tres subsistemas estatutarios: el Sistema Nacional de Salud (SNS); Fondos Mutuas de Atención a Funcionarios, Fuerzas Armadas y Poder Judicial (MUFACE, MUGEJU e ISFAS); y por último las Mutualidades Colaboradoras con la Seguridad Social dirigidas a la atención de Accidentes y Enfermedades Profesionales (1).

El SNS, diseñado en la Ley General de Sanidad de 1986 (2), constituye en España el conjunto de garantías para la protección de la salud de los ciudadanos, teniendo como prioridad garantizar una atención a todas las personas y superar los desequilibrios existentes a nivel territorial y social (3). Está basado en los principios de universalidad, libre acceso, equidad y justicia del financiamiento, y se encuentra financiado principalmente por Impuestos. La atención que se presta se divide en Atención Hospitalaria y Atención Primaria. En el Real Decreto 137/84, del 11 de enero, sobre estructuras básicas de salud, se establece la Zona Básica de Salud (ZBS) como el marco territorial de la atención primaria. El Centro de Salud es la estructura física y funcional desde la que se presta la atención sanitaria, y el Equipo de Atención Primaria (EAP), el conjunto de profesionales sanitarios y no sanitarios que atienden a la población de la ZBS.

Del conjunto de profesionales que conforman el EAP, el médico de familia especializado, el pediatra, la enfermería y el trabajador social ofrecen los servicios de prevención y cuidados agudos y crónicos. Este equipo, en función de los criterios de planificación se puede complementar con fisioterapeutas y odontólogos.

En el año 2019, se registraron 5,1 visitas por persona asignada y año a médicos de atención primaria y 2,8 a enfermeras de atención primaria (AP). Estas visitas se organizan de acuerdo con un conjunto de prescripciones y recomendaciones recogidas en una serie de protocolos y directrices que se concentran en tres programas diferentes: cuidado infantil, salud de la mujer y cuidado de adultos y personas mayores (4).

Debido a que los profesionales sanitarios de AP son el primer punto de contacto del sistema, desempeñan un papel clave en la notificación de enfermedades transmisibles y la monitorización de problemas concretos de salud pública como puede ser una epidemia (1).

Según la evidencia internacional, la fortaleza de la AP en el SNS se basa en la existencia de un sistema estructurado así como un paquete integral de beneficios y una continuidad efectiva de atención en todos los niveles. Esta afirmación se confirma con la satisfacción que los españoles presentan con respecto a la asistencia recibida por parte de los servicios de atención primaria en salud, considerándola como buena o muy buena por el 86% de la población (5).

Sin embargo, a pesar del fácil acceso a estos servicios, los datos recogidos en 2019 revelan que tan solo el 15,5% de la población que demanda asistencia es atendida el mismo día y el 23,8% de las personas declaran que preferirían un servicio privado (6). Además, con respecto a la población activa de AP de salud, donde las enfermeras tienen un papel importante en la promoción y prevención de la salud así como en la continuidad del estado de los pacientes con enfermedades crónicas, la proporción es de tan solo 0,85 enfermeras por cada médico (4).

En los últimos años, España ha vivenciado importantes cambios sociales que conllevan un aumento del uso de los servicios de Atención Primaria de Salud entre los que destacan el incremento de la población anciana y de patologías crónicas, los cambios de la estructuración familiar o nuevos estilos de vida y ambientes que han desencadenado nuevas necesidades y expectativas de la salud. A todo ello, se suma un aumento de la calidad y oferta de servicios, debido al progreso científico y tecnológico y por la mejor formación de los médicos de familia (MF), cuya función además de dar respuesta a los servicios que proporciona, es fomentar los valores que certifican su figura en la sociedad (7).

Estos valores pueden agruparse en cinco: compromiso con las personas, con la sociedad en general, con la continua mejora de su trabajo, con la especialidad en sí misma y con la ética (7).

El perfil profesional del MF se caracteriza por ser un todo integrado por aspectos psíquicos, físicos y sociales unidos a un ambiente familiar y social determinado que le permite proporcionar atención desde un enfoque biopsicosocial en su ámbito de actuación específico de Atención Primaria de Salud. A efectos pedagógicos este perfil profesional se refleja en cinco áreas docentes de competencias (7):

1. Esenciales: comunicación, razonamiento clínico, gestión y bioética.

El MF debe desarrollar una capacidad de escucha y empatía fundamental que favorezcan la adecuada relación con sus pacientes. Además, el colectivo de

personas con el que trabaja, presentan problemas de salud poco definidos en fases precoces y con frecuencia triviales, por lo que tiene que saber distinguir mediante un adecuado razonamiento clínico, las situaciones que son más graves frente a las que no lo son. Debido a que este profesional desarrolla diversas funciones a lo largo de su jornada laboral, debe aprender a organizar de manera eficiente su consulta, haciendo un uso adecuado de pruebas complementarias, recursos terapéuticos, interconsultas con profesionales de otras especialidades y herramientas informáticas. Todo ello, lo hará teniendo en cuenta los valores y aspectos éticos de la profesión.

2. Relativas a la atención al individuo.

El MF brinda atención a los individuos de manera continuada a lo largo de su vida desde una perspectiva integradora de aspectos biológicos, psíquicos y sociales de la salud y enfermedad. Debe tener las habilidades técnicas para llevar a cabo un proceso individual de atención sanitaria que requiere de un plan diagnóstico, terapéutico y de seguimiento. Además, valorará la necesidad de indicar al paciente actividades de promoción de la salud y prevención primaria y secundaria.

3. Relacionadas con la atención a la familia.

El MF debe entender la familia como un todo que actúa por un lado, como parte del contexto social en el que se desarrolla la vida y la salud y por otro, como un medio para la salud. Por ello, este profesional debe tener habilidades para asesorar, intervenir y mediar en el entorno familiar.

4. Relacionadas con la atención a la comunidad.

La orientación comunitaria del MF se enfoca por un lado a nivel personal, ya que todo individuo pertenece a un entorno del cual el profesional debe aprovechar sus recursos y minimizar sus carencias. Por otro lado, esta orientación se enfoca en considerar a la comunidad en su conjunto como un sujeto de atención donde debe identificar a los grupos de riesgo y programar e implementar intervenciones para afrontar los problemas de salud comunitarios, facilitando el acceso al sistema sanitario de aquellos individuos más vulnerables. En relación con esta competencia también se encuentra la del uso de sistemas de vigilancia epidemiológica que permitan controlar aspectos del ambiente, así como la de cooperar con diferentes organizaciones comunitarias e instituciones que tengan como objetivo la mejora de la salud del conjunto de la población.

5. Relacionadas con la formación e investigación.

El MF debe estar en un proceso de formación continua que mejore su competencia a nivel profesional al mismo tiempo que colabora en la formación de pregrado y postgrado en esta especialidad. Por otro lado, también debe saber realizar una correcta búsqueda bibliográfica, conocer bases de datos, recursos de documentación clínica y evaluar la calidad y la importancia de resultados obtenidos en diferentes investigaciones publicadas en revistas científicas.

Por otro lado, hay que tener en cuenta que el equipo básico de salud de esta especialidad, no solo se conforma por la figura del MF, sino también por la Enfermera Familiar y Comunitaria (EF). El objetivo principal de esta figura es participar a nivel profesional en el cuidado de la salud de las personas, las familias y las comunidades a lo largo de su ciclo vital teniendo en cuenta aspectos de promoción de la salud, prevención de la enfermedad, recuperación y rehabilitación. Al igual que el MF, la Enfermera Familiar y Comunitaria debe de tener en cuenta unos valores que guíen su actuación (8):

1. Compromiso y orientación a las personas, familias y comunidad.

Los protagonistas activos de la atención prestada por este profesional son los individuos en su ambiente natural junto a las familias y las comunidades. La actuación no solo se dirige a la intervención ante enfermedad sino que también, centra su foco de atención en mejorar y mantener la salud y bienestar.

2. Compromiso con la sociedad, la equidad y la eficiente gestión de recursos.

Este profesional tiene una alta responsabilidad en el uso eficiente de los recursos sanitarios en el sentido de evitar un riesgo para las personas y gastos innecesarios que prive de otros recursos a la sociedad. Debe fomentar la equidad en el acceso al sistema sanitario, eliminando cualquier tipo de barrera que lo dificulte. Además, desarrolla e imparte programas de salud dirigidos a cubrir la necesidad de los grupos sociales más desfavorecidos y colabora con organizaciones e instituciones que persiguen mejorar la salud del conjunto de la comunidad.

3. Compromiso con la mejora continua de la calidad.

El profesional se encuentra en continua actualización de sus conocimientos, habilidades y actitudes profesionales y toma sus decisiones en torno a ello.

4. Compromiso con la ética.

La EF actúa en base a los principios de bioética (muy especialmente se compromete con el principio de autonomía) y garantiza el respeto a cada uno de los individuos del sistema sanitario.

5. Compromiso con la seguridad de los usuarios y pacientes.

Fomenta y desarrolla el conocimiento y la cultura de seguridad de todas las personas a las que atiende. También ayuda y forma parte de proyectos que promueven prácticas seguras.

6. Compromiso con el desarrollo profesional.

La EF se compromete con el desempeño de su profesión y en particular con el de su especialidad que interviene con las familias, las comunidades y la salud pública.

El especialista MIR y EIR de Atención Familiar y Comunitaria: formación del MIR y EIR. La figura y la función del Tutor de Residentes

Para garantizar que estos profesionales proporcionen un buen servicio y den respuesta a las demandas de salud de la sociedad presentes en la actualidad, deben recibir una formación de calidad. Con este fin se crearon los programas de formación postgrado para Médico Interno Residente (MIR) y Enfermero Interno Residente (EIR) a partir de los cuales el profesional lleva a cabo un proceso de formación y posterior especialización en una rama sanitaria de su elección.

a. Médico Interno Residente (MIR)

En la década de los 60 se inician los primeros contratos de formación a médicos para distintas especialidades en el Hospital General de Asturias en Oviedo, la Clínica Puerta de Hierro en Madrid y el Hospital Clínico en Barcelona. Siendo en el año 1976 cuando se consolida el sistema de formación MIR.

Este proceso de formación puede realizarse únicamente en aquellos centros que se encuentren acreditados por el Ministerio de Sanidad y Consumo de España (9).

El término hace referencia por un lado al propio examen de acceso, por otro al programa de formación de entre dos y cinco años y por último, al médico que se está formando como especialista.

El acceso a las plazas ofrecidas se realiza mediante el conocido “Examen MIR” El examen MIR se convoca de manera anual por el Ministerio de Sanidad, el cual informa acerca de las plazas existentes, de los centros sanitarios en los que pueden realizarse las especializaciones y de las fechas del examen. Una vez realizado el examen, los aspirantes son ordenados en función de la nota final obtenida y se elige la especialidad a cursar.

Tras la superación de esta prueba selectiva, el médico residente debe desempeñar un conjunto de actividades durante un periodo de formación para realizar estudios y prácticas de posgrado dentro de la especialidad médica a la que han tenido acceso a través la nota obtenida en el examen. Acceden a una formación mediante una práctica profesional durante un tiempo variable en función de la especialidad. Esta formación es tutelada y evaluada con el objetivo de que el MIR consiga los conocimientos y compromisos necesarios de cada especialidad. En la actualidad las distintas especialidades tienen una duración entre cuatro y cinco años.

b. Enfermero Interno Residente (EIR)

La formación EIR es mucho más reciente, teniendo su inicio en el año 2010. El EIR hace referencia a las siglas que corresponden a Enfermero Interno Residente y forma parte de la Formación Sanitaria Especializada (FSE).

Del mismo modo que el MIR, el EIR hace referencia al examen de acceso, a un programa de formación y al enfermero que tras haber superado el examen se encuentra realizando el periodo de formación. A diferencia del MIR, el periodo de formación es más breve con una duración de 2 años.

Igual que el MIR, el examen EIR es convocado de manera anual por el Ministerio de Sanidad y publicado en el Boletín Oficial del Estado (BOE), donde se indica todos los pasos a seguir durante este proceso. Una vez superado el examen, se elige la especialidad en función de la nota obtenida, así como el lugar donde se quiere llevar a cabo la estancia.

Una de las ramas de elección en ambas profesiones es la especialidad en Medicina y Enfermería Familiar y Comunitaria en la cual centra su atención el presente trabajo.

Características generales del programa de Medicina Familiar y Comunitaria (MFyC) (9,10)

A raíz de la Declaración de Alma Ata de 1978 en la que la OMS reconoce oficialmente que la base de la Salud universal pivota en la Atención Primaria, en 1979 se crea la especialidad MIR de Medicina Familiar y Comunitaria.

Cabe decir, como anécdota, que este doctorando pertenece precisamente a dicha primera promoción de MFyC.

Este proceso de formación especializado cuya duración es de cuatro años, es imprescindible para obtener el título de Médico Especialista en Medicina Familiar y Comunitaria y poder ejercer la profesión en cualquier institución del SNS.

El programa organiza sus contenidos formativos en áreas docentes acordes con las áreas de competencia descritas con anterioridad, de tal forma que se encuentre vinculado con el perfil especialista de médico de familia.

Este programa es flexible en cuanto a los métodos de aprendizaje, ya que no se le da tanta importancia al cómo se aprende si no, el qué se aprende. Este programa también se caracteriza por la pluripotencialidad de la formación que imparte, ya que proporciona los conocimientos necesarios tanto para ejercer en los centros de salud como en otros entornos laborales en los que también es demandado, como puede ser Servicio de urgencia de Atención Primaria y Hospital, Mutuas y la Sanidad Penitenciaria. Hay que tener en cuenta que, no es un programa formativo cerrado en cuanto a contenidos docentes, sino, que se encuentra abierto a la incorporación de nuevos recursos en las Unidades Docentes con el fin de poder mejorar y ampliar la formación del residente.

El tutor principal, cuya figura se explica más adelante, se encarga de supervisar y hacer un seguimiento del cronograma de formación elaborado de manera individual para cada residente, en el seno de la Comisión Asesora. Estos planes son adaptados a las características y recursos de cada Unidad Docente así como de cada residente. Todo plan debe garantizar que se produzca un contacto inicial de entre tres y seis meses del residente con la AP, que el 50% de la residencia al menos sea desempeñada en el Centro de Salud y que se realice un tiempo de estancia todos los años en el Centro de Salud.

Características generales del programa de Enfermería Familiar y Comunitaria (EFyC) (11)

Para obtener la especialidad, las residentes deben llevar a cabo un programa de formación en Unidades Docentes Multiprofesionales de esta especialidad durante un periodo de dos años.

El programa de residencia de esta especialidad se basa en el aprender haciendo, de tal manera que la formación práctico-clínica constituye su eje central. Del mismo modo que se realiza en el Programa de MFyC, el residente cuenta con un tutor que propone el plan individualizado que debe seguir, de acuerdo a la guía formativa aprobada por la Comisión de Docencia. El 60% de la formación debe desempeñarse en el Centro de Salud donde desempeñará sus actividades, tanto en los domicilios de los pacientes como en la consulta.

En el primer año de formación y al final del segundo año, se realiza una rotación durante un mínimo de cuatro meses en el centro de salud donde trabaje el tutor. El tiempo restante se distribuye en otros dispositivos.

El seguimiento del proceso formativo, así como su calificación, se llevará a cabo mediante una evaluación formativa continua, anual y final.

El tutor de residentes

Debido al continuo contacto existente entre residente y tutor en ambas profesiones, éste se convierte en una figura de gran relevancia que forma parte del programa de formación (10).

El tutor es un profesional de la medicina o enfermería acreditado para poder favorecer el aprendizaje de conocimientos, destrezas y actitudes concretas de la especialidad en el residente, y que por tanto, se compromete a formar parte de su proceso de enseñanza-aprendizaje de manera activa.

El tutor debe tener por un lado un perfil competencial concreto y ser un buen docente con habilidad para transmitir conocimientos y manejar las relaciones interpersonales. Además, se encarga de planificar, dirigir y evaluar el proceso de formación del residente debiendo cumplir por tanto las siguientes funciones (10):

- Orientar durante todo el proceso formativo
- Supervisar la formación del residente mediante las fichas que recoge el programa y estableciendo un calendario de reuniones periódicas para examinar entre ambas figuras el modo en que está llevándose a cabo la formación.

- Llevar a cabo actuaciones dirigidas a mantener la motivación, ya que debe ser reconocido por parte de la Administración con el fin de compensar el esfuerzo que conlleva esta tarea.

- Aplicar criterios que garanticen la adecuación de los nombramientos de tutores.

La relación que se establece entre el residente y el tutor es fundamental para el proceso formativo. El tutor, además de requerir un nivel de conocimientos concretos, debe mostrarse accesible y cercano en todas las fases del periodo de formación fomentando el proceso de aprendizaje.

El tutor principal se encarga de adaptar el cronograma del periodo formativo a las necesidades y características personales de cada residente al que tutorice, haciendo los cambios pertinentes para corregir las posibles deficiencias formativas que se produzcan durante la residencia.

A pesar de que estos programas de formación estén diseñados para que el residente en formación asuma responsabilidades de manera progresiva, la aparición de estrés y otros síntomas durante las diferentes etapas de la formación resulta inevitable. Con respecto al MIR los años más críticos son el primero debido a la falta de práctica tanto de conocimientos como de habilidades, y el cuarto y último año donde se pone en práctica los conocimientos adquiridos en situaciones reales pasando la consulta al completo durante cuatro horas y media, junto con el desempeño del resto de actividades que conlleva esta profesión. Esto mismo ocurre en el caso del EIR, ya que aunque la duración de la formación es menor, viven una situación estresante similar.

Por otro lado, un factor estresante que comparten tanto los MIR como los EIR son las guardias en los servicios de urgencias, así como las rotaciones cortas que deben de hacer en los hospitales, sintiéndose meros observadores.

Sin embargo, este incremento de los niveles de estrés no solo se producen en los residentes, sino también en el tutor que se encarga de su formación, ya que además de desempeñar sus propias funciones como profesional, también se responsabiliza de

supervisar el trabajo que realiza el residente, con el que comparte el mismo espacio de consulta

Burnout y estrés laboral. Incidencia en los profesionales sanitarios en España

Burnout

Debido a lo anteriormente expuesto y a la alta carga sanitaria del SNS, el burnout y el estrés laboral son considerados dos de los problemas más frecuentes presentes en el personal sanitario (12).

El burnout se puede definir como un síndrome tridimensional caracterizado por agotamiento emocional, una actitud fría y despersonalizada en la relación con los demás y un sentimiento de baja realización personal que puede ocurrir entre individuos que trabajan en contacto directo con clientes y/o pacientes. Es decir, la persona con burnout presenta una alta carga emocional, actitudes distantes hacia el trabajo en general y las personas con las que trabaja y una autoevaluación negativa de su competencia y logros laborales (13,14).

Estos componentes se definen por Maslach et al. en su Manual de Inventario de Burnout de Maslach (15):

- *Agotamiento emocional (AE)*. Es el rasgo fundamental. Con disminución de recursos emocionales y personales del profesional. Se traduce en fatiga mental, física y emocional no proporcional a la carga de trabajo. Puede incluir síntomas indistinguibles de los depresivos.
- *Despersonalización (DP)*, consecuencia del AE. La falta de recursos emocionales lleva al profesional a protegerse frente al usuario, deja de verlo como una persona y lo trata como un objeto. Se inicia una falta de empatía y de implicación, mostrándose distanciado y cínico. Utiliza etiquetas despectivas para referirse a los demás, o tratando de culparles de sus frustraciones y del descenso de compromiso laboral.
- *Baja Realización personal (RP)*, factor protector frente al burnout. El profesional con realización personal alta está motivado, siente que influye positivamente sobre la vida de los pacientes, y es capaz de tratar los problemas emocionales con calma y seguridad. En el burnout aparece una sensación de inadecuación profesional. Aparecen sentimientos de incapacidad, baja

autoestima e ideas de fracaso. Se considera una dimensión relativamente independiente de las anteriores.

Este síndrome conlleva repercusiones negativas a nivel psicosomático, conductual, emocional, actitudinal, social y organizativo, tanto para los profesionales que lo sufren como para las personas que reciben su servicio. De esta manera, quien lo padece puede desencadenar problemas de ansiedad, irritabilidad, insomnio, depresión y consumo de drogas. Todo ello se encuentra estrechamente relacionado con una disminución del rendimiento laboral y problemas de salud como consecuencia de los altos niveles de estrés (16).

Los profesionales sanitarios deben tratar a un elevado número de pacientes con intervalos de tiempo insuficientes entre ellos, exponiéndose diariamente a la enfermedad, y al dolor, con una falta de autonomía y autoridad en la toma de decisiones y una falta de especificidad de las tareas a desempeñar (17,18). Diferentes estudios han demostrado que esta sobrecarga de trabajo donde el profesional no dispone de tiempo suficiente para cumplir con las demandas laborales y brindar el apoyo emocional necesario a los pacientes, favorece el desarrollo del burnout (19,20).

Diferentes estudios han demostrado que al menos uno de cada cinco profesionales del sector sanitario presenta síntomas relacionados con el burnout. Si bien es cierto, uno de los factores protectores con el que cuenta los profesionales de AP es el trabajo en equipo, a través del cual se consigue un trabajo de mayor calidad, más productividad y efectividad, favoreciendo así la disminución del estrés psicosocial (21).

A pesar de ser mayor el número de estudios realizados en atención especializada y no tanto en AP, del equipo de profesionales que conforman la AP, son los médicos quienes han presentado niveles más altos de burnout (22).

Este proceso de desgaste profesional o burnout se encuentra relacionado con la capacidad de afrontar el estrés unido a la satisfacción laboral que presenta el profesional en su puesto de trabajo (23,24).

Estrés laboral

El estrés laboral se puede definir como el proceso biológico y psicológico que se experimenta cuando hay una falta de coordinación entre las responsabilidades, conocimientos, habilidades, necesidades y expectativas de la persona, inhibiendo su capacidad de afrontamiento (25). El entorno laboral en el que se desenvuelve el profesional sanitario se caracteriza por la presencia de una gran variedad de factores estresantes. Entre ellos, se destaca la rapidez con la que debe responder a las necesidades tanto de los pacientes como de sus familiares. Además, los conocimientos y procedimientos médicos incluyen limitaciones e incertidumbres y cualquier error que se cometa puede ser perjudicial y en ocasiones irreversible para la vida del paciente. Si el profesional es además tutor, se le suma el trabajo de supervisar la formación del residente, lo que conlleva a una sobrecarga laboral generando un mayor estrés y agotamiento (26).

Con respecto al médico residente, el reto de atender directamente a los pacientes y la cantidad de materias que tiene que estudiar, les desencadena altos niveles de estrés. Además, presentan otra serie de dificultades que pueden identificarse como estresantes para este colectivo como problemas a nivel económico, presión psicológica y física por parte de sus superiores y pacientes o conflictos, ambigüedades y sobrecarga de roles (27).

Aunque cierto nivel de estrés puede ser beneficioso para mejorar el rendimiento laboral, someterse diariamente a altos niveles de estrés puede conllevar problemas de salud y un peor rendimiento en el trabajo. Es por ello que numerosos estudios sugieren adoptar una forma integral para abordar las consecuencias físicas y psicológicas del estrés laboral en este colectivo. Es decir, que además de adoptar medidas que permitan una mejor organización del trabajo y de las condiciones laborales, también se debe facilitar herramientas individuales de manejo de estrés, basadas en la aceptación de la realidad y la autorregulación emocional (27,28)

Sin embargo, a pesar de la variedad de investigaciones que han demostrado el efecto beneficioso de este tipo de herramientas e instrumentos sobre el funcionamiento psicológico de los profesionales de la salud en aspectos como la atención, autocompasión, ansiedad, agotamiento emocional y estrés, aún no existe un protocolo de actuación claro para prevenir y tratar los síntomas emocionales y psicológicos causados en el entorno laboral (29–32).

Hasta ahora las principales estrategias implementadas en España para hacer frente a este problema, se han basado en intervenciones dirigidas a mejorar o apoyar las habilidades de afrontamiento individuales (33–35).

Mindfulness y compasión

Diferentes estudios han demostrado que la práctica regular de intervenciones de atención plena o meditación han conseguido resultados positivos sobre el manejo del estrés, el agotamiento, la empatía y los niveles de satisfacción de los profesionales de la salud y de sus pacientes (36–38).

La atención plena fue definida originalmente por Kabat-Zinn en 1979 como la capacidad de prestar atención a las experiencias del momento presente, aceptándolas y sin juzgar (39). “Atención plena”, o “estar atento” o “estar presente” implicaría que uno se concentra en la tarea que está realizando en ese momento, sin que la mente divague sobre el futuro o el pasado, y sin sensación de apego o rechazo. Esta aproximación produce al individuo energía, claridad de mente y alegría. Además, «estar atento» es una cualidad que puede desarrollarse mediante un entrenamiento adecuado (40).

La atención plena tiene sus raíces en la filosofía budista, pero su construcción actual va más allá de los conceptos religiosos y es susceptible de entrenamiento y mejora (39).

Las prácticas de atención plena implican una mezcla entre atención enfocada y monitoreo abierto, dado que la mayor parte de las sesiones comienzan con un periodo de atención focalizado en un objetivo como puede ser la respiración para enfocar la conciencia, seguido por un proceso de monitoreo abierto (41). El modelo desarrollado por Vago y Silbersweig propone que la práctica de la atención plena conlleva tres capacidades relacionadas con uno mismo: autoconciencia (entrenamiento mental sistemático que desarrolla la metaconciencia), autorregulación (capacidad de modular de manera efectiva el propio comportamiento) y autotranscendencia (relación positiva entre uno mismo y los demás que aumenta las características prosociales) (42).

Mindfulness es el término inglés que comúnmente se utiliza para hacer referencia a los programas de meditación basados en la atención plena. Este tipo de práctica de meditación se focaliza en entrenar la autorregulación de la atención y la conciencia para mejorar el control de los procesos mentales, aumentando el bienestar de quien la lleva a cabo (41,43).

El protocolo más conocido utilizado tanto en el contexto clínico como en el normal, es el programa de entrenamiento de reducción del estrés basado en la atención plena conocido como Mindfulness Based Stress Reduction (MBSR) desarrollado por Kabat-Zinn (44). Este programa consiste de ocho sesiones grupales de 2,5 horas a la semana junto con una dedicación de 45 minutos diarios de práctica en casa durante seis días a la semana. Debido a la cantidad de tiempo que se debe dedicar para llevar a cabo la práctica del programa, se ha intentado reducir su duración a intervenciones abreviadas de cuatro semanas con el fin de hacerlas más viables y accesibles, al mismo tiempo que se mantienen sus beneficios adaptándose a las diferentes poblaciones y contextos (45–48).

En la revisión sistemática de Kriakous et al. (48) llevada a cabo con investigaciones recientes, proporciona evidencia a cerca de la efectividad que presentan los MBSR tradicionales de 8 semanas sobre la mejora de aspectos del funcionamiento psicológico en profesionales sanitarios de diferentes especialidades. Entre estos aspectos se destaca la reducción de la ansiedad, la depresión y el estrés, así como un aumento de la autocompasión. Además de estudios que utilizan el programa tradicional de 8 semanas, también se incluyen otros que implementaron programas abreviados de entre 3 y 6 semanas de duración. Los programas de 6 semanas produjeron mejoras significativas en el estrés, el agotamiento, la atención y la autocompasión. Con respecto a los resultados obtenidos en los programas de 4 semanas, se obtuvieron mejoras significativas sobre la angustia psicológica, la ansiedad, la depresión, el estrés y la atención plena. Además, los programas implementados con una duración de 3 semanas o menos, también redujeron de manera significativa los niveles de ansiedad, depresión, estrés y agotamiento, con mejoras significativas sobre la atención plena. Sin embargo, estos programas fueron implementados en profesionales sanitarios de diferentes especialidades, pero no se incluyeron profesionales sanitarios en formación debido a que se considera que esta población presenta diferentes factores estresantes.

Por otra parte, hasta el momento no se han realizado estudios que aporten evidencias sólidas sobre la eficacia del MBSR abreviado en profesionales sanitarios, especialmente en tutores y especialistas internos residentes de Medicina y Enfermería Familiar y Comunitaria.

Compasión y Autocompasión

El significado otorgado en español a la palabra “compasión”, se aleja del uso que se le da en otros contextos e idiomas: presupone cierta superioridad de quien la siente, con gran arraigo en la tradición judeocristiana.

Es por tanto radicalmente diferente de la que se usa en mindfulness, donde se presupone que es un sentimiento entre iguales. Los libros sobre mindfulness que incluyen compasión traducidos al español, suelen ser cambiados de título para evitar un rechazo inicial.

La compasión se entiende como la conciencia profunda del sufrimiento de los demás y el deseo de aliviarlo. El término “compasión” se deriva del latín, uniendo “*pati*” y “*cum*” que juntas significan “sufrir con”. Se traduce en una respuesta empática hacia el sufrimiento de los demás que implica una intención o acción de aliviar este sufrimiento (49).

Mientras que las prácticas de atención plena requieren enfocarse en un objeto focal o en una parte componente del yo, como la percepción, la emoción, la cognición o la intención, la meditación compasiva requieren del yo como objeto de práctica (50).

La autocompasión es definida por Kristin Neff como "estar abierto y conmovido por el propio sufrimiento, experimentar sentimientos de cariño y bondad hacia uno mismo, adoptar una actitud comprensiva y sin prejuicios hacia las propias deficiencias y fracasos, y reconocer que la propia experiencia es parte de la experiencia humana común” Según Neff, la autocompasión incluye por tanto tres facetas: bondad hacia uno mismo, humanidad compartida y atención plena/minfulness (51).

La autocompasión es una herramienta de apoyo muy importante para los profesionales de la salud ya que es necesario que sepan respetarse y aceptarse a ellos mismos para poder transmitir esas mismas emociones a los destinatarios de sus servicios. La autocompasión es un factor de resiliencia que permite adoptar una mentalidad de crecimiento y establecer metas dirigidas hacia el crecimiento personal. Se encuentra vinculada a una menor psicopatología, reducción de los niveles de estrés y mayor bienestar. Relacionado con este aspecto se encuentran programas como el Mindful Self-Compassion (MSC) que ha logrado reducir los niveles de estrés laboral de los profesionales sanitarios. Es común encontrar este término incluido en los programas de formación con el objetivo de conseguir una buena relación entre el profesional y el paciente y mejorar sus parámetros clínicos y psicológicos. Relacionado con este aspecto,

se encuentran programas como el Mindful Self-Compassion (MSC), que ha logrado reducir los niveles de estrés laboral de los profesionales sanitarios. Es común encontrar este término incluido en los programas de formación con el objetivo de conseguir una buena relación entre el profesional y el paciente y mejorar sus parámetros clínicos y psicológicos (50,52).

Estos programas también resuden la autocrítica y enseñan a aceptarse a uno mismo aumentando así sus niveles de felicidad y resistencia psicológica (53).

Como se ha indicado anteriormente, la práctica de mindfulness requiere observar, describir y actuar con conciencia y sin juzgar. De esta manera, los profesionales sanitarios que lleven a cabo estas técnicas, tendrán una autoconciencia más desarrollada o una atención plena completa que les permitirá tener un alto nivel de autocuidado y una mejor capacidad para relacionarse y empatizar con los pacientes sin experimentar estrés adicional.

Empatía

La empatía se define como la capacidad general que una persona tiene de identificarse con los estados emocionales de los demás. Esta respuesta empática hacia el sufrimiento de los pacientes puede desencadenar dos tipos de reacciones: por un lado, la angustia empática o angustia personal manifestada en una respuesta aversiva y orientada hacia uno mismo al sufrimiento de los demás con el deseo de alejarse de la situación para protegerse; y por otro la compasión o preocupación empática, que conlleva una preocupación por la dolencia de la otra persona junto con una necesidad de ayudar. En función de la tendencia que se tenga de responder hacia los sentimientos de los demás, se producirá una respuesta u otra (54).

La empatía se considera un requisito necesario que el profesional debe tener para crear una buena relación con el paciente. A pesar de que el término no está definido en la literatura internacional, componentes como la capacidad del profesional para reconocer las experiencias internas y el estado emocional del paciente, comunicarle ese reconocimiento y responder con una conducta positiva, son elementos reconocidos de manera universal (55–57).

La atención proporcionada al paciente desde un compromiso empático, ha demostrado beneficios tanto para el profesional como para el paciente. Este compromiso se ha relacionado con una disminución del dolor y la ansiedad del paciente, así como una

mayor satisfacción y adherencia al tratamiento produciendo una mejora sobre los resultados clínicos (58,59). Diferentes estudios han demostrado que los médicos empáticos también presentan mayores niveles de bienestar y habilidades clínicas y menos agotamiento que conlleva a disminuir el riesgo de cometer negligencias médicas (60–62).

Ansiedad

Otros dos de los factores a tener en cuenta ante la presencia de los altos niveles de estrés laboral son la presencia de ansiedad y la depresión en el profesional. Una variedad de estudios han demostrado que el estrés derivado del trabajo de los profesionales sanitarios repercuten de manera negativa sobre diferentes funciones cognitivas y conduce a elevados niveles de ansiedad y depresión que conlleva consecuencias negativas a nivel profesional y personal (63–65).

La ansiedad se conoce como un estado psicológico y fisiológico que se caracteriza por presentar una combinación de componentes cognitivos, somáticos, emocionales y conductuales que desencadenan un sentimiento desagradable de ansiedad, miedo o preocupación. Presentar ciertos niveles de ansiedad puede ayudar a manejar situaciones de estrés o amenaza, sin embargo cuando se vuelve excesiva y permanece en el tiempo puede convertirse en un trastorno de ansiedad. Este trastorno de ansiedad afecta de manera negativa sobre la calidad de vida de la persona y se relaciona con otros problemas psiquiátricos como la depresión (65). La ansiedad de los médicos y enfermeros que se encuentran en contacto directo con los pacientes, repercute sobre su razonamiento mental y sus habilidades de pensamiento provocando una falta de atención y coordinación. Además la presencia de ansiedad disminuye la capacidad de resolución de problemas y conduce a una disminución de la eficiencia de los servicios que se prestan a los pacientes (66).

Depresión

La depresión puede definirse como un trastorno del estado de ánimo con un sentimiento persistente de tristeza y pérdida de interés que se mantiene en el tiempo. Algunos de los síntomas característicos de este trastorno son los relacionados con la irritabilidad, alteraciones del sueño, fatiga y problemas de concentración. Diferentes estudios han demostrado la alta incidencia de trastornos de depresión en los profesionales sanitarios, así como en los médicos residentes en formación. Además se ha demostrado

que existe una correlación positiva entre los síntomas de ansiedad y el estado de ánimo y los altos niveles de estrés en el entorno laboral (67–69).

Se hace evidente que el profesional sanitario, así como el residente en formación, se encuentran sometidos a altos niveles de estrés y sobrecarga laboral que conducen al agotamiento y otros síntomas psicológicos graves, afectando de manera negativa sobre su desempeño laboral. Sin embargo, estos aspectos pueden prevenirse o mejorarse mediante la implementación de herramientas o intervenciones de atención plena o meditación, a través de las cuales se obtienen mejoras sobre el manejo del agotamiento y otros factores como el estrés, la empatía, la ansiedad y la depresión. El adecuado manejo de estos aspectos implica una mejora tanto a nivel personal como laboral del profesional sanitario que repercute significativamente en la calidad del servicio, así como en la satisfacción del servicio recibido por parte del paciente.

Los programas de atención plena o mindfulness han demostrado ser efectivos sobre el manejo de estos aspectos sin embargo son programas de larga duración que implican mucha dedicación y por consiguiente en ocasiones no resultan accesibles. De este modo, si la versión abreviada de estos programas fueran igual de efectivos que los tradicionales, podría plantearse su mayor facilidad de implementación en el profesional sanitario así como su inclusión en los programas de formación, en concreto en los tutores y especialistas internos residentes de la rama de Medicina y Enfermería Familiar y Comunitaria. De esta forma se podría conseguir la mejora de su salud emocional y satisfacción del profesional sanitario, así como de sus pacientes.

Justificación del estudio

En nuestro Sistema Nacional de Salud, el número de profesionales sanitarios que presentan estrés laboral e incluso burnout, es elevado (20).

Diferentes estudios han demostrado que la práctica regular de intervenciones de atención plena o meditación han conseguido resultados positivos sobre el manejo del estrés, el agotamiento, la empatía y los niveles de satisfacción de los profesionales de la salud y de sus pacientes (36–38).

El número de estudios al respecto en España aún no es numeroso.

Este estudio se centra en dos colectivos especiales: tutores y residentes de la especialidad de Medicina y Enfermería Familiar y Comunitaria; dos grupos profesionales clave para el sistema sanitario. Ambos presentan un estrés añadido debido a la sobrecarga

de trabajo y responsabilidad que asume del tutor, así como a la responsabilidad progresiva que tiene que adquirir el residente.

Hasta el momento, no se han llevado a cabo en nuestro país estudios basales ni intervenciones sobre estos dos colectivos.

Por ello, esto justifica ambas actuaciones: por un lado, conocer los niveles de mindfulness, autocompasión, empatía, estrés laboral y burnout de tutores y residentes, y por otro, proponer una intervención al respecto.

Por otra parte, dado que se trata de profesionales muy sobrecargados de actividad asistencial y formativa, es importante explorar la eficacia de intervenciones más breves que la estándar (4 semanas en lugar de 8 semanas).

En caso de resultar beneficiosa este tipo de intervención, sería idóneo incorporarla en el programa formativo.

4. OBJETIVOS E HIPÓTESIS

OBJETIVOS E HIPÓTESIS DEL ESTUDIO

El objetivo general de esta tesis fue evaluar la eficacia de un programa de entrenamiento en mindfulness y autocompasión sobre el estado emocional en tutores y residentes de Medicina y Enfermería Familiar y Comunitaria, así como analizar si la efectividad varía en base a la temporalidad del mismo.

En cuanto a los objetivos específicos se plantearon los siguientes:

- ❖ **Objetivo 1:** Analizar los niveles de mindfulness en los especialistas de Atención Primaria españoles y otros grupos de profesionales sanitarios y su relación con el estrés laboral y las características sociodemográficas y laborales básicas.
- ❖ **Objetivo 2:** Comparar la efectividad entre un programa MBSR y MSC abreviado frente a uno estándar, sobre los niveles de mindfulness, autocompasión y empatía autopercebida en tutores y residentes internos de Medicina y Enfermería Familiar y Comunitaria adscritas a seis UDD del SNS.
- ❖ **Objetivo 3:** Analizar la efectividad de un programa MBSR y Autocompasión (MSC) abreviado en relación a uno estándar sobre los niveles de ansiedad y depresión en especialistas internos residentes de Medicina y Enfermería Familiar y Comunitaria y sus tutores.

Con respecto a las hipótesis, se plantearon las siguientes:

Hipótesis general:

Un programa de entrenamiento en mindfulness y autocompasión sobre el estado emocional en tutores y residentes de Medicina y Enfermería Familiar y Comunitaria, resulta eficaz, y además varía en base a la temporalidad del mismo.

- ❖ **Hipótesis 1:** Existirá una relación entre los niveles de Mindfulness y el estrés laboral y las características sociodemográficas y laborales básicas en los especialistas de Atención Primaria españoles y otros profesionales sanitarios.
- ❖ **Hipótesis 2:** Existirán diferencias significativas en la puntuación media en los niveles de mindfulness, autocompasión y empatía autopercebida entre el grupo experimental de 8 semanas y el de 4 semanas tras la intervención y entre estos y el grupo control.
- ❖ **Hipótesis 3:** Existirán diferencias significativas en la puntuación media en los niveles de ansiedad y depresión entre el grupo experimental de 8 semanas y el de 4 semanas tras la intervención y entre estos y el grupo control.

5. METODOLOGÍA

5.1. TIPO DE ESTUDIO Y POBLACIÓN DE ESTUDIO

Para alcanzar el objetivo de esta tesis se llevó a cabo un estudio con dos diseños diferentes. Por una parte y para responder al objetivo específico número 1, un estudio exploratorio, observacional, descriptivo, transversal, no experimental, cuya población de estudio fueron 802 profesionales y residentes internos de Atención Primaria adscritos a seis UDD del SNS español distribuidos en los territorios de Córdoba, Almería, Jaén, Burgos, Ponferrada y Zaragoza sector I y una submuestra de 267 enfermeras que trabajaban en entornos asistenciales no docentes, en la provincia de Córdoba.

Por otro lado, y para dar respuestas a los objetivos 2 y 3, se diseñó un estudio de tipo longitudinal, prospectivo, ensayo clínico controlado aleatorizado, por cluster, abierto, de tipo pragmático de no inferioridad, multicéntrico con tres brazos paralelos: grupo control (GC, sin intervención), grupo experimental 1 (EG1, programa de intervención de 4 semanas) y grupo experimental 2 (EG2, programa de intervención de 8 semanas). La muestra estuvo formada por un total de 892 profesionales tutores y residentes internos especialistas en Medicina y Enfermería familiar y Comunitaria adscritos a las UDD del SNS español de Córdoba, Almería, Jaén, Burgos, Ponferrada y Zaragoza Sector I.

La selección de los participantes en ambos tipos de estudio se realizó mediante un muestreo no probabilístico por conveniencia accediendo a los casos disponibles a través de los canales de comunicación existentes en cada una de las 6 UDD.

5.2. MUESTRA

Para llevar a cabo la selección de la muestra del estudio exploratorio, se establecieron como criterios de inclusión: ser médico de familia y tutor, o residente de medicina familiar (MIR) o enfermera de atención primaria (no necesariamente tutora en el caso del distrito de Córdoba) o residente de enfermería familiar y comunitaria y firmar el consentimiento informado. No fue establecido ningún criterio de exclusión.

Con respecto al estudio de tipo longitudinal, los criterios de inclusión considerados para todos ellos fueron: ser médico de familia y tutor o residente de medicina familiar (MIR), o de enfermería (EIR), estar de manera activa trabajando en uno de los Centros de Salud adscritos a las UDD participantes y dar su consentimiento informado para la participación en el estudio. Se excluyeron aquellas personas que hubieran asistido

previamente a un curso o taller de formación de mindfulness de al menos 4 semanas de duración, ser practicante activo y regular de mindfulness, estar en baja prolongada durante el trabajo de campo o tener un trastorno mental que dificultase la comprensión y desarrollo de la intervención.

5.3. HERRAMIENTAS DE EVALUACIÓN

Las herramientas de evaluación administradas se seleccionaron en función de la variable a analizar en cada estudio, con el objetivo de comprobar la aceptación o refutación de las hipótesis planteadas. A continuación se detallan las características de cada una de las medidas empleadas:

5.3.1. Cuestionario de mindfulness de cinco facetas (FFMQ)

El cuestionario de mindfulness de cinco facetas (FFMQ), validado para la población española por Cebolla et al. (70) fue administrado para medir el nivel de mindfulness. Se trata de un autoinforme compuesto por 39 ítems distribuidos en cinco dimensiones: observar, describir, actuar con conciencia, no juzgar las experiencias internas y no reactividad a la experiencia interna. Cada participante debe responder a cada ítem en una escala tipo Likert con cinco opciones de respuesta, donde 1 significa “nunca o muy raramente cierto” y 5 “muy a menudo o siempre cierto”. Esta escala permite el cálculo de una puntuación total de atención plena a partir del total de todas sus dimensiones que oscila entre 39 y 195 puntos, correspondiéndose las puntuaciones más altas con mayores niveles de atención plena. Las características psicométricas de la FFMQ en la población española son adecuadas, con un rango de respuesta entre 89 y 177. Presenta un nivel adecuado de consistencia interna, con un alfa de Cronbach entre 0,75 y 0,92. En estos estudios en concreto se obtuvo un alfa de Cronbach de 0,88 y 0,84 (71,72).

5.3.2. Escala de autocompasión (SCS-SF)

Para medir la autocompasión, se utilizó la escala abreviada de la versión española de la Escala de Autocompasión (SCS-SF) validada por García-Campayo et al (73). Este cuestionario permite evaluar cómo el sujeto tiende a actuar consigo mismo en situaciones difíciles. Consta de 12 ítems distribuidos en 6 subescalas: autoamistad, humanidad común, mindfulness, autocrítica, asilamiento y sobreidentificación. Cada ítem se valora mediante una escala tipo Likert con 6 opciones de respuesta, donde 0 corresponde a “casi

nunca” y 5 a “casi siempre”. La puntuación total oscila entre 0 y 60 puntos, asociando a las puntuaciones más altas una mayor autocompasión. Presenta un adecuado nivel de consistencia interna, con un alfa de Cronbach de entre 0,71 y 0,77. En estos estudios en concreto se obtuvo un alfa de 0,88 (73,74).

5.3.3. Estrés laboral y Cuestionario de Estrés Percibido (PSQ)

Para medir los niveles de estrés, por un lado se pidió a los participantes que calificaran su estrés laboral en una escala ordinal de once puntos donde 0 significa “sin nivel de estrés” y 10 “nivel máximo de estrés” dando respuesta a la siguiente pregunta: ¿qué grado de estrés laboral ha tenido en las últimas 2 semanas en su trabajo habitual? Se ha demostrado que este tipo de escala es adecuada para la evaluación del estrés percibido (75).

Por otro lado, se empleó el Cuestionario de Estrés Percibido (PSQ), validado por Sanz Carrillo et al (76). Este permite evaluar experiencias subjetivas de situaciones estresantes y reacciones de estrés. El instrumento se compone de 30 ítems distribuidos en seis dimensiones: tensión-inestabilidad-fatiga; aceptación social de conflictos; energía y diversión; sobrecarga; satisfacción de autorrealización y miedo y ansiedad. Los participantes deben responder a cada ítem en una escala tipo Likert de cuatro puntos donde 1 significa “casi nunca” y 4 “casi siempre” (76,77). La puntuación total resultante se transforma linealmente entre cero y uno; $PSQ = (\text{valor bruto} - 30) / 90$, relacionándose las puntuaciones más altas con un estrés percibido más severo. Presenta un adecuado nivel de consistencia interna, con un alfa de Cronbach de entre 0.85 y 0.93(78).

5.3.4. Inventario de Burnout de Maslach – Entrevista General (MBI-GS)

Para medir el nivel de agotamiento de los participantes se administró el inventario de Burnout de Maslach validado para la población española por Gil Monte (79). Se trata de un cuestionario que consta de 22 ítems distribuidos en tres dimensiones: agotamiento emocional, compuesta por nueve ítems y una puntuación máxima de 54 puntos; despersonalización, con cinco ítems y una puntuación máxima de 30 puntos; y realización personal con ocho ítems y una puntuación máxima de 80 puntos. Un alto nivel de agotamiento se refleja en las puntuaciones altas de las dimensiones de agotamiento emocional y despersonalización y en las puntuaciones bajas de la dimensión de

realización personal. Presenta un adecuado nivel de consistencia interna, con un alfa de Cronbach de entre 0,70 y 0,86 (79,80).

5.3.5. Escala de Empatía Médica de Jefferson (JSPE)

La empatía autopercebida fue evaluada a través de la Escala de Empatía médica de Jefferson (JSPE), traducida, adaptada y validada en población española por Blanco et al (81,82). Se trata de un instrumento compuesto por 20 ítems distribuidos en tres dimensiones: toma de perspectiva o empatía cognitiva, atención compasiva o empatía emocional y “capacidad para ponerse en el lugar del paciente”. Los participantes deben responder a cada ítem en una escala de 7 puntos donde 1 significa “totalmente en desacuerdo” y 7 “totalmente de acuerdo”. La puntuación total oscila entre 20 y 140 puntos relacionándose los valores más altos con una mayor empatía. Esta escala tiene un nivel adecuado de consistencia interna, con un alfa de Cronbach de 0.89 (81).

5.3.6. Escala de Ansiedad y Depresión de Goldberg (GADS)

Los síntomas psicológicos de ansiedad y depresión se midieron con la Escala de ansiedad y depresión de Goldberg (GADS) validada para la población española por Montón et al (83). Este instrumento se compone de dos subescalas: una para la detección de ansiedad (Escala de Ansiedad de Goldberg, GAS) y otra para la detección de depresión (Escala de Depresión de Goldberg, GDS). Cada subescala contiene nueve preguntas dicotómicas de sí/no; las cuatro primeras son obligatorias, mientras que las cinco restantes sólo se formulan si alguna de las anteriores se responde afirmativamente. El evaluador pregunta al participante sobre los diferentes síntomas contenidos en el GDS, refiriéndose a los 15 días anteriores. Por cada respuesta afirmativa se suma 1 punto, sin puntuar en el caso de la negativa. La puntuación de cada subescala varía de 0 a 9, mientras que el GDS de 0 a 18. Se considera que la persona tiene ansiedad si responde afirmativamente a cuatro o más ítems de la GAS, y depresión si da dos o más respuestas afirmativas en el GDS. Presenta un nivel adecuado de consistencia interna con un alfa de Cronbach de 0,81 para GADS, 0,74 para GAS y 0,70 para GDS (83–85).

Por otro lado, el estado de salud autopercebido se estableció mediante una pregunta cerrada, basada en la utilizada en la Encuesta Nacional de Salud de España, sobre la percepción que tiene la persona sobre su estado de salud general en los 12 últimos meses.

En esta autovaloración se distinguen 5 niveles: muy bueno, bueno, regular, malo y muy malo (86). Del mismo modo, los sentimientos de soledad, asilamiento social y laboral y felicidad del participante, antes y después de las intervenciones, fueron evaluados mediante dos preguntas cerradas con una escala cualitativa ordinal.

La adherencia de los participantes a los programas de formación también se monitorizó a través del control de la asistencia a las diferentes sesiones grupales y mediante el autoregistro personal de las prácticas realizadas en casa. Se consideró un nivel de adherencia adecuado cuando el participante había completado al menos 3 de las 4 sesiones presenciales del programa abreviado, o 6 de las 8 del programa tradicional.

Además de las herramientas de evaluación descritas, con el fin de controlar los posibles efectos predictores o de confusión, en todos los estudios se recogió la siguiente información sociodemográfica adicional de los participantes: edad, sexo (hombre o mujer), categoría profesional (médico o enfermera), tipo de profesional (tutor o interno residente), especialista, centro de trabajo (hospital o centro de salud), tiempo de trabajo en el SNS o UDD.

5.4. PROCEDIMIENTO

En cuanto al estudio exploratorio, en primer lugar el grupo de investigación elaboró un cuestionario on-line a través de Google Forms dónde se incluían todas las variables a estudiar

(https://docs.google.com/forms/d/e/1FAIpQLSdeSiv0lnAUFWZ_AqUvD9xdwpPZ41KqmaV3m4R92--RpbmtTA/viewform). Para el reclutamiento de la muestra, el estudio fue difundido a través de correo electrónico a todos los responsables de los Centros de Salud adscritos a las UDD del SNS español de Córdoba, Almería, Jaén, Burgos, Ponferrada y Zaragoza Sector I, así como de entornos asistenciales no docentes de la provincia de Córdoba. Previo a comenzar con la evaluación, el cuestionario fue previamente probado en una submuestra formada por cuatro sujetos para comprobar su comprensibilidad. Una vez testado, el cuestionario fue enviado y completado de manera electrónica por los participantes.

Con respecto al estudio de tipo longitudinal, en primer lugar éste estudio fue difundido a través de los canales de comunicación de las UDD participantes, mediante su envío a las direcciones de correo electrónico de las listas existentes, blog, sitios web del EIR, sesiones didácticas o reuniones presenciales. Una vez explicado el objetivo del

estudio, los profesionales fueron invitados a participar en el mismo y quienes aceptaron, cumplieron tanto el formulario de compromiso como el consentimiento informado. El proceso de aleatorización de los profesionales sanitarios en los diferentes grupos de estudio se realizó por conglomerados. Cada una de las 6 UDD analizadas se consideraron como un clúster diferente e independiente, por lo que sus participantes fueron asignados a GC (n=63), GE1 (n=39) o GE2 (n=63), correspondiéndose así 2 UDD por grupo. Asimismo, los participantes de cada UDD fueron estratificados según el tipo de profesional (66 tutores vs 66 residentes).

Una semana previa al inicio de las sesiones en los GE, todos los participantes acudieron a una primera visita de evaluación inicial, basal o pre-test, en la cual se obtuvieron datos de las variables a estudiar. Una vez transcurridas 4 semanas de esta evaluación inicial, para el GE1 y 8 semanas para el GE2 y GC, fueron evaluadas nuevamente las mismas variables en la visita de evaluación final o post-test. Los participantes del GE1 y GE2 también tuvieron que acudir a una visita de evaluación o de seguimiento 3 meses después de haber finalizado el programa de intervención para comprobar el mantenimiento de los resultados a medio-largo plazo. (Figura 1).

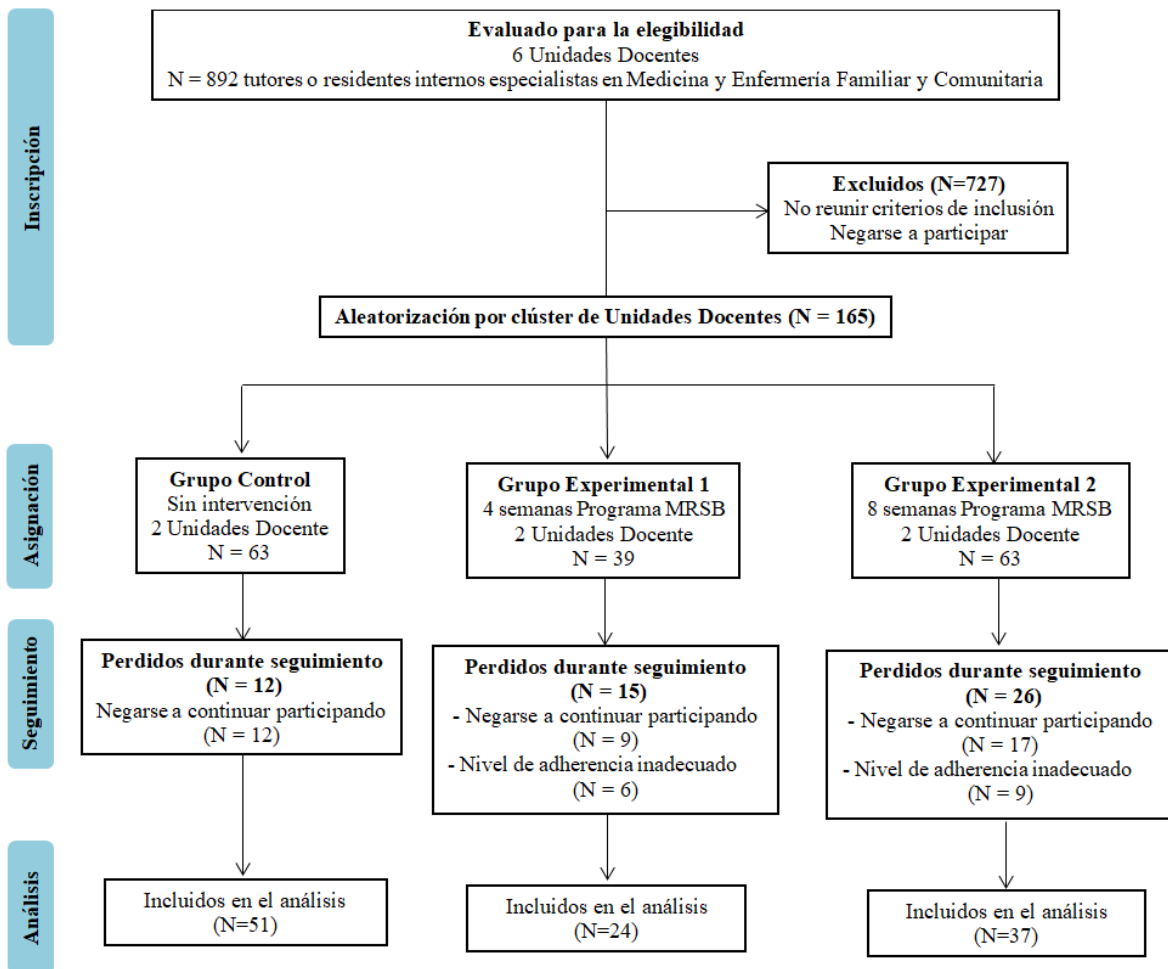


Figura 1. Diagrama de flujo de los participantes del estudio

La adherencia a los programas de capacitación fue medida a través de la monitorización y seguimiento continuo de las sesiones a las que asistieron los participantes. Además, debían escribir en un cuaderno o diario personal si habían realizado los ejercicios en casa y enseñárselo al instructor de cada sesión.

Los investigadores encargados de llevar a cabo las visitas de evaluación y el análisis estadístico de datos, permanecieron cegados al grupo al que pertenecían los participantes con el fin de minimizar la contaminación cruzada entre grupos.

PROGRAMAS DE INTERVENCIÓN

Todos los participantes del GE1 y GE2, fueron incluidos en un programa de entrenamiento MBSR (45,46) en combinación con algunas prácticas de entrenamiento MSC (87,88). Las sesiones se adaptaron a las características de cada grupo diferenciándose únicamente por la duración y el tiempo invertido en el desempeño de las diferentes (89). Los participantes del GE1 recibieron intervención mediante el programa abreviado caracterizado por 4 sesiones a la semana de 2,5h de duración, complementadas con la práctica diaria de 15 minutos en casa; mientras que los participantes del GE2 recibieron 8 sesiones semanales de 2,5h de duración, junto con una práctica de 30 min adicionales en casa, correspondiente a al programa estándar.

Las sesiones fueron desarrolladas en grupos, alternándose momentos de silencio con otros de exploración en conjunta sobre estrategias adecuadas para llevar a cabo situaciones complejas y difíciles, buscando su aplicación práctica en el ámbito tanto profesional como personal. Los contenidos abordados en las sesiones, se dirigen al conocimiento de la atención plena, la percepción de la realidad, el poder de las emociones, la reacción al estrés y la tensión emocional, la resiliencia, la respuesta al estrés, el uso de la comunicación consciente, el autocuidado, la correcta gestión del tiempo y la integración de la atención plena en la vida cotidiana (Tabla 1).

Los programas de formación han sido unificados en las diferentes UDD e impartidos por los dos mismos instructores durante todo el curso con el fin de evitar cualquier variabilidad asociada al terapeuta. Los instructores contaban con la acreditación universitaria requerida para poder impartir esta formación y siguieron las intervenciones utilizando criterios metodológicos estandarizados y uniformes.

Con respecto a los participantes del GC, solo recibieron una sesión informativa de 1 hora de duración en la que se explicó el diseño de estudio así como su función dentro del mismo y se les invitó a completar los datos esperados en dos momentos temporales. Una vez aceptaron su participación, se comprometieron a no recibir intervención alguna y se les solicitó que no participaran en ninguna sesión relacionada con técnicas de atención plena o meditación durante el periodo de estudio. Se les informó que una vez finalizado el trabajo de campo, tenían la oportunidad de participar en el programa de capacitación abreviado de manera voluntaria.

	PROGRAMA DE 8 SEMANAS	PROGRAMA DE 4 SEMANAS
PRESENTACIÓN MEDICIÓN DE LÍNEA DE BASE	Explicación general, objetivos, cronograma. Medidas pre-intervención: datos generales, FFMQ, SCS, PSQ, MBI-GS, JSPE, GADS, cuestionarios AES.	
1ª SESIÓN	Ejercicio de pasas. ¿Qué es la atención plena? Práctica: escaneo corporal. Práctica informal: cepillado de los dientes Tarea: Escaneo corporal de 30 '.	Ejercicio de pasas. ¿Qué es la atención plena? Manejo de pensamientos y emociones durante la práctica. Práctica: escaneo corporal. Práctica informal: cepillado de los dientes Tarea: Escaneo corporal de 30 '.
2ª SESIÓN	Conceptos: estrés y agotamiento Práctica: respiración consciente (sentado). Práctica de atención plena de 3 minutos. Práctica informal: ducha consciente, 3 '. Tarea: Escaneo corporal de 30 ' + 10 ' sentado.	Conceptos: estrés y agotamiento. Sufrimiento primario y secundario. Práctica: respiración consciente (sentado). Práctica de atención plena de 3 minutos. Práctica informal: ducha consciente, 3 '. Tarea: Escaneo corporal de 30 ' + 10 ' sentado.
3ª SESIÓN	Postura. Ser versus hacer. Manejo de pensamientos y emociones durante la práctica. Práctica: yoga (meditación de pie). Práctica informal: lavar los platos, 3 '. Tarea: alternancia de exploración corporal o yoga + 15 ' sentado.	Amor incondicional (metta). Compasión. Práctica: movimientos conscientes. Metta para uno mismo y para los demás. Práctica informal: lavar los platos, 3 ', carta de agradecimiento. Tarea: alternancia de exploración corporal o yoga + 15 ' sentado.
4ª SESIÓN	Atención. Sufrimiento primario y secundario. Práctica: yoga (meditación sentada). Práctica: hacer la cama, 3 '. Tarea: alternancia de exploración corporal o yoga + 15 ' sentado.	Psicología POSITIVA. Valores. Práctica: meditación caminando. El funeral. Práctica informal: el primer bocado, 3 ', 3 cosas positivas. Comentarios del curso. Incorporar la atención plena a la vida diaria. Cuestionario de evaluación y satisfacción del curso. Repitiendo los cuestionarios.
5ª SESIÓN	Gestión del tiempo. Resolución del problema. Práctica: meditación caminando. Práctica: el primer bocado. Tarea: yoga alternando con 30 ' sentado. Empiece a meditar caminando.	
6ª SESIÓN	Amor incondicional (metta). Compasión. Práctica: Metta para uno mismo y para los demás. Práctica informal: carta de agradecimiento. Tarea: yoga alternando 30 ' sentado + meditación caminando.	
7ª SESIÓN	Psicología POSITIVA. Valores. Práctica: un gesto compasivo, un lugar seguro. El funeral. Práctica informal: 3 cosas positivas, 3 '. Tarea: método de elección de 45 '.	

8ª SESIÓN	Comentarios del curso. Práctica: repasar las prácticas del curso. Incorporar la atención plena a la vida diaria. Cuestionario de evaluación y satisfacción del curso.	
MEDICIÓN POSTERIOR A LA INTERVENCIÓN	Repite los cuestionarios.	Repite los cuestionarios.
REEVALUACIÓN (3 MESES)	Repite los cuestionarios.	Repite los cuestionarios.

Tabla 1. Programas de entrenamiento en mindfulness y autocompasión

5.5. CONSIDERACIONES ÉTICAS

Este proyecto cumple con el marco normativo de referencia para desarrollar proyectos de investigación en España (Ley 41/2002, de 14 de noviembre, reguladora de la autonomía del paciente, derechos y obligaciones en materia de información y documentación).

Para llevar a cabo el proyecto se obtuvo la aprobación del Comité de Ética e Investigación Clínica del Hospital Universitario Reina Sofía de Córdoba (España), con el número de referencia 3845. Según la Declaración de Helsinki, todos los participantes fueron informados de los objetivos del proyecto, y sus posibles riesgos y beneficios de las evaluaciones a realizar. Se requirió que cada sujeto proporcionara el consentimiento informado firmado para su inclusión en el estudio. La confidencialidad de los datos de los participantes se garantizó en todo momento de acuerdo con lo establecido en la normativa de protección de datos personales y confidencialidad (Reglamento Europeo de protección de datos y de acuerdo con la Ley Orgánica 3/2018, de 5 de diciembre, de Protección de Datos de Carácter Personal y Garantía de Derechos Digitales).

5.6. ANÁLISIS ESTADÍSTICOS

En relación al estudio exploratorio, los análisis estadísticos se realizaron con el Software SPSS Statistics para Windows, versión 22.0. Se consideró significación estadística si $p < 0.05$.

Se realizaron análisis descriptivos para describir las variables objeto de estudio en función de su distribución. Se utilizaron medidas de centralización de datos, dispersión y posición (variables cuantitativas), así como frecuencias absolutas y relativas (variables cualitativas).

Por otro lado, el cumplimiento de los criterios de normalidad en variables cuantitativas se verificó mediante la prueba de Kolmogorov-Smirnov. Se utilizaron análisis bivariados para estudiar la relación existente entre las variables sociodemográficas y laborales, y el grado de mindfulness o nivel de estrés laboral mediante el coeficiente de correlación de Spearman, la prueba U de Mann-Whitney y la prueba de Kruskal-Wallis.

En cuanto al protocolo de estudio, se estableció que los análisis estadísticos serían llevados a cabo con el software SPSS versión 17.0 y mLwiN versión 3.00 (Center for Multilevel Modeling, Universidad de Bristol: Bristol, Reino Unido, 2019). Se consideraría significación estadística si $p < 0.05$. La estadística descriptiva incluyó datos obtenidos de medias, desviaciones estándar, medianas y rangos intercuartílicos, o frecuencias absolutas y porcentajes según las variables. El cumplimiento de los criterios de normalidad en variables cuantitativas se verificó mediante la prueba de Kolmogorov-Smirnov. Se llevaron a cabo pruebas estadísticas para examinar las posibles diferencias de referencia entre los grupos con respecto a edad, sexo, tiempo trabajado, profesión, año de residencia y formación previa en mindfulness. Se llevó a cabo un análisis por protocolo donde se considerarán todos los participantes que hubiesen realizado al menos 6 de las 8 sesiones en el programa estándar y 3 de las 4 sesiones en el programa abreviado.

Por otro lado, para comparar los resultados obtenidos antes y después de la intervención se realizó mediante un análisis bivariado, utilizando la prueba t de Student o la prueba de Wilcoxon para comprar muestras relacionadas. Las diferencias pre-post de los resultados de los cuestionarios entre grupos se compararon utilizando ANOVA para medidas repetidas. Por último para verificar el efecto de las intervenciones, se llevará a cabo un análisis multivariado ajustando por variables de confusión mediante una regresión lineal multinivel.

Para minimizar y controlar los efectos de las pérdidas y los abandonos no aleatorios, se realizó un análisis por intención de tratar. En el análisis descriptivo de la muestra se utilizó media y desviación estándar (DE) en el caso de las variables cuantitativas, o frecuencias absolutas y porcentajes para las variables categóricas. El cumplimiento de los criterios de normalidad en variables cuantitativas se verificó mediante la prueba de Kolmogorov-Smirnov. En aquellos casos en los que no se respetaron estos criterios, se calculó la mediana y el rango intercuartílico (RIQ). Se examinó la comparabilidad de los grupos en la visita de evaluación inicial en lo referido a edad, sexo, categoría profesional, tipo de profesional, centro de trabajo o tiempo de trabajo en el Sistema Nacional de Salud español, la prueba de chi-cuadrado y la t de Student para muestras independientes, o sus correspondientes pruebas no paramétricas.

Se utilizó un análisis de varianza unidireccional (ANOVA) para analizar el efecto de la intervención sobre la atención plena, la autocompasión, la empatía autopercebida, la ansiedad y la depresión en los participantes de CG, EG1 y EG2. Se utilizó un ANOVA de medidas repetidas para comparar las diferencias en los resultados de atención plena, autocompasión, empatía autopercebida, ansiedad y depresión entre los grupos antes y después de las intervenciones. Se utilizó la prueba post hoc de Bonferroni para determinar entre qué grupos había diferencias. El tamaño del efecto de las intervenciones se estimó mediante el coeficiente eta cuadrado (η^2), interpretando los resultados según los siguientes criterios: si $0 \leq \eta^2 < 0.05$, ningún efecto; si $0.05 \leq \eta^2 < 0.26$, el efecto fue mínimo; si $0.26 \leq \eta^2 < 0.64$, el efecto fue moderado; y si $\eta^2 \geq 0.64$, el efecto fue fuerte (90). Finalmente, con el objetivo de eliminar de las variables dependientes (puntajes postest y seguimiento) el efecto atribuible a variables no incluidas en el diseño y, por lo tanto, no sometidas a control experimental, se realizó un análisis de covarianza (ANCOVA), utilizando las puntuaciones pre-test de las variables dependientes como covariable y de los grupos de intervención como factor fijo.

6. RESULTADOS

Para explicar los resultados obtenidos en la presente tesis, se considera necesario detallar y resaltar los obtenidos en cada uno de los cuatro artículos que conforman la misma:

6.1. Estudio I: *“Mindfulness en los profesionales sanitarios y docentes de atención primaria y su relación con el estrés en el trabajo: un estudio transversal multicéntrico”*

Este primer estudio se planteó para conocer la situación de partida, teniendo en cuenta el reto que supondría proponer a las seis UDD un proyecto docente/investigador tan complejo, teniéndolo que asumir de forma voluntaria tanto por residentes como tutores.

Para un tercio de las unidades iba a suponer comprometerse a un programa de 8 semanas con actividades complementarias. Para otro tercio, a un programa de 4 semanas y para otro tercio, solo supondría la participación como grupo control.

Por este motivo, se hizo este estudio transversal multicéntrico y que confirmó que su propuesta podría ser bien recibida por las unidades docentes, dados los niveles detectados de estrés laboral.

Aun así, fue necesario realizar un ajuste muy preciso de las fechas de las sesiones para que no interfiriera con el resto de la oferta docente.

El número total de participantes que cumplieron con los criterios de inclusión establecidos y completaron la encuesta fue de 475, con una tasa de respuesta general de 44.5%. La tasa de respuesta varió entre el 47.2% de los integrantes de las UDD y el 35.9% de las enfermeras de entornos asistenciales no docentes. La muestra estuvo formada por un 66.9% de mujeres y un 33.1% de hombres, cuya edad media fue de 40.14 (DE \pm 13.12), con un rango de entre 23 y 65 años. Con respecto a la categoría profesional, el 42.5% de la muestra estaba formada por médicos internos residentes, el 29.3% por médicos de familia y el 20.2% por enfermeras. En relación al tiempo trabajado, el 61.0% de los médicos y el 42.7% de las enfermeras llevaban más de 20 años, mientras que el 91.2% de los médicos internos residentes menos de 4.

La puntuación media para el estrés relacionado con el trabajo fue de 6.00 ± 2.44 (rango 0-10, IC del 95%; 5.78-6.22), obteniendo el 49.9% de los participantes, una puntuación de 7 o más en la escala de estrés relacionado con el trabajo.

En relación a los datos obtenidos en mindfulness, el 54.5% afirmó conocer el significado de este concepto; el 24.0% de ellos, había recibido formación previa sobre su práctica, mientras que el 22.5% refirió estar actualmente practicando ejercicios de mindfulness. De este 22.5%, el 4% de los encuestados practicaba el mindfulness a diario, mientras que el 4.2% lo practicaba de dos a tres veces por semana y el 14.3% lo hacía de forma ocasional. El nivel medio de atención plena, evaluado con el cuestionario FFMQ, fue 127.18 ± 15.45 (rango: 89-177; IC del 95%: 125.79-128.57).

En la tabla 2 se puede observar las diferencias estadísticamente significativas existentes entre los niveles de mindfulness y la edad ($p < 0.001$; la puntuación media más alta en la FFMQ se obtuvo por los profesionales de mayor edad), categoría profesional ($p < 0.001$; los médicos residentes obtuvieron puntuaciones más bajas), tiempo trabajado ($p < 0.001$; la puntuación media más alta se adquirió por los profesionales con más años trabajados) y formación o práctica previa del mindfulness ($p < 0.001$; las puntuaciones medias más altas se obtuvieron por los profesionales que habían recibido formación previa o la practicaban a diario). No se encontraron diferencias significativas en función del género ($p = 0.910$) ni del conocimiento previo del concepto de mindfulness ($p = 0.145$).

Tabla 2. Relación entre las variables de estudio y el estado de mindfulness mediante análisis bivariado

VARIABLES	Media ± DE (IC del 95% de la media)	Valor p
Años de edad:		<0.001 *
-Menos de 30	121.94 ± 13.49 (119.95 - 123.90)	
-De 30 a 45	129.75 ± 14.93 (126.81 - 132.70)	
-46 o más	130.81 ± 16.14 (128.51 - 133.10)	
Género:		0.910 **
-Masculino	127.29 ± 14.68 (124.98 - 129.61)	
-Femenino	127.12 ± 15.84 (125.37 - 128.87)	
Categoría profesional:		<0.001 *
-Médico de cabecera	130.62 ± 15.29 (128.31 - 132.92)	
-Enfermero	131.19 ± 16.39 (127.88 - 134.49)	
- Residentes de medicina familiar y comunitaria	122.42 ± 13.83 (120.52 - 124.32)	
Cantidad de tiempo trabajado:		<0.001 *
-Menos de 5 años	122.59 ± 13.75 (120.70 - 124.48)	
-De 5 a 10 años	130.59 ± 16.76 (125.78 - 135.40)	
-De 11 a 20 años	127.35 ± 15.83 (123.63 - 131.07)	
-Más de 20 años	132.36 ± 15.45 (129.88 - 134.84)	
Consciente de la atención plena:		0.145 **
-Sí	128.12 ± 15.87 (126.18 - 130.07)	
-No	126.05 ± 15.45 (124.05 - 128.04)	
Ha recibido formación sobre mindfulness:		<0.001 **
-Si	130.73 ± 18.01 (127.39 - 134.07)	
-No	126.06 ± 14.40 (124.57 - 127.55)	
Practica la atención plena:		<0.001 *
-Diario	145.53 ± 17.85 (136.92 - 154.13)	
-De 2 a 3 veces / semana	136.00 ± 15.82 (128.59 - 143.41)	
-De vez en cuando	129.35 ± 15.82 (123.87 - 126.83)	
-Nunca	125.35 ± 14.43 (123.87 - 126.83)	

DE: Desviación estándar, IC: Intervalo de confianza del 95%

* Prueba ANOVA; ** Prueba t de Student

En la tabla 3, se puede observar la relación estadísticamente significativa que existe entre la situación laboral relacionada con el estrés del profesional y las diferentes variables estudiadas como la edad ($p < 0.001$), perfil profesional ($p < 0.001$), cantidad de tiempo trabajado ($p < 0.001$) y la práctica de atención plena ($p < 0.001$). Por el contrario, no se encontraron diferencias estadísticamente significativas, en cuanto al género ($p = 0.714$), conocimientos ($p = 0.727$) o formación previa en mindfulness ($p = 0.251$).

Por otro lado, se encontró una relación directa y estadísticamente significativa entre el grado de práctica del ejercicio de mindfulness y el nivel de atención plena, mediante el cuestionario FFMQ ($F = 14.389$, $p < 0.001$). Además se observó una leve correlación negativa, pero significativa, entre el nivel de atención plena (puntuación general FFMQ) y el nivel de estrés relacionado con el trabajo ($r = -0.155$, $p = 0.003$).

Tabla 3. Relación entre las variables de estudio y el nivel de estrés laboral mediante análisis bivariado

Variables	Media ± DE (IC del 95% de la media)	Valor <i>p</i>
Años de edad:		<0.001 *
-Menos de 30	5.38 ± 2.61 (5.00–5.77)	
-De 30 a 45	6.36 ± 2.40 (5.88–6.83)	
-46 o más	6.39 ± 2.18 (6.08–6.70)	
Género:		0.714 **
-Masculino	6.10 ± 2.31 (5.76–6.46)	
-Femenino	5.95 ± 2.50 (5.67–6.22)	
Categoría profesional:		<0.001 *
-Médico de cabecera	6.34 ± 2.03 (6.04–6.65)	
-Enfermero	6.51 ± 2.39 (6.02–6.99)	
- Residentes de medicina interna	5.47 ± 2.68 (5.10–5.83)	
Cantidad de tiempo trabajado:		<0.001 *
-Menos de 4 años	5.40 ± 2.66 (5.03–5.76)	
-De 5 a 10 años	6.22 ± 2.08 (5.63–6.82)	
-De 11 a 20 años	6.72 ± 2.13 (6.22–7.22)	
-Más de 20 años	6.40 ± 2.20 (6.04–6.76)	
Consciente de la atención plena:		0.727 **
-Sí	6.02 ± 2.67 (5.75–6.30)	
-No	5.96 ± 2.64 (5.61–6.32)	
Ha recibido formación sobre mindfulness:		0.251 **
-Sí	5.85 ± 2.37 (5.41–6.29)	
-No	6.04 ± 2.47 (5.79–6.30)	
Practica la atención plena:		0.040 *
-Diario	4.58 ± 2.34 (3.45–5.71)	
-De 2 a 3 veces / semana	6.70 ± 1.84 (5.84–7.56)	
-De vez en cuando	5.96 ± 2.39 (5.38–6.53)	
-Nunca	6.04 ± 2.47 (5.79–6.29)	

DE Desviación estándar, IC del 95% Intervalo de confianza del 95%; * Prueba de Kruskal-Wallis; ** Prueba U de Mann-Whitney

En la tabla 4 se muestra que en el análisis multivariado, las variables asociadas al nivel de mindfulness fueron: la edad ($B=0.313$; $p < 0.001$), la práctica de mindfulness ($B=4.614$; $p < 0.001$) y el estrés laboral ($B=-1.044$; $p < 0.001$).

Tabla 4. Variables asociadas al estado de mindfulness mediante análisis multivariado

Variables	Modelo 1				Modelo 2			
	B	IC 95,0% para B		p	B	IC 95,0% para B		p
		Límite inferior	Límite superior			Límite inferior	Límite superior	
Edad	0.202	-0.015	0.419	0.068	0.313	0.211	0.414	<0.001
Género	0.533	-2.276	3.343	0.709	-	-	-	-
Profesión	-1.071	-3.626	1,485	0.411	-	-	-	-
Tiempo trabajando en la posición actual	0.286	-0.681	1.254	0.561	-	-	-	-
Conciencia de la atención plena	1.039	-1.970	4.048	0.498	-	-	-	-
Entrenamiento en mindfulness	-0.463	-4.047	3.122	0.800	-	-	-	-
Práctica de la atención plena	4.727	2.720	6.734	<0.001	4.614	2.845	6.383	<0.001
Estrés relacionado con el trabajo	-1.062	-1.603	-0.520	<0.001	-1.044	-1.579	-0.508	<0.001
Interceptar	118.461	-	-	-	114.675	-	-	-

Modelo 1: modelo máximo. Modelo 2: modelo parsimonioso. Variable dependiente: atención plena (FFMQ); Coeficiente de determinación del modelo 1: $R^2 = 0,163$ ($F = 11,35$; $p < 0,001$); Coeficiente de determinación del modelo 2: $R^2 = 0,161$ ($F = 29,80$; $p < 0,001$). $n = 474$; Intervalo de Confianza al 95%: IC 95%

Por otro lado, en la tabla 5 se muestra la relación que existe entre los niveles de estrés y la edad ($B=0.036$; $p < 0.001$) y el nivel de práctica del mindfulness ($B=-0.334$; $p < 0.001$). Sin embargo, en el análisis multivariado no se obtuvieron relaciones significativas entre el perfil profesional y los niveles de mindfulness o el estrés laboral percibido.

Tabla 5. Variables asociadas al nivel de estrés laboral mediante análisis multivariado

Variables	Modelo 1				Modelo 2			
	B	IC 95,0% para B		p	B	IC 95,0% para B		p
		Límite inferior	Límite superior			Límite inferior	Límite superior	
Edad	0.000	-0.037	0.036	0.976	0.036	0.019	0.052	<0.001
Género	0.036	-0.436	0.507	0.882	-	-	-	-
Profesión	-0.035	-0.464	0.394	0.871	-	-	-	-
Tiempo trabajando en el puesto actual	0.186	0.024	0.347	0.024	-	-	-	-
Conciencia de la atención plena	-0.318	-0.822	0,187	0.216	-	-	-	-
Entrenamiento en mindfulness	0.241	-0.360	0,843	0.431	-	-	-	-
Práctica de la atención plena	-0.378	-0.714	-0.043	0.027	-0.334	- 0.631	-0.037	<0.001
Interceptar	5.771	-	-	-	5.015	-	-	-

Modelo 1: modelo máximo. Modelo 2: modelo parsimonioso. Variable dependiente: estrés laboral percibido; Coeficiente de determinación del modelo 1: $R^2 = 0.054$ ($F = 8.86$; $p = 0.002$); Coeficiente de determinación del modelo 2: $R^2 = 0.039$ ($F = 9.68$; $p < 0.001$). $n = 474$; Intervalo de confianza al 95%: IC 95%

6.2. Estudio II: *“Ensayo clínico controlado que compara la efectividad de un programa de 4 sesiones de atención plena y autocompasión versus un programa de 8 sesiones para reducir el estrés laboral y el agotamiento en médicos y enfermeras de medicina familiar y comunitaria: protocolo de estudio MINDUUD”*

El tamaño de la muestra se calculó en base a un estudio previo utilizando la puntuación media de la FFMQ como variable de resultado. Aceptando un riesgo alfa de 0.05 y un riesgo beta de 0.2, se requerirían 38 sujetos en cada grupo para detectar una diferencia ≥ 15 puntos entre ambos grupos experimentales y el grupo control (70,91). El efecto del diseño multiplica el tamaño de la muestra por un factor variable entre 1.5 y 3 para lograr el mismo poder. Las estimaciones del coeficiente de correlación intragrupo (ICC) en los ensayos clínicos aleatorizados en AP normalmente son < 0.05 . Este ICC para un tamaño de conglomerado de 15 tiene como resultado un efecto de diseño correspondiente a un factor de 1.7. Si se supone ese valor, el tamaño de la muestra final sería de al menos 44 participantes en cada grupo de comparación y por tanto, 22 por cada unidad docente.

Los resultados esperados del ensayo serían de aplicación inmediata dado que en caso de la confirmación de la hipótesis, gran número de profesionales podrían beneficiarse de esta práctica. La aplicación de la nueva evidencia proporcionada por este ensayo produciría un mejor ambiente de trabajo y una atención y práctica médica en la atención al paciente de mayor calidad.

6.3. Estudio III: *“Comparación de la efectividad de un programa abreviado frente a un programa estándar en mindfulness, autocompasión y empatía autopercebida en Tutores y Especialistas Residentes en Medicina y Enfermería Familiar y Comunitaria en España”*

La muestra del estudio consistió en 165 sujetos, 63 correspondientes al GC, 39 al EG1 y 63 al EG2. Se dieron un total de 53 pérdidas durante el seguimiento, de las cuales 38 se debieron a la negativa de participar finalmente en el estudio y 15 por un nivel inadecuado de adherencia al programa de formación. Por ello, un total de 112 participantes completaron el estudio y fueron incluidos en el análisis, contando con 51 sujetos en el GC, 24 en el EG1 y 37 en el EG2.

La tabla 6 muestra las características sociodemográficas basales de los participantes según el grupo de estudio. Las mujeres representaron el 76.79% de la muestra (N= 86), con una edad media de 40.61 (DE \pm 12.61). En relación a la categoría profesional, el 84.82% trabajaban en Atención Primaria (N= 95). La experiencia laboral media fue de 12.88 años (DE \pm 13.15). La muestra se distribuyó por igual a tutores y residentes especialista (50 frente a 62). Se observaron diferencias estadísticamente significativas entre los tres grupos en edad, categoría profesional y experiencia laboral.

Tabla 6. Características basales de los participantes

Variables	Total (n = 112)	GC (n = 51)	EG1 (n = 24)	EG2 (n = 37)	p
Años de edad	41.61 ± 12.61	40.34 ± 13.22	47.66 ± 13.67	35.73 ± 12.04	<0.001
Género					
Masculino	26 (23.21)	11 (21.57)	6 (25.00)	9 (24.32)	0.978
Femenino	86 (76.79)	40 (78.43)	18 (75.00)	28 (75.68)	
Ocupación					
Médico	95 (84.82)	41 (80.39)	20 (83.33)	34 (91.89)	0.165
Enfermero	17 (15.18)	10 (19.61)	4 (16.67)	3 (8.11)	
Tipo profesional					
Tutor	50 (44.64)	24 (47.06)	15 (62.50)	11 (29.73)	<0.001
Residente	62 (55.36)	27 (52.94)	9 (37.50)	26 (70.27)	
Lugar de trabajo					
Centro de salud	95 (84.82)	40 (78.43)	22 (91.67)	33 (89.19)	0.217
Hospital	17 (15.18)	11 (21.57)	2 (8.33)	4 (10.81)	
Experiencia laboral (años)	12.88 ± 13.15	13.13 ± 12.95	19.49 ± 13.91	8.91 ± 11.06	<0.001

Los valores se expresan como media ± desviación estándar, frecuencias absolutas y porcentajes. Abreviaturas: GC: Grupo Control; GE1: Grupo Experimental, 4 semanas; GE2: Grupo Experimental, 8 semanas; SNS: Sistema Nacional de Salud

La tabla 7 muestra las diferencias entre el GC, GE1 Y GE2 en los niveles de atención plena, autocompasión y empatía autopercebida. No se observaron diferencias estadísticamente significativas entre los grupos, por lo que todas las UDD participantes fueron semejantes y partieron de la misma situación. Sin embargo, en las visitas post intervención y de seguimiento, se observaron diferencias estadísticamente significativas en las puntuaciones de Mindfulness y autocompasión de los participantes del GC con respecto a los del GE2, presentando éste último puntuaciones más altas. En todos los casos, el tamaño del efecto fue significativo y débil ($\eta^2 \leq 0.076$). Por el contrario, no se observaron diferencias estadísticamente significativas en los niveles de empatía autopercebida entre los grupos de estudio en ninguna de las evaluaciones.

Tabla 7. Comparación de FFMQ, SCS y JSPE, según el tipo de grupo mediante ANOVA de un factor

Evaluación	Variable	GC		GE1		GE2		F	p	η^2
		M	DE	M	DE	M	DE			
Pre-test	FFMQ	118.17	13.32	117.71	16.76	119.26	15.11	0.153	0.858	0.002
	SCS	2.88	0.73	2.97	0.88	2.82	0.93	0.381	0.683	0.005
	JSPE	124.14	8.53	120.12	15.98	122.44	12.72	1.281	0.281	0.016
Post-test	FFMQ	119.28 *	17.79	124.07	22.60	131.65 *	18.03	5.004	0.008	0.076
	SCS	2.98 *	0.89	3.15	0.98	3.47 *	0.74	3.789	0.025	0.058
	JSPE	124.35	8.40	120.85	15.74	126.85	9.06	2.634	0.076	0.041
Seguimiento	FFMQ	121.03 *	18.29	125.04	22.62	131.97 *	18.22	3.461	0.035	0.060
	SCS	2.96 *	0.90	3.21	1.04	3.46 *	0.78	3.289	0.041	0.057
	JSPE	123.96	8.06	125.50	12.39	124.35	18.23			

* $p < 0.05$ en análisis post-hoc (Bonferroni), entre GC y GE2. Abreviaturas: GC: Grupo Control; GE1: Grupo Experimental, 4 semanas; GE2: Grupo Experimental, 8 semanas; M: media; DE: Desviación estándar; FFMQ: Cuestionario de atención plena de cinco facetas; SCS: Escala de Autocompasión; JSPE: Escala de empatía médica

En la tabla 8 se compara las puntuaciones obtenidas en el FFMQ, SCS y JSPE por cada uno de los grupos analizados en los tres momentos estudiados. Se observa que no se encontraron diferencias estadísticamente significativas entre los participantes del GC. Los sujetos del programa de entrenamiento abreviado demostraron un aumento significativo en la puntuación JSPE en la visita de seguimiento en comparación con la visita previa a la prueba, con un tamaño del efecto débil ($\eta^2 = 0.223$). Aquellos participantes que formaron parte del programa de formación estándar de 8 semanas, obtuvieron niveles más altos de atención plena y autocompasión en las visitas post-test y de seguimiento, con respecto al pre-test; sin embargo, en comparación con el grupo del programa de entrenamiento abreviado, no se observaron diferencias estadísticamente significativas en la empatía autopercebida.

Tabla 8. Comparación intragrupo de FFMQ, SCS y JSPE, mediante ANOVA para medidas repetidas

Grupo	Variable	Pre-test		Post-test		Seguimiento		MC	F	p	η^2
		M	DE	M	DE	M	DE				
GC	FFMQ	118.17	13.32	119.28	17,79	121.03	18.29	205.283	2.009	0.143	0.059
	SCS	2.88	0.73	2.98	0,89	2.96	0.90	0.127	0.971	0.384	0.029
	JSPE	124.14	8.53	124.35	8.40	123.96	8.06	23.303	0.578	0.564	0.018
GE1	FFMQ	117.71	16.76	124.07	22.60	125.04	22.62	242.902	2.736	0.080	0.146
	SCS	2.97	0.88	3.15	0,98	3.21	1.04	0.163	1.160	0.326	0.068
	JSPE	120.12 *	15.98	120.85	15,74	125.50 *	12.39	240.137	4.584	0.018	0.223
GE1	FFMQ	119.26 *, \$	15.11	131.65 \$	18.03	131.97 *	18.22	681.722	8.473	0.001	0.269
	SCS	2.82 *, \$	0.93	3.47 \$	0,74	3.46 *	0.78	1.483	9.356	<0.001	0.289
	JSPE	122.44	12.72	126.85	9.06	124.35	18.23	245.847	1.596	0.214	0.065

\$p<0.05\$ en análisis post-hoc (Bonferroni), entre pre-test y post-test. *\$p<0.05\$ en análisis post-hoc (Bonferroni), entre pre-test y seguimiento. Abreviaturas: GC: Grupo Control; GE1: Grupo Experimental, 4 semanas; GE2: Grupo Experimental, 8 semanas; M: media; MC: Media cuadrática; DE: Desviación estándar; FFMQ: Cuestionario de atención plena de cinco facetas; SCS: Escala de Autocompasión; JSPE: Escala de empatía médica

En los siguientes gráficos lineales se muestran las variables con diferencias estadísticamente significativas entre las puntuaciones de los diferentes grupos en los tres puntos temporales (Figura 2).

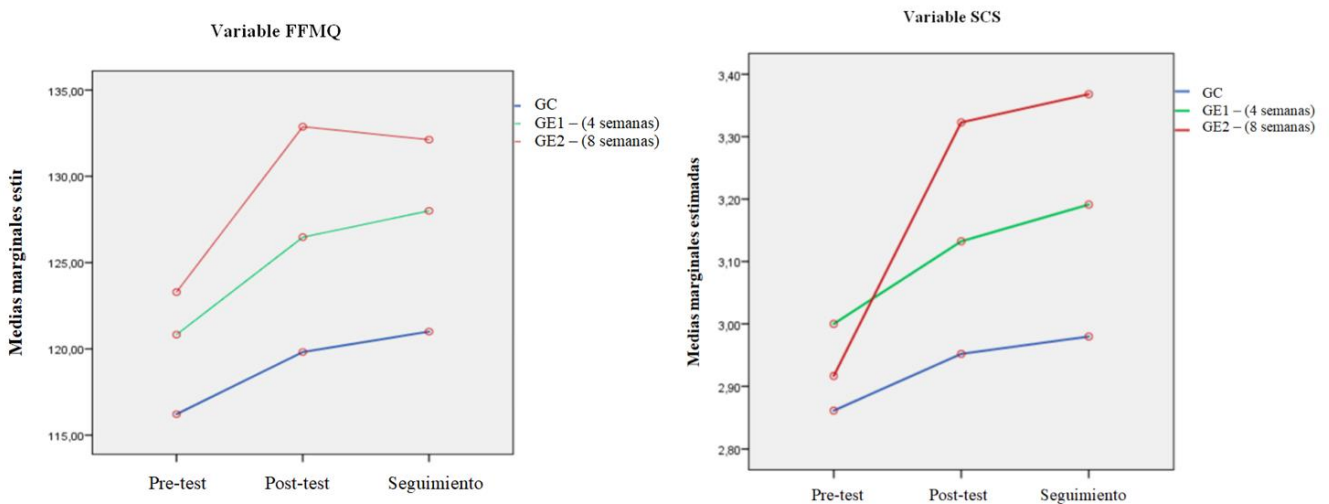


Figura 2. Gráficos lineales de los puntajes FFMQ y SCS de los diferentes grupos en los tres puntos temporales

La tabla 9 muestra las diferencias estadísticamente significativas entre el GC y el GE en mindfulness y autocompasión en la visita post-test mediante ANOVA, confirmando de esta manera, los resultados observados en las comparaciones intergrupales previas. Por ello, estas diferencias estadísticas, dadas principalmente en el GE2, podrían atribuirse a la intervención realizada.

Tabla 9. Comparación entre grupos en las puntuaciones post-test y pre-test mediante ANOVA

Variable	Fuente	Tipo III Suma del cuadrado	gl	MC	F	p	η^2
FFMQ	Pre-test FFMQ	10.240,20	1	10.240.21	46.396	<0.001	0.338
	CG / EG1 / EG2	1443.94	2	721.97	3.271	0.042	0.067
	Error	20.084,98	91	220.71	--	--	--
SCS	Pre-test SCS	38.90	1	38.09	101.675	<0.001	0.528
	CG / EG1 / EG2	4.53	2	2.26	6.046	0.003	0.117
	Error	34.09	91	0.37	--	--	--
JSPE	Pre-test JSPE	3400.18	1	3400.18	39.316	0.001	0.302
	CG / EG1 / EG2	328.79	2	164.39	1.901	0.155	0,040
	Error	7870.04	91	86.48	--	--	--

Abreviaturas: gl: grados de libertad; GC: Grupo Control; GE1: Grupo Experimental, 4 semanas; GE2: Grupo Experimental, 8 semanas; MC: media cuadrática; DE: Desviación estándar; FFMQ: Cuestionario de atención plena de cinco facetas; SCS: Escala de Autocompasión; JSPE: Escala de empatía médica

De la misma forma, las diferencias significativas encontradas en la autocompasión entre el GC y los GE en la visita de seguimiento podrían atribuirse a la intervención realizada, en base a los resultados obtenidos de ANCOVA (Tabla 10).

Tabla 10. Comparación entre grupos entre las puntuaciones de seguimiento, controlando las puntuaciones del pre-test, mediante ANCOVA

Variable	Fuente	Tipo III Suma del cuadrado	gl	MC	F	p	η^2
FFMQ	Pre-test FFMQ	13.867,36	1	13.867,36	66.304	<0.001	0.456
	CG / EG1 / EG2	687.25	2	343.63	1.643	0.200	0.040
	Error	16.522,68	79	209.15			
SCS	Pre-test SCS	37.15	1	37.15	114.242	<0.001	0.591
	CG / EG1 / EG2	2.52	2	1.26	3.880	0.025	0.089
	Error	25.69	79	0.32			
JSPE	Pre-test JSPE	3259.28	1	3259.29	20.553	<0.001	0.206
	CG / EG1 / EG2	732.76	2	366.38	2.310	0.106	0.055
	Error	12.527,60	79	158.58			

Abreviaturas: gl: grados de libertad; GC: Grupo Control; GE1: Grupo Experimental, 4 semanas; GE2: Grupo Experimental, 8 semanas; MC: media cuadrática; DE: Desviación estándar; FFMQ: Cuestionario de atención plena de cinco facetas; SCS: Escala de Autocompasión; JSPE: Escala de empatía médica

6.4. Estudio IV: *“Efectos de dos programas de formación en mindfulness y autocompasión sobre la ansiedad y la depresión en tutores y residentes especialistas en medicina y enfermería familiar y comunitaria en España”*

La muestra de este estudio fue la misma que participó en el estudio previo (Tabla 5).

En la tabla 11 se observa que no hubo diferencias estadísticamente significativas entre el GC, GE1 y GE2 en el GADS ($p = 0.500$), GAS ($p = 0.495$) y GDS ($p = 0.615$) lo que indicó la similitud de estas variables entre los grupos antes de iniciar el programa de entrenamiento MBRS. Sin embargo, al comparar las puntuaciones de la evaluación post-test, se observaron diferencias estadísticamente significativas en el GADS y GDS, con un tamaño de efecto débil ($\eta^2 = 0.079$ y $\eta^2 = 0.114$, respectivamente). En ambos casos, estas diferencias se observaron entre GC y GE2, obteniéndose puntuaciones medias más altas en el primero de ellos, según los resultados de las comparaciones por pares mediante la prueba de Bonferroni. Asimismo, en las evaluaciones de seguimiento, las diferencias en las puntuaciones medias de los GADS, GAS y GDS también fueron estadísticamente

significativas, con un tamaño del efecto débil ($\eta^2 < 0,26$). Los participantes del GC mostraron puntuaciones medias más altas en estas tres variables con respecto a los de GE2.

Tabla 11. Comparación entre grupos de GADS, GAS y GDS en los diferentes puntos de evaluación, mediante ANOVA de un factor

Grupo	Evaluación	GC		GE1		GE2		F	p	η^2
		M	DE	M	DE	M	DE			
GADS	Pre-test	8.20	4.28	7.10	5.20	7.68	4.55	0.697	0.500	0.009
	Post-test	7.82*	4.64	5.82	5.51	4.82*	3.88	5.227	0.007	0.079
	Seguimiento	8.35*	4.19	6.41	5.63	5.18*	3.72	5.725	0.004	0.095
GAS	Pre-test	5.20	2.59	4.53	2.99	4.96	2.77	0.705	0.496	0.009
	Post-test	4.64	2.68	3.57	2.94	3.46	2.70	2.645	0.075	0.042
	Seguimiento	5.15*	2.41	4.12	3.08	3.54*	2.57	4.238	0.017	0.072
GDS	Pre-test	3.00	2.27	2.56	2.56	2.71	2.13	0.487	0.615	0.006
	Post-test	3.17*	2.35	2.25	2.81	1.36*	1.51	7.823	0.001	0.114
	Seguimiento	3.19*	2.28	2.29	2.88	1.64*	1.60	5.252	0.007	0.088

p<0.05 en análisis Post-Hoc (Bonferroni) entre GC y GE2.

Abreviaturas. GC: Grupo control; GE1: Grupo experimental, 4 semanas; GE2: Grupo experimental, 8 semanas; DE: desviación estándar; GADS: Escala de ansiedad y depresión de Goldberg; GAS: escala de ansiedad de Goldberg; GDS: escala de depresión de Goldberg.

La tabla 12 muestra diferencias estadísticamente significativas en las comparaciones intragrupo en las puntuaciones medias obtenidas en la evaluación post-test en relación a las pre-test en el GADS y GDS, obteniéndose puntuaciones más bajas en el post-test de los participantes que recibieron el programa de formación estándar de 8 semanas, con un tamaño de efecto mínimo ($\eta^2 < 0,26$). Sin embargo, no se obtuvieron diferencias estadísticamente significativas en las puntuaciones medias de ansiedad y depresión en la evaluación de seguimiento en relación con el pre-test y el post-test.

Tabla 12. Comparación intragrupos de GADS, GAS y GDS en el mismo momento de evaluación, mediante ANOVA para medidas repetidas

Variable	Grupo	Pre-test		Post-test		Seguimiento		MC	F	p	η^2
		M	DE	M	DE	M	DE				
GADS	GC	8.20	4.28	7.82	4.64	8.35	4.19	6.131	0.806	0.451	0.025
	GE1	7.10	5.20	5.82	5.51	6.41	5.63	7.314	0.850	0.437	0.050
	GE2	7.68*	4.55	4.82*	3.88	5.18	3.72	33.722	3.224	0.040	0.123
GAS	GC	5.20	2.59	4.64	2.68	5.15	2.41	1.939	0.750	0.476	0.023
	GE1	4.53	2.99	3.57	2.94	4.12	3.08	4.843	1.120	0.339	0.065
	GE2	4.96	2.77	3.46	2.70	3.54	2.57	10.597	2.194	0.123	0.087
GDS	GC	3.00	2.27	3.17	2.35	3.19	2.28	1.768	0.752	0.476	0.023
	GE1	2.56	2.56	2.25	2.81	2.29	2.88	0.961	0.622	0.543	0.037
	GE2	2.71*	2.13	1.36*	1.51	1.64	1.60	6.514	3.583	0.036	0.135

p<0.05 en análisis Post-Hoc (Bonferroni) entre pre-test y post-test

Abreviaturas. GC: Grupo control; GE1: Grupo experimental, 4 semanas; GE2: Grupo experimental, 8 semanas; M: Media; MC: Media cuadrática; DE: desviación estándar; GADS: Escala de ansiedad y depresión de Goldberg; GAS: escala de ansiedad de Goldberg; GDS: escala de depresión de Goldberg.

En la Tabla 13 se observa la comparación entre GC, GE1 y GE2 en la puntuación del post-test y de seguimiento, controlando la puntuación pre-test, utilizando ANCOVA. Este análisis mostró diferencias estadísticamente significativas en las variables GADS y GDS, entre diferentes grupos, confirmando las comparaciones intergrupales previas. Por lo tanto, estas diferencias, principalmente en GE2, podrían atribuirse al programa de capacitación del SAM.

Tabla 13. Comparación entre grupos en las puntuaciones del post-test y seguimiento, controlando las puntuaciones del pre-test, mediante ANCOVA

Evaluación	Variables	Fuente	Sumatorio de cuadrado Tipo III	gl	MC	F	p	η^2
Post-test	GADS	Pre-test GADS	656.61	1	656.61	49.880	< 0.001	0.354
		GC/GE1/GE2	118.15	2	59.08	4.488	0.014	0.090
		Error	1197.91	91	13.16			
	GAS	Pre-test GAS	195.23	1	195.23	37.249	< 0.001	0.388
		GC/GE1/GE2	24.53	2	12.26	2.340	0.102	0.128
		Error	476.95	91	5.24			
	GDS	Pre-test GDS	166.40	1	166.40	57.660	< 0.001	0.388
		GC/GE1/GE2	38.40	2	1.92	6.653	0.002	0.128
		Error	262.62	91	2.87			
Seguimiento	GADS	Pre-test GADS	413.79	1	413.80	29.497	< 0.001	0.272
		GC/GE1/GE2	85.04	2	42.52	3.031	0.050	0.071
		Error	1108.26	79	14.03			
	GAS	Pre-test GAS	107.98	1	107.98	18.644	< 0.001	0.191
		GC/GE1/GE2	25.78	2	12.89	2.226	0.115	0.053
		Error	457.52	79	5.79			
	GDS	Pre-test GDS	108.94	1	108.94	32.063	< 0.001	0.289
		GC/GE1/GE2	19.53	2	9.77	2.874	0.049	0.068
		Error	268.42	79	3.40			

p<0.05 en análisis Post-Hoc (Bonferroni) entre pre-test y post-test

Abreviaturas. GC: Grupo control; GE1: Grupo experimental, 4 semanas; GE2: Grupo experimental, 8 semanas; M: Media; MC: Media cuadrática; GADS: Escala de ansiedad y depresión de Goldberg; GAS: escala de ansiedad de Goldberg; GDS: escala de depresión de Goldberg.

7. DISCUSIÓN

1) Estudio descriptivo exploratorio

En los resultados obtenidos en el presente estudio, se puede observar que la mitad de los profesionales sanitarios sufren un alto grado de estrés laboral. Estos niveles de estrés son menores en aquellos que practican la atención plena. En este sentido, los profesionales de atención primaria, al igual que otros profesionales sanitarios, presentan un nivel de conocimiento en mindfulness aceptable aunque inferior en cuanto a la práctica (92). De la misma manera se demuestra que los niveles de estrés laboral y de mindfulness son similares para todos los perfiles profesionales analizados: médicos, enfermeros y residentes en formación.

Por otro lado, a pesar de que a priori el estrés suele relacionarse con el nivel de responsabilidad profesional, en este estudio no se observaron diferencias significativas de los niveles de mindfulness y estrés laboral entre las diferentes categorías profesionales analizadas. Con respecto al estudio realizado entre el personal de enfermería (35) se observó menores niveles de estrés laboral en aquellas que practicaban mindfulness frente a las que no lo hacían. Además, mostraron una mayor capacidad de observación y un nivel mayor de mindfulness global, en comparación con otros profesionales de la salud de atención primaria, incluso mayor a los que recibieron un programa de formación en mindfulness (93).

Existe una correlación positiva aunque débil, entre el grado de atención plena y el estrés laboral, de tal manera que los niveles de estrés son menores en aquellos que la practican. Además el grado de mindfulness en los profesionales de atención primaria se encuentra en consonancia con el que presentan otros grupos de profesionales sanitarios. Estos hallazgos confirman la teoría sobre el papel protector que ejerce la atención plena sobre la reducción del estrés laboral (88,94).

2) Estudio experimental

El pilar fundamental del presente trabajo gira en torno a los efectos que producen los niveles de estrés laboral y burnout que presentan los profesionales de la salud; en concreto tutores y residentes de medicina y enfermería familiar y comunitaria. Esta situación produce un peor rendimiento a nivel personal y profesional, que repercute directamente sobre la satisfacción del paciente y el bienestar psicológico del profesional.

El entrenamiento con mindfulness ha demostrado resultados positivos sobre estos aspectos, sin embargo, dado que el programa tradicional de 8 semanas requiere de mucha dedicación, se propuso esta tesis con el fin de analizar estos niveles en diferentes profesionales sanitarios; así como analizar si podían obtenerse los mismos beneficios mediante un programa abreviado de 4 semanas, más viable y factible a las diferentes poblaciones y contextos.

Se observó que el programa abreviado de 4 semanas no causó mejoras sobre los niveles de atención plena, autocompasión y empatía autopercebida en los tutores y residentes. Sin embargo, los participantes que recibieron el programa de entrenamiento estándar de 8 semanas, mejoraron sus niveles de atención plena y autocompasión, manteniendo estos efectos en el tiempo; aunque estas mejoras no se observaron sobre los niveles de empatía autopercebida. El programa de formación estándar de 8 semanas, también ha demostrado una mejora en la puntuación global de los niveles de ansiedad y depresión y en la depresión en particular, manteniendo estos resultados en el tiempo. Por el contrario, el programa de entrenamiento abreviado no ha producido un impacto significativo sobre estas variables.

Estudios en profesionales de AP

En el estudio llevado a cabo por Aranda et al (91). se evaluó la efectividad del programa un programa de atención plena y autocompasión de ocho semanas para reducir los niveles de estrés y burnout en los profesionales de atención primaria. Los beneficios potenciales obtenidos apuntan promover la práctica de atención plena y autocompasión en el entorno de la atención médica.

Estudios en docentes y discentes

Asimismo, en el ámbito docente, diferentes estudios llevados a cabo con el entrenamiento en mindfulness en la educación han tenido resultados positivos tanto para los profesores como para los estudiantes. El hecho de “estar atento” ha demostrado mejorar el rendimiento académico, la actitud empática y el estrés personal, además de disminuir la tendencia a cargarse con las emociones negativas de los otros (95–97).

Nos encontramos en un entorno especial en el ámbito de la asistencia sanitaria, en el que tutores y residentes comparten expectativas y responsabilidades de enseñanza y aprendizaje que se complementan al mismo tiempo con la práctica clínica. La eficacia de

estas técnicas de atención plena en los profesionales en este entorno docente, ya ha sido demostrada con anterioridad en otros estudios (98,99). A pesar de ello, aun no existen evidencias de su implementación continua para reducir el estrés en las áreas estudiadas.

La evidencia existente demuestra la correlación entre las prácticas de atención plena y autocompasión y el aumento de la resiliencia y el bienestar psicológico de los profesionales de AP (37,100,101) sin embargo no se ha demostrado los efectos de estos programas en los profesionales que compaginan su actividad asistencial con la enseñanza al residente, lo cual conlleva una mayor responsabilidad y estrés laboral. Además, se ha comprobado que no todas las manifestaciones de burnout siguen el patrón típico ya que algunos subtipos se encuentran camuflados dentro de una ráfaga de actividad, que finge una situación aparentemente contraria al burnout (93). Esta situación puede darse en concreto en aquellos profesionales que compaginan la práctica clínica con las actividades de tutorización voluntaria. Es por ello que este ensayo es especialmente relevante dado que analiza las situaciones de estrés ocultas presentes en un colectivo sobrecargado en el ámbito laboral. El Sistema Nacional de Salud en España en especial la AP, se encuentra sometido a una sobrecarga asistencial donde la falta de tiempo constituye un escollo de especial relevancia; es por ello que se requieren intervenciones efectivas, más breves y menos costosas que favorezcan su accesibilidad y adherencia permitiendo a un importante grupo de profesionales beneficiarse de estas prácticas. Desde este sentido se podrían ofrecer programas de entrenamiento en mindfulness en formatos más rentables y realistas que se ajusten a las características y condiciones de las diferentes poblaciones (102).

Programa de mindfulness combinado con autocompasión

Diferentes estudios han demostrado que los programas de entrenamiento en mindfulness como el MBSR, producen un aumento significativo sobre la autocompasión, especialmente importante para lograr reducir los niveles de estrés que presentan los profesionales sanitarios (89,100,103,104). La mayoría de los estudios publicados se han centrado en la aplicación de la atención plena o la autocompasión de manera independiente, sin embargo se hace evidente la importancia de implementar programas que aborden ambos aspectos al mismo tiempo (105,106).

La combinación de programas de mindfulness y entrenamiento empírico para cultivar las habilidades de autocuidado, mejora la autocompasión, la atención plena y el

conflicto interpersonal de los participantes (107–109). En el estudio llevado a cabo por Keng et al (103). se demostró que el entrenamiento de autocompasión reducía la tendencia de afrontamiento cognitivo mal adaptativo y mejoraba la predisposición a aceptar y experimentar nuevas emociones.

En relación con lo anterior, Shapiro et al (104). diseñó una intervención basada en el entrenamiento MBSR convencional combinado con meditación guiada de compasión en el que se observó un aumento significativo en la autocompasión en el GE (22.0%) frente al GC (3.0%). Estos resultados se relacionan con los obtenidos en el presente estudio debido a que los participantes que recibieron el programa de entrenamiento en MBSR y MSC de 8 semanas, informaron niveles significativamente más altos de autocompasión que los profesionales del GC.

El estudio llevado a cabo por Krasner et al. evaluó los efectos de un programa de entrenamiento en atención plena y autocompasión sobre el agotamiento, la empatía y el estado de ánimo de los médicos de AP. Los resultados obtenidos mostraron un aumento significativo en las habilidades de la atención plena, correlacionándose con mejoras a largo plazo en el agotamiento, los trastornos del estado de ánimo y la empatía (100). En contraste con estos hallazgos pero en línea con los obtenidos por Amutio et al (110) y Galantino et al (111), ninguno de los programas llevados a cabo en este estudio produjo un aumento significativo sobre los niveles de empatía autopercebida de los tutores y residentes. Esto puede deberse a que los programas de entrenamiento en mindfulness promueven niveles estabilizados de este aspecto, contrarrestando su sobreidentificación y reduciendo la fijación excesiva de pensamientos negativos (54,112,113).

Ansiedad y depresión

Por otro lado, los hallazgos obtenidos en el presente estudio mostraron que el programa de entrenamiento estándar de 8 semanas producía mejoras significativas sobre los niveles globales de ansiedad y de depresión en particular, sin embargo, no se obtuvieron mejoras sobre estos aspectos en los participantes que recibieron el programa de entrenamiento abreviado de 4 semanas.

Se ha demostrado que un entrenamiento estructurado y regular de atención plena o meditación, mejoran la regulación emocional y reducen la ansiedad, la depresión y los trastornos de estrés postraumático, síntomas relacionados con el COVID-19 especialmente en los profesionales de la salud (114–117). En tiempos de crisis como la

actual pandemia mundial, estas técnicas se han adaptado mediante la utilización de diferentes aplicaciones en línea como e-Health y Telehealth, aunque se requieren más estudios para demostrar su eficacia (118,119).

Diferentes investigaciones han demostrado que los programas de formación en mindfulness y autocompasión aumentan el nivel de conciencia y mejoran las estrategias de afrontamiento en situaciones de estrés, produciendo un mayor control de las emociones y una reducción significativa de los niveles de ansiedad y depresión (120–122). La revisión sistemática de Goya et al. (123) cuyo objetivo era analizar la eficacia de los programas de entrenamiento en mindfulness y meditación sobre el estrés en la población general, demostró una evidencia moderada de estas técnicas sobre la mejora de la ansiedad y la depresión tanto a las 8 semanas como a los 3-6 meses de la intervención. En relación con estos hallazgos, se encuentran los obtenidos en el metanálisis llevado a cabo por Spinelli et al (32). en el que se observó que la aplicación de estos programas en los profesionales sanitarios y en formación, reducía de manera significativa los niveles de ansiedad y depresión.

Hasta la fecha, se ha demostrado los múltiples beneficios que presentan los programas estándar de atención plena y autocompasión de 8 semanas sobre los profesionales de salud. A pesar del escaso número de investigaciones llevadas a cabo con estos programas durante un periodo más reducido de entre 3 o 4 semanas, en todas ellas se produjo una reducción significativa de los niveles de ansiedad y depresión, manteniendo sus efecto durante al menos los 9 meses posteriores (124–127).

El metaanálisis realizado por Kriakus et al. aportó evidencia adicional de la efectividad de estos programas sobre la mejora de aspectos psicológicos y los niveles de ansiedad y depresión. Además se observó que un programa de entrenamiento estándar es igual de efectivo que uno abreviado de 4 semanas en la reducción de estos síntomas (48). Sin embargo, estos hallazgos contrastan con los obtenidos en el presente estudio ya que la mejora de los niveles globales de ansiedad y depresión y depresión en particular solo se consiguió en aquellos participantes que recibieron el programa estándar de 8 semanas.

En línea con los estudios llevados a cabo por Duarte et al (120) y Duchemin et al.(128) en el presente estudio no se observaron mejoras significativas sobre el nivel de ansiedad en ninguno de los dos GE. En contraste con estos hallazgos, diferentes intervenciones demostraron la eficacia de un programa de entrenamiento MBSR en la

reducción de los niveles de ansiedad en estudiantes y profesionales sanitarios (45,108,129).

Por otro lado, y de acuerdo a los resultados obtenidos en el presente estudio, diferentes investigaciones han hallado una mejora significativa sobre los síntomas depresivos de estudiantes y profesionales sanitarios tras la implementación de un programa de entrenamiento MBSR estándar de 8 semanas (130,131).

La importancia de estos programas radica no solo en la consecución de estas mejoras a corto plazo, sino también en el mantenimiento de sus efectos a largo plazo. En el estudio de Fortney et al. (45) se observó el mantenimiento de los efectos producidos sobre los niveles de ansiedad durante los 9 meses posteriores a la intervención. En el estudio de Lane et al. (132) la reducción de los niveles de depresión perduraron en el tiempo después de un seguimiento de 3 meses. Estos resultados están en línea con los obtenidos en el presente estudio, ya que la disminución de los niveles de depresión en el GE2 se mantuvieron durante los 3 meses posteriores a la intervención.

3) Limitaciones de los dos estudios

Si bien se dispuso de una muestra representativa de tutores españoles y especialistas internos residentes en Medicina y Enfermería Familiar y Comunitaria, el predominio de mujeres, trabajadores de Atención Primaria y médicos pudo condicionar los resultados obtenidos. Además no fue posible garantizar que los participantes incluidos en el GC no participaran en ninguna sesión teórico-práctica de mindfulness o meditación durante el periodo de trabajo de campo, lo cual podría minimizar las diferencias en los resultados esperados al comparar este grupo con los dos GE.

En cuanto a la menor eficacia de la intervención breve de 4 semanas, entendemos que se debe a que no se dispone de tiempo suficiente para que se produzca un cambio de hábitos en el profesional. Estos cambios están estudiados ya a nivel de actividad cerebral y solo se producen mediante la práctica continuada y prolongada.

La práctica de la atención plena con aceptación, sin juicio y con afecto hacia lo observado genera cambios estructurales en el cerebro. Siegel (133) explica que en una primera fase se producen patrones de descarga que afectan las estructuras subcorticales y cambios corporales. En una segunda fase estos cambios afectan a la ínsula posterior y luego a la ínsula anterior. Y finalmente, afecta a la corteza cingulada anterior y a la

prefrontal media. Este último cambio proporciona “distancia” de lo exterior a la vez que se entra en sintonía con la otra persona.

Por tanto es necesario que el esfuerzo se consolide en hábito para que se produzcan dichos cambios cerebrales.

Lazar et al. (134) demostraron que ciertas partes de la corteza cerebral de las personas que practican la medicación, presentaban un mayor grosor de las áreas correspondientes en comparación con un grupo control.

Las pérdidas se produjeron sobre todo en los grupos de 8 semanas, por su mayor exigencia; algunos alumnos no finalizaron la formación de forma voluntaria y otros fueron excluidos por no alcanzar un mínimo de asistencia. Se trata de pérdidas que posiblemente, de haber podido finalizar y practicar las herramientas que se ofrecen, habrían tenido unos buenos resultados en la reducción del estrés.

Tampoco podemos ignorar el efecto Hawthorn o sesgo del observado. Los participantes en el grupo control no recibieron formación pero eran conscientes del tipo de estudio del que participaban y posiblemente, aunque no recibieran formación en ese periodo, estarían más interesados sobre el tema. De hecho, la simple cumplimentación de las distintas escalas puede provocar en el colaborador la autodetección de deficiencias y la búsqueda de herramientas de mejora.

A pesar de estas limitaciones, este estudio es pionero en comparar la efectividad de un programa de entrenamiento estándar MBSR y MSC con un programa abreviado en la población estudiada. Sus principales fortalezas son la metodología longitudinal empleada, que permite determinar las relaciones causales entre las variables de estudio, el uso de cuestionarios validados para la población española y su cumplimentación de forma anónima que garantiza su validez y fiabilidad y reduce la probabilidad de sesgos de información, además de la evaluación de los efectos a largo plazo.

8. CONCLUSIONES

1. Relacionado con el objetivo 1: Niveles de mindfulness y su relación con el estrés laboral y características sociodemográficas y laborales

- La puntuación media para el estrés fue elevado en la mitad de los participantes.
- La puntuación en atención plena (Cuestionario FFMQ) fue de nivel medio.
- El nivel de atención plena es mayor a más años de trabajo, mayor edad y por tanto en tutores.
- No hay diferencias significativas por género.
- Se observó una leve correlación negativa, pero significativa, entre el nivel de atención plena (puntuación general FFMQ) y el nivel de estrés relacionado con el trabajo.

2. Relacionado con el objetivo 2: efectividad de 4 frente a 8 semanas en los niveles de mindfulness, autocompasión y empatía de los tutores y residentes.

- El grupo experimental de 8 semanas presentó puntuaciones más altas que el grupo control en mindfulness y autocompasión, tanto en posintervención como a los tres meses. El tamaño del efecto fue significativo y débil.
- No se observaron diferencias estadísticamente significativas en los niveles de empatía autopercebida entre los grupos de estudio en ninguna de las evaluaciones.
- No se produjeron mejoras en el Grupo de 4 semanas.

3. Relacionado con el objetivo 3: efectividad de 4 frente a 8 semanas en los niveles de sobre los niveles de ansiedad y depresión de los tutores y residentes

- Los programas de formación MBSR y MSC estándar de 8 semanas han producido mejoras significativas sobre la ansiedad y los niveles de depresión de los tutores y residentes internos especialistas en Medicina y Enfermería Familiar y Comunitaria,
- Sin embargo, no se han asociado estas mejoras con la versión abreviada de 4 semanas.

9. PUBLICACIONES ORIGINALES QUE CONFORMAN LA TESIS DOCTORAL

RESEARCH ARTICLE

Open Access

Mindfulness in primary care healthcare and teaching professionals and its relationship with stress at work: a multicentric cross-sectional study



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Abstract

Background: Work stress is a common problem among the health personnel of the Spanish National Health System. The objective of this paper is to assess the state of mindfulness among Spanish primary care providers and to evaluate its potential relationship with work stress and basic labor and sociodemographic characteristics.

Methods: Cross-sectional, multi-centric study. Primary care nurses, teachers, teaching collaborators and residents assigned to six Spanish Family Medicine/Family and Community Care Departments were invited to participate ($n = 475$). A template was designed in Google Forms, including sociodemographic and work-related variables. The state of mindfulness was measured with the Five Facet Mindfulness Questionnaire (FFMQ), while work-related stress was measured using an ordinal scale ranging from 0 to 10 points. Descriptive and inferential statistical analyses were carried out, as well as bivariate and multivariate statistics.

Results: The mean age of participants was $40,14 \pm 13,12$ (range:23–65 years); 66.9% were women, 42.5% internal medicine residents, 29.3% family physicians, and 20.2% nurses. More than half (54.5%) knew about mindfulness, with 24.0% have received training on it, and 22.5% were usual practitioners. The average level of mindfulness was $127,18 \pm 15,45$ (range: 89–177). The average score of stress at work was $6,00 \pm 2,44$; 49.9% (range: 0–10). 49.9% of participants scored 7 or more on the stress at work scale. There was an inverse correlation between the levels of mindfulness (FFMQ total score) and work-related stress (Spearman's $r = -0.155$, $p = 0.003$). Significant relationships between the mindfulness practice and the level of mindfulness ($F = 29,80$, $p < 0.001$), as well as between the mindfulness practice and the level of work-related stress ($F = 9,68$, $p = 0.042$), were also found.

(Continued on next page)

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Conclusions: Levels of mindfulness in primary care health providers were in line with those levels observed in other groups of health professionals. Half of all of the primary care providers suffered from a high degree of stress. Although weak, inverse relationships were observed between levels of mindfulness and stress at work, with lower values of stress at work among those who practiced mindfulness.

Trial registration: NCT03629457.

Keywords: Mindfulness, Work stress, Subjective well-being, Primary health care professionals, Health services research

Background

A great number of healthcare professionals complain about their work conditions: excess of health care pressure, increasingly demanding users seeking treatment for their health problems and needs, a lack of sufficient time for training and re-training, as well as the perceived lack of support by managers and their superiors [1–3]. Professionals who also take on training tasks, suffer situations of even more overload. Many studies have suggested the need to solve this with an integral form of tackling the physical and psychological consequences of work stress in healthcare professionals. Not merely adopting measures at a work organization level and their work conditions, but also providing individual tools to handle stress, based on acceptance of reality and emotional self-regulation [4, 5].

In the specific area of post-graduate teaching, Spain boasts a high-quality model of specialized training [6]. The Training Program for Resident Intern Specialists (RIS) from the Family and Community Medicine specialty is 4 years long and the program for Family and Community Nursing is 2 years. Although the goal is for the young training doctor or nurse, to take on responsibilities in different areas of competence, both healthcare, teaching and research, in a progressive manner, stress is inevitable, especially in the emergency department [7]. An important figure in the training process of the RIS is the personal tutor. Carrying out this task of teaching implies a major work load in addition to the regular everyday work activity.

The term “mindfulness” originates in Buddhist teachings and implies a state, in which the individual focuses their present on the task at hand, without the mind digressing to the future or past, and without the sensation of attachment or rejection. Mindfulness is a quality that can be developed through appropriate training [8] and that generates significant benefits in the physical and mental health of those engaging in it. The level of mindfulness appears to be an influential factor in the determination of the degree of work-related stress experienced by healthcare professionals. In fact, diverse intervention studies and meta-analyses carried out on healthcare professionals, have demonstrated that meditation techniques increase the levels

of mindfulness and improve coping skills for work-related stress [9, 10].

We have barely found studies conducted in our field that examine the state of mindfulness in primary care healthcare professionals, on the one hand, with the potential relationship between the knowledge, training and the practice of mindfulness; and on the other, with the level of work-related stress perceived [9, 11]. Furthermore, we are unaware of its relationship with the teaching and learning condition of the professional. Therefore, this study aims to determine the state of mindfulness between Spanish primary care professionals, as well as to assess potential associations between the levels of mindfulness, the practice of mindfulness exercises and the degree of work-related stress. All this focused, especially, to the teaching areas, comparing the results according to the primary care professional profile.

Methods

Design

A cross-sectional study was conducted, using a self-administered online questionnaire, by healthcare professionals in the primary care teaching and care environment.

Participants and procedure

The inclusion criteria were: 1) To be a family doctor, a family medicine resident, or a primary care nurse; and 2) To provide informed consent for participation in the study. The study population consisted of primary care professionals from six Teaching Departments of the Spanish National Health System of different dimensions, according to the population density of each territory, distributed across the Spanish geography, (N total = 802; Córdoba N = 256; Almería, N = 147; Jaén, N = 185; Burgos, N = 64; Ponferrada, N = 63; and Zaragoza, N = 87). Of the surveyed participants professionals, 297 were teachers and 595 were Resident Intern Specialists in Family and Community Medicine/Nursing. For comparison purposes, a subsample of 267 nurses working in non-teaching care settings, in the Córdoba province, were also surveyed. The results from this sample have already been published [12]. Based on the results of previous research [12], it was necessary to recruit

at least 433 participants in the present study. The sample size was calculated assuming a precision of $\pm 3.5\%$, a confidence of 95%, and an expected knowledge about mindfulness of 36.5%. The calculations have been made with the GRANMO program (<http://www.imim.cat/ofertadeserveis/software-public/granmo/>). For the recruitment of the subjects, the study was disseminated by sending an email to all those responsible for the participating centers.

Measurements

The participation procedure was carried out electronically, through an online questionnaire created by our research group in Google Forms. The questionnaire was originally tested on a subsample of four subjects, in order to check its comprehensibility. The questionnaires were anonymous and the appropriate mechanisms were established to safeguard the confidentiality of the information collected.

Mindfulness was the main variable and it was measured using the Five Facet Mindfulness Questionnaire (FFMQ), validated for the Spanish population [13]. The FFMQ consists of 39 items and five dimensions: observation, description, acting conscientiously, lack of judgment and lack of reactivity. The participants answered to each item on a Likert scale, with response items ranging from 1 (never or rarely true) to 5 (very often or almost true). The FFMQ permits the computation of a total mindfulness score, from the total of all of its dimensions, such that higher scores mean greater levels of mindfulness. The psychometric characteristics of the FFMQ in the Spanish population are appropriate, with a response range from between 89 and 177. Computation of internal consistency for the present data showed an alpha coefficient of 0.88 for the FFMQ total score. In the correlations with other scales, the FFMQ validated for the Spanish population showed an expected and significant relationship with almost every scale, except the observation dimension [13]. In addition to the state of mindfulness, which was measured by the FFMQ, other variables were also included, such as age, gender, professional profile, work site, labor seniority, degree of awareness of the mindfulness concept, prior training, level of practice and frequency. The level of work-based stress was also assessed for the prior 2 weeks, using a visual analogue ordinal scale. Participants were asked to rate their work-based stress using the following question: On a scale from 0 (none) to 10 (maximum), what degree of work stress have you had in the last 2 weeks at your usual job?. In previous studies, this type of scale has been found to be suitable for the assessment of perceived stress [14].

Ethical considerations

The study protocol was approved by the Ethics and Clinical Research Committee of Córdoba, (number 275; referencie 3845). Information on the study's objective was provided online to the professionals who agreed to participate via informed consent prior to completing the questionnaire. In accordance with personal data protection and confidentiality regulations (European Regulation on data protection and in accordance with Organic Law 3/2018 on Personal Data Protection and Digital Rights Guarantee).

Statistical analysis

Data centralization, dispersion and position variables were used, as well as absolute and relative frequencies to describe the variables that were the subject of the study, based on their distribution. Confidence intervals were calculated at 95% (95% CI) for the main estimators. In order to examine the relationship between the sociodemographic and labor variables, and the degree of mindfulness or the level of work-related stress, bivariate analyses were conducted, applying the Spearman's correlation coefficient (r), the Student's t test and the ANOVA test (upon verifying the normality of the variables through the Kolmogorov-Smirnov test; in the contrary case, either the Spearman's correlation coefficient, Mann-Whitney U test or the Kruskal-Wallis test was used). Multivariate analyses were also applied, through application of multiple linear regression models, using the dependent variables of mindfulness and level of work-related stress and the independent variables of age, gender, profession, amount of time worked and knowledge, training and practice of mindfulness, in model 1 and of these only those whose p value was less than 0.05 were considered in model 2. The statistical significance level was established at alpha error ≤ 0.05 . The SPSS (Statistical Package for the Social Sciences) v.22 was used for data analysis. SPSS is a statistical computer program widely used in the social and applied sciences (<https://www.ibm.com/products/spss-statistics>).

Results

The survey was completed by 475 primary care health workers, with an overall response rate of 44.5%. The response rate varied between 47.2% of the members of the teaching units and 35.9% of the non-teaching nurses. The mean age was 40.14 ± 13.12 -SD- (range: 23–65 years). 66.9% of the respondents were women. 42.5% were resident intern physicians; 29.3% were family doctors and 20.2% were nurses. Of the physicians, 61.0% had worked for over 20 years, as was the case with 42.7% of the nurses, whereas 91.2% of the resident intern physicians had been working for less than 4 years.

The mean score for work-related stress was 6.00 ± 2.44 (range: 0–10, 95% CI: 5.78–6.22), with 49.9% of the

participants scoring 7 or higher on the work-related stress scale.

Regarding mindfulness, 54.5% stated that they knew the meaning of this concept; 24.0% of them, had received prior training on its practice, while 22.5% currently engaged in mindfulness exercises. Of this 22.5, 4% of the surveyed participants practiced mindfulness daily, while 4.2% practiced it from two to three times a week and 14.3% did so occasionally.

The mean level of mindfulness, assessed with the FFMQ questionnaire, was 127.18 ± 15.45 (range: 89–177; 95% CI: 125.79–128.57).

As seen in Table 1, using bivariate analysis, it was possible to observe statistically significant differences between the levels of mindfulness and age ($p < 0.001$; highest mean score on the FFMQ for the oldest professionals), professional category ($p < 0.001$; lowest score

for the resident intern physicians), amount of time worked ($p < 0.001$; higher mean score for professionals having worked for the longest amount of time), and training or prior practicing of mindfulness ($p < 0.001$). No significant differences were found based on gender ($p = 0.910$) or prior knowledge of the concept of mindfulness ($p = 0.145$).

Table 2 shows a statistically significant association between the stress-related work situation of the professional and his/her age ($p < 0.001$), professional profile ($p < 0.001$), amount of time worked ($p < 0.001$), and the practice of mindfulness ($p < 0.001$). In the bivariate analysis shown in this table, no significant differences were found, with regards to gender ($p = 0.714$), knowledge ($p = 0.727$) or prior training in mindfulness ($p = 0.251$).

A direct, statistically significant relationship was found between the degree of exercise practice and level of

Table 1 Relationship between the study variables and the state of mindfulness through a bivariate analysis

Variables	Mean \pm SD (95% CI of the mean)	P value
Age (years):		< 0.001*
-Under 30	121.94 \pm 13.49 (119.95–123.90)	
-From 30 to 45	129.75 \pm 14.93 (126.81–132.70)	
-46 or over	130.81 \pm 16.14 (128.51–133.10)	
Gender:		0.910**
-Male	127.29 \pm 14.68 (124.98–129.61)	
-Female	127.12 \pm 15.84 (125.37–128.87)	
Professional category:		< 0.001*
-Family physician	130.62 \pm 15.29 (128.31–132.92)	
-Nurse	131.19 \pm 16.39 (127.88–134.49)	
- Internal medicine residents	122.42 \pm 13.83 (120.52–124.32)	
Amount of time worked:		< 0.001*
-Less than 4 years	122.59 \pm 13.75 (120.70–124.48)	
-From 5 to 10 years	130.59 \pm 16.76 (125.78–135.40)	
-From 11 to 20 years	127.35 \pm 15.83 (123.63–131.07)	
-Over 20 years	132.36 \pm 15.45 (129.88–134.84)	
Aware of mindfulness:		0.145**
-Yes	128.12 \pm 15.87 (126.18–130.07)	
-No	126.05 \pm 15.45 (124.05–128.04)	
Has received training on mindfulness:		< 0.001**
-Si	130.73 \pm 18.01 (127.39–134.07)	
-No	126.06 \pm 14.40 (124.57–127.55)	
Practices mindfulness:		< 0.001*
-Every day	145.53 \pm 17.85 (136.92–154.13)	
-From 2 to 3 times/week	136.00 \pm 15.82 (128.59–143.41)	
-Occasionally	129.35 \pm 15.82 (123.87–126.83)	
-Never	125.35 \pm 14.43 (123.87–126.83)	

SD Standard deviation, 95% CI 95% confidence interval

* ANOVA test; ** Student's t test

Table 2 Relationship between the study variables and the level of work-related stress through a bivariate analysis

Variables	Mean ± SD (95% CI of the mean)	P value
Age (years):		< 0.001*
-Under 30	5.38 ± 2.61 (5.00–5.77)	
-From 30 to 45	6.36 ± 2.40 (5.88–6.83)	
-46 or over	6.39 ± 2.18 (6.08–6.70)	
Gender:		0.714**
-Male	6.10 ± 2.31 (5.76–6.46)	
-Female	5.95 ± 2.50 (5.67–6.22)	
Professional category:		< 0.001*
-Family physician	6.34 ± 2.03 (6.04–6.65)	
-Nurse	6.51 ± 2.39 (6.02–6.99)	
- Internal medicine residents	5.47 ± 2.68 (5.10–5.83)	
Amount of time worked:		< 0.001*
-Less than 4 years	5.40 ± 2.66 (5.03–5.76)	
-From 5 to 10 years	6.22 ± 2.08 (5.63–6.82)	
-From 11 to 20 years	6.72 ± 2.13 (6.22–7.22)	
-More than 20 years	6.40 ± 2.20 (6.04–6.76)	
Aware of mindfulness:		0.727**
-Yes	6.02 ± 2.67 (5.75–6.30)	
-No	5.96 ± 2.64 (5.61–6.32)	
Has received training on mindfulness:		0.251**
-Yes	5.85 ± 2.37 (5.41–6.29)	
-No	6.04 ± 2.47 (5.79–6.30)	
Practices mindfulness:		0.040*
-Every day	4.58 ± 2.34 (3.45–5.71)	
-From 2 to 3 times/week	6.70 ± 1.84 (5.84–7.56)	
-Occasionally	5.96 ± 2.39 (5.38–6.53)	
-Never	6.04 ± 2.47 (5.79–6.29)	

SD Standard deviation, 95% CI 95% confidence interval

* Kruskal-Wallis Test; ** Mann-Whitney U

mindfulness, assessed in the FFMQ questionnaire ($F = 14.389$, $p < 0.001$). A slight, but significant negative correlation was also found between the level of mindfulness (FFMQ overall score) and the level of work-related stress ($r = -0.155$, $p = 0.003$).

In the multivariate analysis (Table 3), variables associated with the level of mindfulness were: age ($B = 0.313$; $p < 0.001$), practice of mindfulness ($B = 4.614$; $p < 0.001$), and work-related stress ($B = -1.044$; $p < 0.001$). On the other hand, as seen in Table 4, levels of work-related stress are associated with age ($B = 0.036$; $p < 0.001$) and level of practicing of mindfulness ($B = -0.334$; $p < 0.001$). In contrast with the findings from the bivariate analysis, as seen in Tables 3 and 4, the multivariate analysis did not reveal significant relationships, between professional profile and levels of mindfulness, or perceived work-related stress.

Discussion

Half of the healthcare professionals appear to suffer from a high degree of work-related stress. There is a positive, though weak, correlation between the degree of mindfulness and work stress, with less stress among those who practice mindfulness. In this sense, the state of mindfulness in primary care healthcare providers appears to be in line with that observed in other professional healthcare groups [15], with a level of knowledge more than acceptable, although much lower in terms of practice.

This finding supports the potential protective role of mindfulness in the reduction of work-related stress. Meditative practice might be associated with greater levels of mindfulness, and this, in turn, to the reduction of perceived work-related stress. Some prior studies are in line with this explanatory model [16, 17].

Table 3 Variables associated with the state of mindfulness through a multivariate analysis

Variables	Model 1				Model 2			
	B	95.0% CI for B		p	B	95.0% CI for B		p
		Lower Bound	Upper Bound			Lower Bound	Upper Bound	
Age	0.202	-0.015	0.419	0.068	0.313	0.211	0.414	< 0.001
Gender	0.533	-2.276	3.343	0.709	-	-	-	-
Profession	-1.071	-3.626	1.485	0.411	-	-	-	-
Time working in current position	0.286	-0.681	1.254	0.561	-	-	-	-
Awareness of mindfulness	1.039	-1.970	4.048	0.498	-	-	-	-
Training in mindfulness	-0.463	-4.047	3.122	0.800	-	-	-	-
Mindfulness practice	4.727	2.720	6.734	< 0.001	4.614	2.845	6.383	< 0.001
Work-related stress	-1.062	-1.603	-0.520	< 0.001	-1.044	-1.579	-0.508	< 0.001
Intercept	118.461	-	-	-	114.675	-	-	-

Maximum model (model 1). Parsimonious model (model 2). Dependent variable: mindfulness (FFMQ); Coefficient of determination of model 1: $R^2 = 0.163$ ($F = 11.35$; $p < 0.001$); Coefficient of determination of model 2: $R^2 = 0.161$ ($F = 29.80$; $p < 0.001$). $n = 474$; 95% CI 95% confidence interval

The multivariate analysis demonstrates that there are no differences between the different professional profiles that were analyzed: physicians, nurses and residents in training, both with respect to the level of mindfulness as well as the level of work-related stress. These variables have been studied separately for the distinct types of professionals [18]. This study brings the novelty of comparing at the same time the level of mindfulness and stress between different professional groups. There appears to be a discrepancy in this result, since a priori it appears that stress may be more closely related to the level of professional responsibility.

It has been sufficiently accredited that emotional intelligence prevents burnout and work-related stress, not only in physicians but also in nurses [19, 20]. And the practice of mindfulness is another strategy used for emotional reinforcement. It is a technique which, when put into practice, eliminates (in theory) the anticipatory anxiety, which is a trigger for work-related stress. Some

studies carried out in primary health care professionals, show that meditation techniques serve to improve coping with stress and empathy [16]. It is likely that the effectiveness of these programs, in preventing work-related stress is closely related to the capacity for self-compassion [21]. An attitude of self-compassion towards oneself, is one of the key elements of mindfulness, since it permits us, to better manage difficult emotions, such as fear, anger, sadness or doubt.

Our multidisciplinary research group has also examined the specific effect of mindfulness on nursing [12] and other primary care professionals, as we have detailed previously [21].

In the study carried out among the nursing staff [12] it was found that those nurses who practiced mindfulness had lower levels of work stress than those who did not. Within the dimensions of the FFMQ, they showed a greater capacity for observation, in addition to a higher level of global mindfulness, compared to other primary

Table 4 Variables associated with the state of work-related stress through a multivariate analysis

Variables	Model 1				Model 2			
	B	95.0% CI for B		p	B	95.0% CI for B		p
		Lower Bound	Upper Bound			Lower Bound	Upper Bound	
Age	0.000	-0.037	0.036	0.976	0.036	0.019	0.052	< 0.001
Gender	0.036	-0.436	0.507	0.882	-	-	-	-
Profession	-0.035	-0.464	0.394	0.871	-	-	-	-
Time working in current position	0.186	0.024	0.347	0.024	-	-	-	-
Awareness of mindfulness	-0.318	-0.822	0.187	0.216	-	-	-	-
Training in mindfulness	0.241	-0.360	0.843	0.431	-	-	-	-
Mindfulness practice	-0.378	-0.714	-0.043	0.027	-0.334	-0.631	-0.037	< 0.001
Intercept	5.771	-	-	-	5.015	-	-	-

Maximum model (model 1). Parsimonious model (model 2). Dependent variable: perceived work-based stress; Coefficient of determination of model 1: $R^2 = 0.054$ ($F = 8.86$; $p = 0.002$); Coefficient of determination of model 2: $R^2 = 0.039$ ($F = 9.68$; $p < 0.001$). $n = 474$; 95% CI 95% confidence interval

care health professionals, even higher than in those who received a training program in mindfulness [21].

Recently, Aranda et al. [22] evaluated the effectiveness of an eight-week training program on mindfulness and self-compassion, to reduce stress levels and burnout in primary care professionals. Despite the limited response to the program, it suggests the potential benefits of promoting mindfulness and practices of self-compassion in the healthcare environment.

Other interesting experiences are available, such as the program proposed approximately one decade ago, by Krasner, Epstein et al. [23], with primary care physicians. The results were conclusive: the participation in a communication program, was associated with short and long-term improvements, in well-being and attitudes associated with patient-centered care.

Delving into the education field, it is especially interesting the fact observed by Beddoe et al. [24] that «being attentive» not only decreases personal stress in students of a training intervention, but also improved their empathetic attitude and decreased the tendency to be loaded down with negative emotions of others.

Also, in the teaching environment, certain experiences in the area of effectiveness of mindfulness in education have had positive results, not only for teachers [25] but also for students [26], with substantial improvement taking place in academic performance.

There is a peculiarity of our study that makes it different from others. We are in a special teaching and learning environment: healthcare. Teachers and residents share expectations and responsibilities of teaching and learning with the care activity and the stress that may be caused by this situation. The work of the teacher tutors of the Family Medicine Departments, does not differ substantially from that of the purely educational environment. But perhaps the complementarity of their teaching competencies, with the clinical practice, makes the latter considered a priority undermining the teaching activity.

The effectiveness of mindfulness techniques of the professionals (such as physicians and nursing residents) in the learning process, has been demonstrated in the past [27] as well as recently [28]. However, it does not appear that these evidences had been accompanied by its serious and ongoing implementation to reduce stress in the areas that have been studied.

In our study, we analyze the prior level of mindfulness and its potential relationship with some variables. We have not found differences in mindfulness nor in the level of work-related stress, by professional groups: in nurses, physicians and residents, suggesting that intervention programs may be useful for all of the professional groups.

There are no differences detected in terms of gender, but there were, with regards to age. In this sense, one of

the pending areas to be addressed, also suggested in other studies, is the lack of assessment of the long-term effectiveness of the intervention programs.

An inverse relationship was observed between the level of practicing of mindfulness exercises and the level of work-related stress, such that, with greater practice levels, there were lower work-related stress levels. This coincides with the results from past studies and supports the need for the practicing of mindfulness in the care and training environments.

Limitations include the sample composition (unless it can be demonstrated that it maintains the same percentages by occupation as the general Spanish population). It should be mentioned that at least the sample size is high, taking into account the type of statistical analysis carried out, therefore the statistical power was adequate. Another limitation is the use of a scale with only one item to assess perceived work-related stress, since this is a complex construct. However, this work is an exploration that should be confirmed in future studies. The final limitation is the type of design used, which, being cross-sectional, does not permit us to establish causal relationships. Cross-sectional data is always limited to examine a research question which entails a relationship (mindfulness reduces stress). But maybe it is the other way round and those people who have less stress, have more time to do practice mindfulness. So, in future studies, the potential causal relationships between variables derived from the observed association should be studied using appropriate designs.

Conclusions

Given the high percentage of primary care providers who experience work-related stress, and the fact that Mindfulness-Based Interventions seem to be useful to reduce this problem, health authorities and managers in charge of continuous training programs should take them into account in the primary care setting.

Mindfulness-Based Interventions are very versatile techniques, ideal for primary care contexts or similar, and that achieve their greatest degrees of effectiveness not only in patients with symptoms of stress, anxiety or depression, but also in health professionals. It is necessary to carry out intervention studies directed at these health professionals in order to verify if the standardized programs of instruction in mindfulness manage to reduce the level of stress and burnout.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12875-021-01375-2>.

Additional file 1.

Abbreviations

FFMQ: Five Facet Mindfulness Questionnaire; RIS: Resident Intern Specialists; SD: Standard deviation; 95% CI: 95% confidence interval; SPSS: Statistical Package for the Social Sciences

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Authors' contributions

RM, JV, LP and CP designed and developed the study protocol. LP, CB, HM, JG and RM conducted the study and collected the data. LP and RM analyzed the data and wrote the manuscript. All authors interpreted the data, and read and approved the final manuscript. NL and JG provided critical revisions.

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Availability of data and materials

The raw data supporting our findings is in the companion file (Supplementary Material).

Ethics approval and consent to participate

The project has been approved by the Ethics and Clinical Research Committee of the Reina Sofía Hospital in Córdoba (ref. 3845). The informed consent of the participants was requested. The written informed consent of the participants was obtained by indicating it in the data collection form used.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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STUDY PROTOCOL

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Controlled clinical trial comparing the effectiveness of a mindfulness and self-compassion 4-session programme versus an 8-session programme to reduce work stress and burnout in family and community medicine physicians and nurses: MINDUDD study protocol

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Abstract

Background: Health personnel are susceptible to high levels of work stress and burnout due to the psychological and emotional demands of their work, as well as to other aspects related to the organisation of that work. This paper describes the rationale and design of the MINDUDD study, the aim of which is to evaluate the effectiveness of a mindfulness and self-compassion 4-session programme versus the standard 8-session programme to reduce work stress and burnout in Family and Community Medicine and Nursing tutors and residents.

(Continued on next page)

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Methods: The MINDUDD study is a multicentre cluster randomised controlled trial with three parallel arms. Six Teaching Units will be randomised to one of the three study groups: 1) Experimental Group-8 (EG8); 2) Experimental Group-4 (EG4) Control group (CG). At least 132 subjects will participate (66 tutors/66 residents), 44 in the EG8, 44 in the EG4, and 44 in the CG. Interventions will be based on the Mindfulness-Based Stress Reduction (MBSR) program, including some self-compassion practices of the Mindful Self-Compassion (MSC) programme. The EG8 intervention will be implemented during 8 weekly face-to-face sessions of 2.5 h each, while the EG4 intervention will consist of 4 sessions of 2.5 h each. The participants will have to practice at home for 30 min/day in the EG8 and 15 min/day in the EG4. The Five Facet Mindfulness Questionnaire (FFMQ), Self-Compassion Scale (SCS), Perceived Stress Questionnaire (PSQ), Maslach Burnout Inventory (MBI), Jefferson Scale of Physician Empathy (JSPE), and Goldberg Anxiety-Depression Scale (GADS) will be administered. Measurements will be taken at baseline, at the end of the programs, and at three months after completion. The effect of the interventions will be evaluated by bivariate and multivariate analyses (Multiple Linear Regression).

Discussion: If the abbreviated mindfulness programme is at least as effective as the standard program, its incorporation into the curriculum and training plans will be easier and more appropriate. It will also be more easily applied and accepted by primary care professionals because of the reduced resources and means required for its implementation, and it may also extend beyond care settings to academic and teaching environments as well.

Trial registration: The study has been registered at [ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT03629457) (NCT03629457; date of registration: 13.08.2018).

Background

Work stress and burnout are two common problems among the health personnel of the Spanish National Health System (*Sistema Nacional de Salud-SNS*) due to the high health care burden on this system, among other reasons, with users increasingly demanding solutions to their health problems and needs, insufficient time for training and recycling, and perceived lack of support from managers [1–3]. Many studies show the need to address the physical and psychological consequences of work stress and burnout on health professionals not only by implementing measures regarding work organisation and working conditions but also by providing professionals with tools promoting self-care to help them cope with reality through emotional self-regulation [4, 5].

The Spanish model for training physicians and nurses in different health specialities—known as the *Internal Medical Resident Specialisation Program (MIR)* [6]—is of high quality and is highly regarded in Europe and Latin America. The speciality of Family and Community Medicine (via MIR) is 4 years and that of Family and Community Nursing (via EIR) is 2 years. Both specialities have been developed under the organisation and structure of the Teaching Units (TU) of Family and Community Medicine and Nursing within the SNS. Although residents are expected to assume responsibilities progressively, work stress is inevitable, especially during emergency shifts. An important figure in resident training is the personal tutor. This is a Primary Care (AP) professional with a minimum of five years of experience in patient care who voluntarily and selflessly tutors residents in training. This overload involving patient care

and resident supervision generates more work stress and burnout.

Mindfulness is considered a third-generation therapy [7], having attained a strong reputation in the last several decades in Western countries, especially following the development of the MBSR technique by Jon Kabat-Zinn at the University of Massachusetts (USA) [8–10].

Since 2016, in countries such as the USA, at least 30% of medical schools have already included mindfulness in their curriculum plans [7], but in Spain, programmes to reduce work stress and burnout—both in undergraduate and postgraduate studies and in health care settings—by encouraging this practice are still rare. A study conducted by our group found that few AP professionals know of and practice mindfulness [11], even though authors are increasingly recommending training interventions in this technique [12]. Several studies show that by enhancing self-awareness, the professional improves self-care, which improves psychological well-being. Mindfulness-based interventions show good results in improving coping with stress and burnout and in increasing empathy in professionals [13–15], including those dedicated to health care [16].

The term compassion refers to “a feeling of affection or closeness towards other human beings who are suffering” [17–19], an aspect of vital importance in patient care. A key element of compassion for health professionals is self-compassion. If professionals are not accepted and respected, they will hardly display those emotions towards the people to whom they lend their help through empathy [20]. Self-compassion is often linked to mindfulness and is usually incorporated into

training programmes [21] because it has been shown to facilitate doctor-patient communication and to improve clinical and psychological patient parameters [22, 23].

Few previous studies allow us to assess the effect of mindfulness programmes and self-compassion therapy in reducing stress and burnout in AP health personnel. The existing studies [16, 24, 25], together with a systematic review of 8 studies including health professionals and teachers, show the favourable effect of these programmes and strong evidence of the use of mindfulness practice to reduce burnout.

The most well-known mindfulness training program, the MBSR [8–10], consists of 8 weekly sessions lasting 120–150 min, which requires a high level of student commitment to adhere to the sessions and to devote 45 min of daily practice at home. Several attempts have been made to shorten the programs, mostly proposing to reduce interventions to four weeks to make them more viable and accessible while trying to maintain their therapeutic effects and effectiveness and adapting them to the specific target populations and contexts [26–29]. We have found no systematic reviews on the efficacy of these shorter interventions compared to the standard MBSR-based programmes when applied to health professionals—both to attending physicians and to those in postgraduate training. A recently published study [30] concluded that both programmes work in the same way, although the recruited population only included university students. Therefore, it is necessary to undertake studies providing us with greater and more robust evidence on the effectiveness of the abbreviated mindfulness and self-compassion programmes in the group of AP professionals, which will allow us to recommend the inclusion of such programmes in the postgraduate curriculum and in continuing education programmes.

Objective

The objective of the MINDUDD study is to evaluate the effect of a mindfulness and self-compassion training programme on the levels of work stress and burnout in residents and tutors of Family and Community Medicine and Nursing. This study is based on the hypothesis that an abbreviated 4-session programme of mindfulness and self-compassion is at least as effective as the standard 8-session programme to increase mindfulness and reduce the levels of work stress and burnout of AP residents and tutors.

Methods/design

Study design (Fig. 1)

The MINDUDD study comprises an open-label, pragmatic, non-inferiority, multicentre, cluster randomised controlled trial with three parallel arms. The participating UDDs will be randomised to one of the three study

groups. Interventions will last for 8 weeks for one group (EG8) and 4 weeks (EG4) for the other. In both groups, there will be a follow-up at three months to check the maintenance of the programs' effect. The control group (CG) will be reassessed 8 weeks after the start of the fieldwork.

Study setting

The study population will be AP professionals who work in the SNS, assigned to 6 TU (total $N=802$, Córdoba = 256, Almería = 147, Jaen = 185, Burgos = 64, Ponferrada = 63, and Zaragoza Sector I = 87), whether AP tutors ($N=297$) or residents ($N=595$) of Family and Community Medicine and Nursing.

Eligibility criteria

-Inclusion criteria: AP professionals who are active and give their informed consent to participate in the study.

-Exclusion criteria: Having previously attended a mindfulness training course or workshop of at least 4 weeks, being an active mindfulness practitioner, being on prolonged sick leave during fieldwork, or having mental disorders discouraging the intervention.

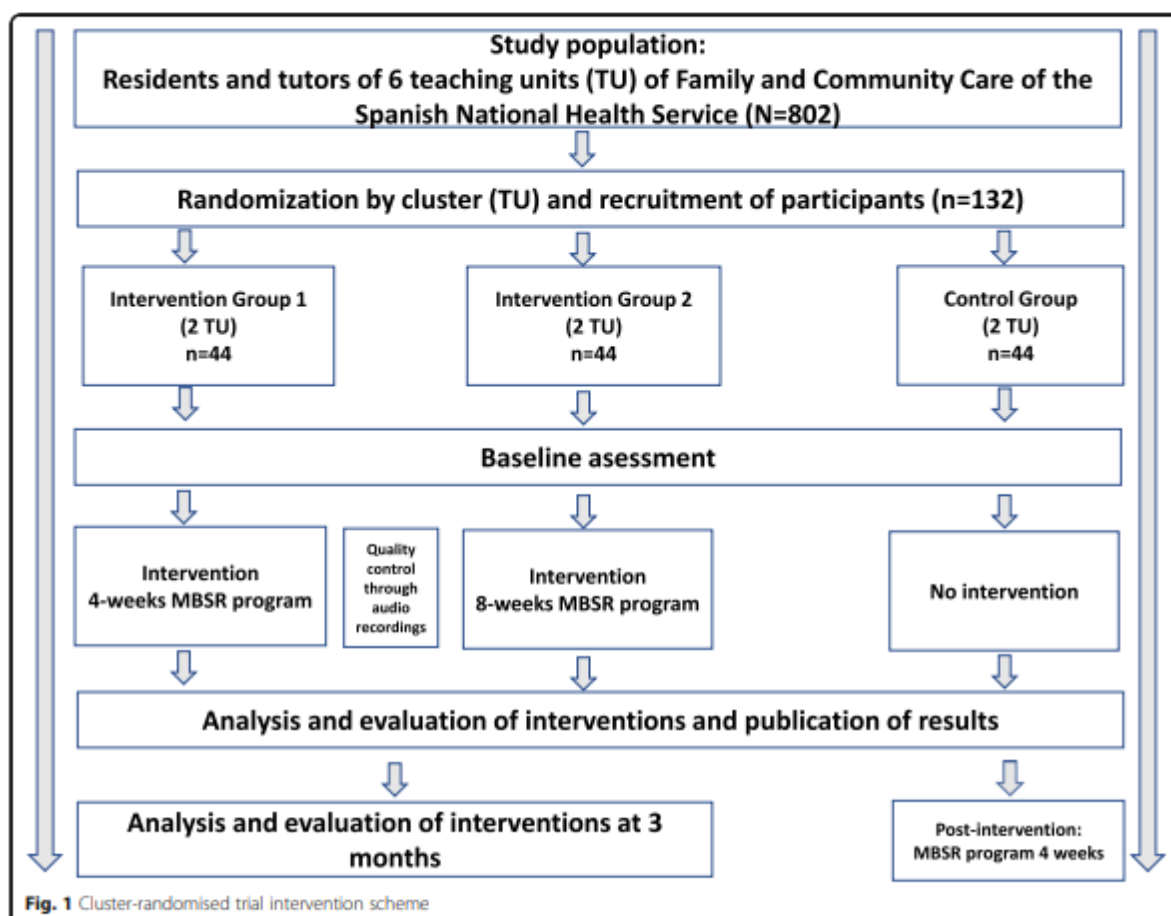
Intervention scheme

The interventions will be based on the MBSR programme [8–10] designed by Jon Kabat-Zinn and used at the Medical Center of the University of Massachusetts. Certain self-compassion practices of the Mindful Self-Compassion (MSC) programme [17–19] (Table 1) will be incorporated. The programmes to be tested will be adapted to the participating health care group and will differ by their duration and time dedicated to the tasks [30]:

- 1) Standard program: The format will be 8 weekly sessions of 2.5 h each. Participants must practice at home for 30 min a day.
- 2) Abbreviated program: The format will be 4 weekly sessions of 2.5 h each. Participants must practice at home for 15 min a day.

The sessions are held in groups, alternating moments of silence with others of collective exploration on the best strategies to address complex and difficult situations, always looking for practical applications in the personal and professional fields. The contents of the sessions are oriented to the knowledge of mindfulness, the perception of reality, the power of emotions, the reaction to stress and emotional tension, resilience, responding to stress, using mindful communication, taking care of oneself, time management, and integrating mindfulness into everyday life.

The training programmes will be unified in the different TU and taught by the same two instructors throughout the course to avoid any variability associated with



the therapist. The instructors will have proven skills through university accreditation to deliver this training and will carefully follow the interventions, using standardised and uniform methodological criteria, which will be stated in a manual.

3) CG: without intervention. Participants will only receive a 1-h information session explaining the study design and their role in the study and inviting them to complete the expected data at two time points (coinciding with the interventions in the EG8). They will pledge not to receive any intervention and will be asked not to participate in the practice of any session of full attention or meditation techniques during the study period. After the fieldwork, they will be offered the opportunity to participate in the abbreviated training programme.

Outcomes and measures

The professionals will be asked to complete pre- and post-intervention questionnaires. The pre-intervention questionnaire will be filled out upon recruitment (baseline). The post-intervention questionnaire will be

completed at 4 (EG4) or 8 weeks (EG8 and CG) after baseline and at 3 months after completion.

To measure the dependent variables or outcomes, the following instruments will be used (an additional file shows this in more detail [see Additional file 1]):

Primary outcome variables

- Mindfulness: The Five Facet Mindfulness Questionnaire (FFMQ), with 39 items (range: 39–195 points) and five subscales: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. Higher total values indicate better full mindfulness [31–33].
- Self-compassion: The Self-Compassion Scale (SCS). The abbreviated scale of the Spanish version will be used, validated by García-Campayo et al. [34, 35], with 12 items scored with a Likert scale (1 to 5), which measures how the subject usually acts towards himself in difficult times. It consists of six subscales: self-friendliness, common humanity,

Table 1 Mindfulness and self-compassion training programs

	8-WEEK PROGRAM	4-WEEK PROGRAM
PRESENTATION	General explanation, objectives, schedule.	
BASELINE MEASUREMENT	Pre-intervention measurements: general data, FFMQ, SCS, PSQ, MBI-GS, JSPE, GADS, AES questionnaires.	
1st SESSION	Raisin exercise. What is mindfulness? Practice: body scan. Informal practice: brushing teeth Task: 30' body scan.	Raisin exercise. What is mindfulness? Managing thoughts and emotions during practice. Practice: body scan. Informal practice: brushing teeth Task: 30' body scan.
2nd SESSION	Concepts: stress and burnout Practice: mindful breathing (sitting). 3-min mindfulness practice. Informal practice: mindful shower, 3'. Task: 30' body scan + 10' sitting.	Concepts: stress and burnout. Primary and secondary suffering. Practice: mindful breathing (sitting). 3-min mindfulness practice. Informal practice: mindful shower, 3'. Task: 30' body scan + 10' sitting.
3rd SESSION	Posture. Being versus doing. Managing thoughts and emotions during practice. Practice: yoga (standing meditation). Informal practice: washing the dishes, 3'. Task: alternating body scan or yoga + 15' sitting.	Unconditional love (metta). Compassion. Practice: conscious movements. Metta for oneself and for others. Informal practice: washing the dishes, 3', thank you letter. Task: alternating body scan or yoga + 15' sitting.
4th SESSION	Attention. Primary and secondary suffering. Practice: yoga (sitting meditation). Practice: making the bed, 3'. Task: alternating body scan or yoga + 15' sitting.	Positive psychology. Values. Practice: walking meditation. The funeral. Informal practice: the first bite, 3', 3 positive things. Course feedback. Incorporating mindfulness into daily life. Course evaluation and satisfaction questionnaire. Repeating the questionnaires.
5th SESSION	Time management. Problem resolution. Practice: walking meditation. Practice: the first bite. Task: yoga alternating with 30' sitting. Start walking meditation.	
6th SESSION	Unconditional love (metta). Compassion. Practice: Metta for oneself and for others. Informal practice: thank you letter. Task: yoga alternating with 30' sitting + walking meditation.	
7th SESSION	Positive psychology. Values. Practice: a compassionate gesture, safe place. The funeral. Informal practice: 3 positive things, 3'. Task: 45' method of choice.	
8th SESSION	Course feedback. Practice: review course practices. Incorporating mindfulness into daily life. Course evaluation and satisfaction questionnaire.	
POST-INTERVENTION MEASUREMENT	Repeat the questionnaires.	Repeat the questionnaires.
REEVALUATION (3 MONTHS)	Repeat the questionnaires.	Repeat the questionnaires.

mindfulness, and their opposites: self-judgement, isolation, and over-identification. Higher total values indicate more self-compassion.

- Work stress: An ordinal scale ranging from 0 (no stress level) to 10 (maximum stress level) and the Perceived Stress Questionnaire (PSQ) will be used. This questionnaire, validated by Sanz-Carrillo et al. [36], evaluates six factors: Tension-Instability-Fatigue; Social Acceptance of Conflicts;

Energy and Fun; Overload; Self-fulfilment Satisfaction; Fear and Anxiety. The instrument consists of 30 items that participants answer according to the frequency with which each occurs in their lives, from 1 “almost never” to 4 “almost always”. The questionnaire is evaluated for two different periods (one recently and one in the last two years or in the last year). It classifies the subject at low, medium, or high risk.

- Burnout: the Maslach Burnout Inventory-General Survey (MBI-GS) questionnaire, with 22 items (range: 0–140 points) and three subscales: emotional exhaustion (EE), with nine items and a maximum score of 54 points; depersonalisation (DP), with five items and a maximum score of 30 points; and personal fulfilment (PF), with eight items and a maximum score of 48 points [37]. This instrument, translated into Spanish, it has been validated by Gil Monte [38].
- Empathy: the Jefferson Scale of Physician Empathy (JSPE) [39, 40]. This instrument is a multidimensional scale including 3 areas: taking perspective, compassionate attention, and “ability to put oneself in the patient’s shoes”. This scale consists of 20 items, which are determined using a Likert scale of 7 points.

Secondary outcome variables

- Anxiety or depression disorders: the Goldberg Anxiety and Depression Scale (GADS), validated for the Spanish population [41]. This instrument has 2 subscales, each with nine questions: an anxiety subscale (questions 1–9) and a depression subscale (questions 10–18). The first 4 questions of each subscale, questions 1–4 and questions 10–13, respectively, determine whether participants should try to answer the other questions.
- Self-perceived health status will be determined by a closed question, based on the one used in the Spanish National Health Survey [42]. Likewise, the participant’s feelings of loneliness, social and work isolation, and happiness, before and after the interventions, will be assessed by two closed questions with an ordinal qualitative scale.

Other measures/covariates

To control for potential predictor or confounding effects, the following measures will be assessed: age, sex, profession (physician or nurse), type of professional (MIR, EIR, or tutor), year of residency for residents, time as a tutor, time working in AP for tutors, and teaching unit (TU).

Sample size

To calculate the sample size, we have drawn on a previous study [25], using as an outcome variable the mean FFMQ score [31]; accepting an alpha risk of 0.05 and a beta risk of 0.2, in a bilateral contrast, 38 subjects are required in each group to detect a difference ≥ 15 points in the FFMQ scale between both experimental groups (EG4 and EG8) and the CG. It is assumed that the common standard deviation is 20. A loss or withdrawal rate of 25% has been estimated [43]. Because this is a cluster randomisation study, we have considered the design

effect. The design effect multiplies the sample size by a factor ranging from 1.5 to 3 to achieve the same power, depending on the relationship between intra- and inter-group variance [44]. Estimates of the intra-cluster correlation coefficient (ICC) in randomised clinical trials in AP are generally < 0.05 [45]. This ICC, for a cluster size of 15, results in a design effect corresponding to a factor of 1.7. Assuming this value, the final study sample size would be at least 130 subjects. One hundred and thirty-two (132) professionals will be included, 44 in each comparison group, 22 for each teaching unit.

Recruitment

The study will be disseminated through the existing communication channels of the participating TU (mailing to the email addresses of the existing lists, blog/web, EIR websites, teaching sessions, or face-to-face meetings). After the aim of the study is explained, the professionals will be invited to take part in the study and must fill out both the commitment and informed consent forms.

Assignment of interventions and randomisation

Cluster randomisation will be used, and each TU will be a cluster. Subject selection will be performed in each cluster and stratified by type of professional (66 tutors vs. 66 residents) between the CG (2 TU) and the two intervention groups (4 TU).

Data collection and data management

The measurements will be taken at three time points: 1) Pre-intervention (initial or baseline; one week before the interventions begin, participants from all groups will be invited to a face-to-face meeting); 2) Post-intervention (final, one month for EG4 and two months for EG8, and simultaneously with the latter for CG participants); and 3) Three months after the interventions, at which time participants of EG4 and EG8 will be reconvened for a face-to-face session.

To measure adherence to the training programs, the sessions attended by the participants will be continuously monitored and followed up, and students must write in a personal notebook or journal whether they did the exercises at home and show it to the instructor in each session for supervision.

The data obtained (data collection notebook and questionnaires) will be collected and sent to the coordinating headquarters for further processing, debugging, and statistical analysis. Double data entry will be used for all questionnaires to keep the rate of data errors very low.

Statistical methods

The descriptive statistics of baseline characteristics of study participants and of questionnaire results—both before and after the intervention—will include means,

standard deviations and ranges, medians and interquartile ranges, or frequencies and percentages, according to the variables. The fit of quantitative variables to the normal distribution will be checked by the Kolmogorov-Smirnov test. Prior to testing the effectiveness of the intervention, appropriate statistical tests will be used to examine possible baseline differences between groups (age, sex, time worked, profession, year of residency, previous mindfulness training). A per-protocol analysis will be performed in which all subjects who have completed at least 6 of the 8 sessions in EG8, or 3 of the 4 sessions in EG4, will be considered. All signalment analyses will be intention-to-treat in order to control for non-random dropout effects. Patterns of missing values will be inspected and, if applicable, replaced using appropriate statistical methods.

To compare pre- and post-intervention results, a bivariate analysis will be performed, using Student's t-test or the Wilcoxon test to compare related samples. Pre-post differences in the results of the questionnaires between the groups will be compared using ANOVA for repeated measures. Finally, a multivariate analysis will verify the effect of the interventions, adjusting for presumably predictive and/or confounding variables. To accomplish this, a multilevel linear regression will be used. The level of statistical significance will be set at $p < 0.05$ for all statistics. The analyses will be performed with SPSS version 17.0 and MLwiN version 3.00 software.

Quality controls, monitoring and follow-up

The educational programmes will be sent to the Spanish Health Quality Agencies for accreditation. Some sessions of the intervention groups will be randomly audio recorded, and external experts (JGC, MNG) will assess that the intervention reliably follows the protocol and includes no other interventions. To assess the lasting effect of the intervention programs, a follow-up will be conducted through a third measurement three months after the end of the programmes. At that time, participants must respond to a questionnaire to check the extent to which they have continued to perform the mindfulness practices learned. They will also fill out the FFMQ, SCS, PSC, MBI and JSPE and will be asked again about their feelings of happiness, loneliness, and social and work isolation.

Ethical considerations

Explicit authorisation will be requested from the management of the participating TU.

This research complies with the regulatory framework of reference to develop research projects in Spain (Law 41/2002 of November 14, regulating patient autonomy, and rights and obligations regarding information and documentation). Under Law 14/2007 of Biomedical Research, on the protection of personal data and guarantee

of confidentiality, the data will not be used for purposes other than those expressed in the informed consent form. The confidentiality of the information will be preserved by following the necessary regulations; data recording will respect the precepts established in the current legislation on the protection of personal data. The study will conform to the standards of good clinical practice (art. 34 RD 223/2004; European Community Directive 2001/20/EC) and the protection of personal data (Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data-GDPR).

Dissemination policy

In the dissemination of the study, the publication rules of the Consolidated Standards of Reporting Trials (CONSORT) Statement for the reporting of cluster randomised trials will be followed (<http://www.bmj.com/content/345/bmj.e5661.long>).

Discussion

This clinical trial aims to test the effectiveness of an abbreviated intervention against a standard programme and control in reducing stress and burnout in AP health professionals with teaching functions or in the post-graduate training period. Environmental evidence allows us to show the correlation between practices to cultivate mindfulness and self-compassion and the increase in resilience and psychological well-being of AP professionals [14, 46, 47], but the effect of these educational programmes has been little studied in those health professionals who combine their care activities with teaching, which usually entails more responsibility and work stress. Montero-Marín et al. [48] have shown that not all manifestations of burnout follow the typical pattern, as some subtypes hide within a flurry of activity, simulating a situation that may seem contrary to burnout. This situation may particularly occur in professionals with additional dedication to care activities, such as those teachers who perform voluntary and altruistic tutoring in our country. This characteristic makes our trial especially relevant because it will detect situations of hidden stress in an overloaded collective.

The expected results of this trial will be immediately applicable because, if our hypothesis is confirmed, an important group of professionals—tutors and residents—who form an essential collective of the Spanish SNS will benefit. In fact, incorporating the new evidence provided by this trial into the public health service will result in a better working environment, improving the quality of care and medical practice in routine patient care. National Health Services such as the SNS—subject to a significant care overload, even more pronounced in

AP—require effective, shorter, and less costly interventions to improve accessibility, acceptability, and adherence. Mindfulness programmes can be offered if we can achieve profitable and realistic formats, adjusted to the characteristics and conditions existing in different target populations [15].

Strengths and limitations

With the cluster randomisation method, we expect to minimise the Hawthorne effect (contamination bias) in the intervention study. Withdrawals or losses may occur, which would cause a selection bias because the characteristics of the non-responders may differ from those of the responders. Due to the experience of the instructors in charge, adherence is likely to be very high at the beginning of the training program, but the loss rate thereafter could reach 20%. To lessen this problem, the sample size was increased by 25% [44]. In addition, to minimise and control this effect, from the statistical point of view, an intention-to-treat analysis will be performed in addition to the per-protocol analysis.

The questionnaires to be used are validated for the Spanish population and will be filled out anonymously (an identification code will be assigned to match those completed before and after the intervention), so we expect no problems of validity and reliability leading to important information biases.

Although the CG does not perform any type of intervention, this study does not ensure that it will remain inactive throughout the fieldwork period, which may minimise the differences in the expected results when comparing this group with the intervention groups.

To verify that the effect of the intervention programmes lasts over time, a measurement will be taken three months after their application. Although the ideal would be farther in the future, this distance is not feasible given that some participants will conclude their training period soon after completing the study, making it difficult to recruit them afterwards.

Our aim is to incorporate and extend the practice of mindfulness to the work, teaching, and care activities of health professionals—counting on the evidence to be found in this trial and contribute to increasing and complementing the countless existing tests that have been applied in other work sectors, both public and private.

Additional file

Additional file 1: Questionnaires in Spanish and in English. The questionnaires to be used in the study, in Spanish and in English, are presented. (DOC 131 kb)

Abbreviations

AP: Primary Care; CG: Control Group; EG4: Experimental Group, 4 weeks; EG8: Experimental Group, 8 weeks; EIR: Internal Nurse Resident; ICC: Intra-

cluster correlation coefficient; MBSR: Mindfulness-Based Stress Reduction; MINDUDD: Spanish acronym of the words Mindfulness (MIND) and Teaching Units (JUDD); MIR: Internal Medical Resident; MSC: Mindful Self-Compassion program; SNS: National Health System; TU: Teaching Unit

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Availability of data and materials

Not applicable.

Authors’ contributions

LAP and ARV conceived the study. JCV, NLV, ARV, FJV, RMB, RAV, JGC, and RE participated in the design of the study, and NHS, FJV, ACC, LAR, MNG, and EMP contributed to the implementation. AFS, CMV, IAL, TGN, and ASS helped to disseminate the project at scientific events. LAP and CB provided methodological and statistical experience in the design of the clinical trial. All the authors contributed to the refinement of the study protocol and approved the final manuscript.

Ethics approval and consent to participate

The project has been approved by the Ethics and Clinical Research Committee of the Reina Sofia Hospital in Córdoba (ref. 3845). The written informed consent of the participants will be requested.

Consent for publication

Not applicable

Competing interests

The authors declare that they have no competing interests.

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Article

Comparison of the Effectiveness of an Abbreviated Program versus a Standard Program in Mindfulness, Self-Compassion and Self-Perceived Empathy in Tutors and Resident Intern Specialists of Family and Community Medicine and Nursing in Spain

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Abstract: Health professionals are among the most vulnerable to work stress and emotional exhaustion problems. These health professionals include tutors and resident intern specialists, due to the growing demand for the former and the high work overload of the latter. Mindfulness training programs can support these professionals during times of crisis, such as the current global pandemic caused by the coronavirus-19 disease. The objective of this study was to compare the effectiveness of an abbreviated Mindfulness-Based Stress Reduction (MBSR) and Mindful Self-Compassion (MSC) training program in relation to a standard training program on the levels of mindfulness, self-compassion, and self-perceived empathy in tutors and resident intern specialists of Family and Community Medicine and Nursing. A total of 112 professionals attached to six Spanish National Health System teaching units (TUs) participated in this randomized and controlled clinical trial. Experimental Group (GE) participants were included in the standard or abbreviated MBSR programs. The Five Facet Mindfulness Questionnaire (FFMQ), the Self-Compassion Scale short form (SCS-SF), and the Jefferson Scale of Physician Empathy (JSPE) were administered three times during the study: before, immediately after, and 3 months after the intervention. Adjusted covariance analysis (ANCOVA), using pretest scores as the covariate, showed a significant increase in mindfulness ($F_{(2,91)} = 3.271$; $p = 0.042$; $\eta^2 = 0.067$) and self-compassion ($F_{(2,91)} = 6.046$; $p = 0.003$; $\eta^2 = 0.117$) in

the post-test visit, and in self-compassion ($F_{(2,79)} = 3.880$; $p = 0.025$; $\eta^2 = 0.089$) in the follow-up visit, attributable to the implementation of the standard training program. The standard MBSR and MSC training program improves levels of mindfulness and self-compassion, and promotes long-lasting effects in tutors and resident intern specialists. New studies are needed to demonstrate the effectiveness of abbreviated training programs.

Keywords: mindfulness; self-compassion; empathy; tutors; resident intern specialists; MBSR

1. Introduction

Health professionals are exposed to stressful and emotionally intense situations in the workplace, which makes them more vulnerable to problems of work stress and emotional exhaustion [1,2]. This is particularly the case for the group comprising tutors and resident specialists in internships [3].

Consideration of the correct functioning and effective management of workers and organizational groups is essential to promote good work performance, in addition to improving psychosocial well-being and increasing the quality of work life of employees [4–8]. A wide variety of studies have investigated the effect of different instruments and techniques on the psychological functioning of healthcare professionals, showing positive results in attention, self-compassion, anxiety, emotional exhaustion, stress, and rumination [9–13], but there is no specific action protocol to prevent and treat psychological and emotional symptoms originating in the workplace [10]. In Spain, the implementation of different strategies to deal with this problem has been uneven in recent years [14], focusing mainly on interventions to improve or support individual coping skills [15,16]. In addition, several studies have reported the need to provide interventions to support the mental health of these professionals during the early stages of the global pandemic caused by COVID-19 [17,18].

The regular practice of mindfulness or meditation interventions has been suggested by various authors for this purpose [19,20], and these practices have achieved positive results in coping with stress, burnout, empathy, and satisfaction levels of health professionals [15,16,21,22], in addition to patient outcomes [23]. Although various definitions of mindfulness exist, it can be defined as the quality of awareness that is produced by intentionally focusing on present moment experiences in an accepting and non-judgmental way [24]. Mindfulness is one of the most widely used meditation techniques today, with a high reputation in Western countries [25]. This is a third generation therapy that involves self-regulation of attention to the experience of the present moment [26]. Jon Kabat-Zinn developed the best-known mindfulness program to date at the University of Massachusetts, i.e., the Mindfulness-Based Stress Reduction (MBSR) program [27]. It consists of eight weekly group sessions, lasting 120–150 min, and 45 min of daily practice at home [28–30]. Due to the high degree of commitment and adherence required, the possibility of reducing its duration is being studied to guarantee accessibility and achieve greater viability, while maintaining its effectiveness at all times [31–34].

Although the effectiveness of various mindfulness programs on the stress and burnout levels of healthcare workers has been demonstrated [15,16,19–22], this technique involves being in contact with one’s own painful thoughts and feelings by observing and accepting them as they are [25]; therefore, aspects such as empathy, self-awareness and self-compassion should also be considered when studying the effectiveness of these programs [15].

The majority of previous studies do not consider mindfulness to be a primary outcome, making it difficult to determine whether treatment results were caused by increased mindfulness skills or other factors, such as social support or group cohesion [35,36]. Mindfulness is a process that requires observing, describing, and acting conscientiously, without judging [37]. Healthcare professionals with developed self-awareness or full attention have

a higher level of self-care and greater ability to engage with patients, without experiencing additional stress [38].

Empathy is the general ability of a person to resonate with the emotional states of others, and can lead to compassion or empathetic distress depending on how subjects respond to the suffering of others [39]. Compassionate responses are positive feelings towards the other and involves prosocial behavior, whereas empathetic distress refers to negative feelings associated with avoidance or flight [40,41]. Self-compassion also involves assertively managing one's emotions [41], and makes people adopt a growth mindset and set goals related to learning and personal growth. Training programs exist to help achieve this feeling, such as Mindful Self-Compassion (MSC) [42], which has been shown to reduce the levels of work stress of healthcare professionals, and to improve professional-patient communication, and clinical and psychological parameters of the patient [41].

The effects of mindfulness and self-compassion practice have been widely studied in relation to burnout, but new studies are needed to consider other relevant psychological variables in healthcare workers and to analyze the maintenance of its effects in the medium-to long-term [31,32,38]. Furthermore, despite the existence of scientific evidence supporting the effectiveness of abbreviated MBSR training programs [43], their effectiveness compared to standard training programs among healthcare professionals should be further investigated. In this way, these practices could be included in continuing training curriculum programs. Therefore, the objective of this study was to compare the effectiveness of an abbreviated MBSR and MSC training program in relation to a standard training program on the levels of mindfulness, self-compassion, and self-perceived empathy in tutors and resident intern specialists in Family and Community Medicine and Nursing, attached to six teaching units (TUs) of the Spanish National Health System.

2. Materials and Methods

2.1. Design and Setting

The design of this study corresponds to an open-label, pragmatic, non-inferiority, multicenter, cluster, controlled, and randomized clinical trial with three parallel arms: control group (CG), intervention group 1 (EG1), and intervention group 2 (EG2).

The protocol of this clinical trial was previously published [44] and registered in ClinicalTrials.gov website, dependent on the U.S. National Library of Medicine, with reference number NCT03629457.

The results reported in this manuscript refer to the levels of mindfulness, self-compassion, and self-perceived empathy of tutors and resident intern specialist, as the main variables analyzed in this study.

2.2. Study Participants and Recruitment

The study population consisted of all tutors ($n = 297$) or resident intern specialists in Family and Community Medicine or Nursing ($n = 595$), who were working in one of the Health Centers attached to the following 6 TUs of the Spanish National Health System: Cordoba ($n = 256$), Almeria ($n = 147$), Jaen ($n = 185$), Burgos ($n = 64$), Ponferrada ($n = 63$), and Zaragoza Sector I ($n = 87$). Exclusion criteria considered were having previously attended to a mindfulness training course or workshop with a minimum duration of 4 weeks, practicing this technique regularly and actively, being in prolonged sick leave during fieldwork, or suffering from any mental disorder that hindered the understanding and subsequent development of interventions.

Through the existing communication channels in each of the 6 TUs, all possible participants in the study were contacted. A first face-to-face meeting was held in which the objective and methodology of the research, and its voluntary nature, were explained to them. In addition, they were invited to participate in the study, and required to sign a commitment form and give their written informed consent in case of acceptance.

2.3. Sample Size

The sample size was estimated based on the potential modification of the main variable, i.e., the score of the Five Facet Mindfulness Questionnaire (FFMQ). To detect a minimum difference of ≥ 15 points in the FFMQ between CG and EGs, 114 participants (38 per group) was required, assuming an alpha risk of 0.05, a beta risk of 0.20, in two-side contrast, and a standard deviation (SD) of ± 20 points. A predicted drop-out rate of 25% during follow-up phase was assumed [45]. This estimate took into account the results obtained in a similar previous study [20]. In addition, factors such as the type of study or its design were also taken into account when the sample size was calculated. In this calculation, a multiplying factor was applied that allowed the same power to be achieved between the intergroup and intragroup variance [46]. Based on this, and taking into account an intragroup correlation coefficient < 0.05 , which is the most common coefficient value in clinical trials developed in Primary Care [47], and an effect of the design type of 1.7, it was concluded that the sample should be made up of 132 professionals, 44 in each comparison group and 22 for each TU.

2.4. Procedure and Randomisation

One week before the start of the sessions in the EGs, all participants attended a first initial or baseline evaluation visit (pre-test), in which the study variables were measured. Subsequently, 4 weeks after the initial evaluation visit for EG1 participants and 8 weeks for those of EG2 and CG, the same variables were assessed again at the final evaluation visit (post-test). Furthermore, EG1 and EG2 participants had to attend to a third evaluation visit (follow-up), 3 months after the end of the intervention program, to assess the maintenance of its effect in the medium-long term.

The process of randomization of healthcare professionals in the different study groups was carried out by clusters. Each of the 6 TUs analyzed was considered as a different and independent cluster, so that its participants were assigned to CG (2 TU), EG1 (2 TU), or EG2 (2 TU). In addition, the participants from each TU were also stratified according to the type of professional (66 tutors versus 66 resident intern specialists) (Figure 1).

During the development of the study, it was not possible to blind all participants due to the characteristics of the interventions. However, in order to minimize cross-contamination between groups, both the researcher who conducted the evaluation visits and the one who carried out the statistical analysis of the data remained blinded to the group to which the participants belonged. In turn, all participants received clear instructions to not reveal the group to which their TUs had been randomly assigned to blinded researchers during evaluation visits.

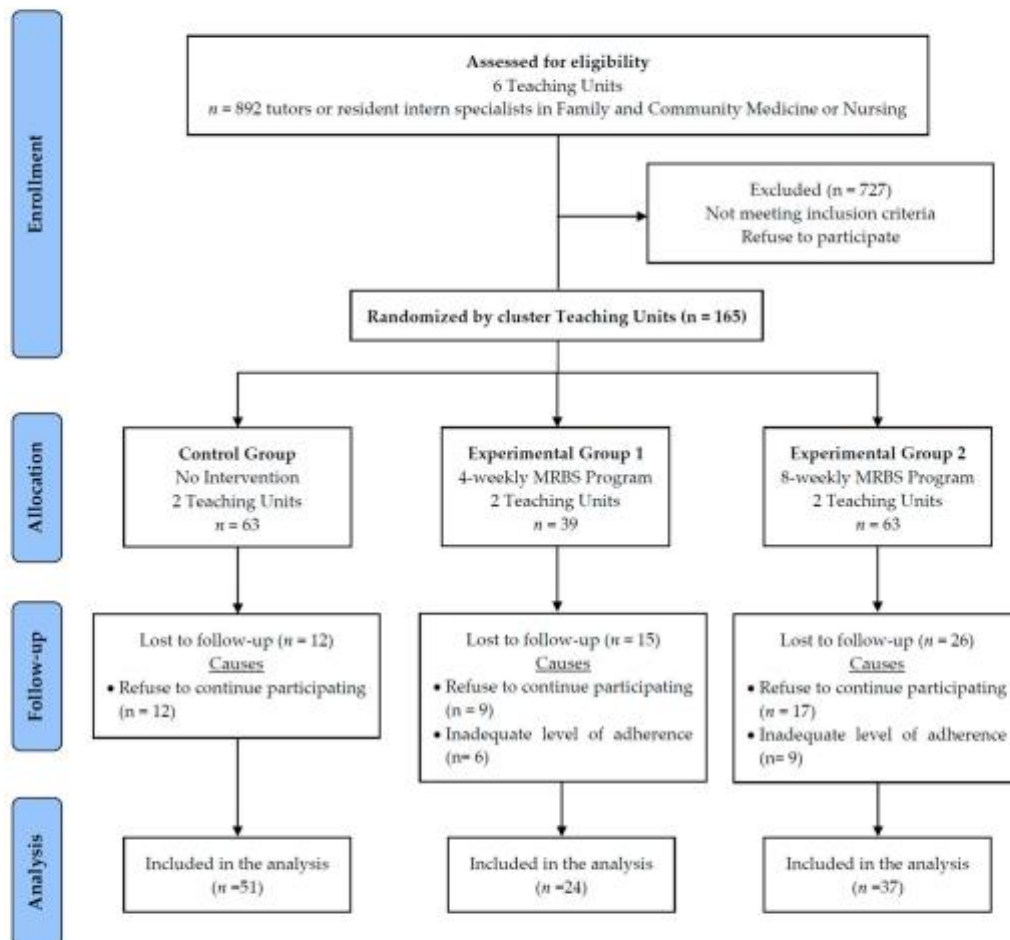


Figure 1. Flow chart of participants through the study.

2.5. Intervention

All EG1 and EG2 participants were included in an MBSR training program [31,32], complemented by Mindful Self Compassion [48–50] practices. The sessions were adapted to the characteristics of each group, differing only in the duration and time dedicated to the different tasks by the participants [31,32]. In EG1, participants received 4 sessions per week, 2.5 h long, which were complemented by the daily practice of 15 min at home (abbreviated program); while at EG2, participants received 8 sessions per week, lasting 2.5 h, along with the practice of 30 min a day at home (standard program). At all times, the practical application of group sessions in the personal and/or professional fields of the participants was looked for. To this end, moments of silence were alternated with other moments of collective exploration on the best strategies to address complex and difficult situations of their development. Some of the aspects covered were the knowledge of mindfulness, the perception of reality, stress and emotional management, the use of conscious communication, resilience, self-care or time management, and the integration of mindfulness into daily life. The activities developed in each of the sessions were detailed previously in the study protocol [44]. To avoid any variability associated with the therapist, all sessions were taught by the same accredited instructors, following standardized and uniform methodological criteria.

The participants included in the CG did not receive any type of intervention. In the initial evaluation visit, they had to pledge not to participate in any theoretical–practical session of mindfulness or meditation during the period of development of the study. Once the fieldwork was completed, they were offered the opportunity to participate in an abbreviated training program.

2.6. Main Outcomes

Mindfulness, self-compassion, and self-perceived empathy were the main outcomes of the study, which were assessed in the different evaluation visits (initial, final, follow-up).

Mindfulness was measured using the FFMQ, validated in the Spanish population by Cebolla et al. [51]. This self-report consists of 39 items, distributed in 5 subscales: observing, describing, acting with awareness, non-judging of inner experiences, and non-reactivity to inner experience. For example, one of the items to assess is: “When I’m walking, I deliberately notice the sensations of my body moving”. Each participant must indicate their agree or disagreement with the content of the statement using a five-point Likert scale, where 1 corresponds to “never or very rarely true”, and 5 to “very often or always true”. The total score ranges from 39 to 195 points, with higher scores indicating more mindfulness [52–54]. This scale has an adequate level of internal consistency, with a Cronbach alpha ranging from 0.75 to 0.92 ([51]; a score of 0.84 was obtained in this study).

The Self-Compassion Scale short form (SCS-SF) was used to assess how the subject usually acts towards themselves in difficult times [55]. This questionnaire, validated by García-Campayo et al. [56] in the Spanish population, consists of 12 items, distributed in 6 subscales: self-friendship, common humanity, mindfulness, self-judgment, isolation and over identification. For example, one of the items to assess is: “When I fail at something important to me I become consumed by feelings of inadequacy”. Each item is valued using a six-point Likert scale, where 0 corresponds to “almost never” and 5 to “almost always”. The total score ranges from 0 to 60 points, with higher scores indicating more self-compassion [55,56]. This scale has an adequate level of internal consistency, with a Cronbach alpha ranging from 0.71 to 0.77 [56]; a score of 0.88 was obtained in this study.

Self-perceived empathy was assessed by the Jefferson Scale of Physician Empathy (JSPE), which was translated, adapted, and validated in the Spanish population by Blanco et al. [57,58]. Through its 20 items and 7 possible responses, this scale analyzes three dimensions of empathy: taking perspective or cognitive empathy, compassionate attention or emotional empathy, and “ability to put oneself in the patient’s shoes”. One example of the items assessed in this scale is: “My understanding of how my patients and their families feel is not a relevant factor for medical treatment”. The total score ranges from 20 to 140 points, with higher values indicating more empathy. This scale has an adequate level of internal consistency, with a Cronbach alpha of 0.89 [57,58]; a score of 0.70 was obtained in this study.

Participants’ adherence to the training programs was monitored by checking attendance at the different group sessions and by the personal self-registration of the practices carried out at home. An adequate level of adherence was considered when the participant had completed at least 3 of the 4 face-to-face sessions in EG1, or 6 of the 8 in EG2. Only data from participants with an adequate level of adherence were included in the subsequent statistical analysis.

To control the predictive or confusion effect, the following socio-demographic information was collected from the participants in the initial evaluation visit: age, sex (male or female), professional category (physician or nurse), type of professional (tutor or resident intern specialist), work center (hospital or health center), time working in the Spanish National Health System or TU.

2.7. Data Collection Procedure, Data Management and Monitoring

In each evaluation and follow-up visit, the data was collected by a researcher, who had been previously trained for this task. This person did not participate in the randomization

process or in the subsequent statistical analysis of the data. Each participant was identified through a unique alphanumeric code to ensure the data referred to the same person in the different evaluation visits. A database was created for this purpose, which could only be accessed by the researchers responsible for statistical analysis. To minimize the rate of data errors in the recording, a double entry procedure was used in each of the questionnaires. The principal investigator of the study was responsible for deleting the data once the study was completed.

2.8. Ethical Considerations

The study was approved by the Ethics and Clinical Research Committee of the Reina Sofia University Hospital in Córdoba (Spain), with reference number 3845. According to the Helsinki Declaration, all participants were informed of the objectives of the project, and its potential risks and benefits of the evaluations to be conducted. Each subject was required to provide the signed informed consent for his/her inclusion in the study. The data obtained were not used for purposes other than those expressed in the informed consent. The confidentiality of the participants' data was guaranteed at all times in accordance with the provisions of the Organic Law 3/2018, of 5 December, on Personal Data Protection and Guarantee of Digital Rights, the Law 14/2007, of 3 July, on Biomedical Research, and the EU Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 on the General Data Protection of Natural Persons with regard to the Processing of Personal Data and on the Free Movement of such Data.

2.9. Statistical Analyses

To minimize and control the effects of non-random drop-outs and losses, an intent-to-treat analysis was performed. In the descriptive analysis of the sample, mean and standard deviation (SD) were used in the case of quantitative variables, or absolute frequencies and percentages for categorical variables. Compliance with the normality criteria in quantitative variables was verified using the Kolmogorov–Smirnov test. In those cases in which these criteria were not respected, median and interquartile range (IQR) were calculated. To assess the comparability of the groups in the initial evaluation visit in terms of age, gender, professional category, type of professional, work center, or time working in the Spanish National Health System, the chi-square test and the Student's *t*-test for independent samples were used, or their corresponding non-parametric tests. A one-way variance analysis (ANOVA) was used to analyze the effect of the intervention on mindfulness, self-compassion, and self-perceived empathy in CG, EG1 and EG2 participants. A repeated measures ANOVA was used to compare differences in outcomes in mindfulness, self-compassion, and self-perceived empathy between groups before and after the interventions. The Bonferroni post hoc test was used to determine between which groups there were differences. The effect size of the interventions was estimated using the squared eta coefficient (η^2), interpreted according to the following criteria: if $0 \leq \eta^2 < 0.05$, no effect; if $0.05 \leq \eta^2 < 0.26$, the effect was minimal; if $0.26 \leq \eta^2 < 0.64$, the effect was moderate; and if $\eta^2 \geq 0.64$, the effect was strong [59]. Finally, to eliminate from the dependent variables (post-test and follow-up scores) the effect attributable to variables not included in the design and, therefore, not subjected to experimental control, a covariance analysis (ANCOVA) was performed, using the pre-test scores of the dependent variables as the covariate and the intervention groups as a fixed factor. Statistical analyses were performed with SPSS version 25.0 (IBM SPSS Inc., Chicago, IL, USA) and MLwiN version 3.00 software (Centre for Multilevel Modelling, University of Bristol: Bristol, UK, 2019). Statistical significance was considered if $p < 0.05$.

3. Results

3.1. Baseline Characteristics of the Study Participants

The study sample consisted of 165 subjects, of which 63 were assigned to CG, 39 to EG1, and 63 to EG2. There were 53 losses in the follow-up phase, 38 because the subject refused

to continue participating in the study and 15 due to an inadequate level of adherence to the training program. Therefore, 112 participants completed the study and were included in the analysis, with 51 in the CG, 24 in the EG1, and 37 in the EG2. (Figure 1).

Table 1 summarizes the baseline socio-demographic characteristics of participants according to the study group. Women represented 76.79% of the participants ($n = 86$), with a mean age of 40.61 years ($SD \pm 12.61$). Most of the participants worked in Primary Care ($n = 95$; 84.82%), with the physician being the most represented professional category ($n = 95$; 84.82%). The mean work experience was 12.88 years ($SD \pm 13.15$). The sample was distributed equally to tutors and resident intern specialist (50 versus 62). Statistically significant differences were observed between the three groups in age, professional type, and work experience.

Table 1. Baseline characteristics of participants.

Variables	Total ($n = 112$)	CG ($n = 51$)	EG1 ($n = 24$)	EG2 ($n = 37$)	<i>p</i> -Value
Age (years)	41.61 \pm 12.61	40.34 \pm 13.22	47.66 \pm 13.67	35.73 \pm 12.04	<0.001
Sex					
Male	26 (23.21)	11 (21.57)	6 (25.00)	9 (24.32)	0.978
Female	86 (76.79)	40 (78.43)	18 (75.00)	28 (75.68)	
Occupation					
Physician	95 (84.82)	41 (80.39)	20 (83.33)	34 (91.89)	0.165
Nurse	17 (15.18)	10 (19.61)	4 (16.67)	3 (8.11)	
Professional type					
Tutor	50 (44.64)	24 (47.06)	15 (62.50)	11 (29.73)	<0.001
Resident	62 (55.36)	27 (52.94)	9 (37.50)	26 (70.27)	
Work-place					
Health Center	95 (84.82)	40 (78.43)	22 (91.67)	33 (89.19)	0.217
Hospital	17 (15.18)	11 (21.57)	2 (8.33)	4 (10.81)	
Work experiences (years)	12.88 \pm 13.15	13.13 \pm 12.95	19.49 \pm 13.91	8.91 \pm 11.06	<0.001

Values are expressed as mean \pm standard deviation, median-interquartile range or frequencies (percentages). Abbreviations: CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks; SNS: National Health System.

3.2. Mindfulness, Self-Compassion and Self-Perceived Empathy

Table 2 summarizes the differences between CG, EG1, and EG2 in levels of mindfulness, self-compassion, and self-perceived empathy. No statistically significant differences were observed between the groups, so all participating TUs were equivalent and started from the same situation. In the post-test and follow-up visits, statistically significant differences were observed in the mindfulness and self-compassion scores of CG participants with respect to those of EG2, with this latter group showing higher levels. In all cases, the effect size was significant and weak ($\eta^2 \leq 0.076$). No statistically significant differences were obtained in levels of self-perceived empathy between the study groups in any of the evaluations.

When comparing the FFMQ, SCS, and JSPE scores obtained by each of the groups analyzed at the three time points studied, no statistically significant differences were found between CG participants. Subjects who participated in the abbreviated training program demonstrated a significant increase in the JSPE score in the follow-up visit compared to the pre-test visit, with a weak effect size ($\eta^2 = 0.223$). Those participants who were part of the standard training program obtained higher levels of mindfulness and self-compassion in the post-test and follow-up visits, with respect to the pre-test visit; however, unlike in the abbreviated training program group, no statistically significant differences in self-perceived empathy were observed. (Table 3).

Table 2. Comparison of FFQM, SCS, and JSPE according to the type of group using one-way ANOVA.

Evaluation	Variable	CG		EG1		EG2		F	p-Value	η^2
		M	SD	M	SD	M	SD			
Pre-test	FFMQ	118.17	13.32	117.71	16.76	119.26	15.11	0.153	0.858	0.002
	SCS	2.88	0.73	2.97	0.88	2.82	0.93	0.381	0.683	0.005
	JSPE	124.14	8.53	120.12	15.98	122.44	12.72	1.281	0.281	0.016
Post-test	FFMQ	119.28 *	17.79	124.07	22.60	131.65 *	18.03	5.004	0.008	0.076
	SCS	2.98 *	0.89	3.15	0.98	3.47 *	0.74	3.789	0.025	0.058
	JSPE	124.35	8.40	120.85	15.74	126.85	9.06	2.634	0.076	0.041
Follow-up	FFMQ	121.03 *	18.29	125.04	22.62	131.97 *	18.22	3.461	0.035	0.060
	SCS	2.96 *	0.90	3.21	1.04	3.46 *	0.78	3.289	0.041	0.057
	JSPE	123.96	8.06	125.50	12.39	124.35	18.23	0.113	0.893	0.002

* p-value < 0.05 in post hoc analysis (Bonferroni), between CG and EG2. Abbreviations: CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks; M: mean; SD: standard deviation; FFMQ: Five Facet Mindfulness Questionnaire; SCS: Self-Compassion Scale; JSPE: Scale of Physician Empathy.

Table 3. Intra-group comparisons of FFQM, SCS and JSPE, using ANOVA for repeated measures.

Group	Variable	Pre-Test		Post-Test		Follow-Up		MS	F	p-Value	η^2
		M	SD	M	SD	M	SD				
CG	FFMQ	118.17	13.32	119.28	17.79	121.03	18.29	205.283	2.009	0.143	0.059
	SCS	2.88	0.73	2.98	0.89	2.96	0.90	0.127	0.971	0.384	0.029
	JSPE	124.14	8.53	124.35	8.40	123.96	8.06	23.303	0.578	0.564	0.018
EG1	FFMQ	117.71	16.76	124.07	22.60	125.04	22.62	242.902	2.736	0.080	0.146
	SCS	2.97	0.88	3.15	0.98	3.21	1.04	0.163	1.160	0.326	0.068
	JSPE	120.12 *	15.98	120.85	15.74	125.50 *	12.39	240.137	4.584	0.018	0.223
EG2	FFMQ	119.26 * [§]	15.11	131.65 [§]	18.03	131.97 *	18.22	681.722	8.473	0.001	0.269
	SCS	2.82 * [§]	0.93	3.47 [§]	0.74	3.46 *	0.78	1.483	9.356	<0.001	0.289
	JSPE	122.44	12.72	126.85	9.06	124.35	18.23	245.847	1.596	0.214	0.065

[§] p-value < 0.05 in post hoc analysis (Bonferroni), between pre-test and post-test. * p-value < 0.05 in post hoc analysis (Bonferroni), between pre-test and follow-up. Abbreviations: M: mean; SD: standard deviation; MS: mean square; CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks; FFMQ: Five Facet Mindfulness Questionnaire; SCS: Self-Compassion Scale; JSPE: Scale of Physician Empathy.

In the following line graphs, variables with statistically significant differences between the scores of the different groups in the three temporal points are represented (Figure 2).

ANCOVA showed statistically significant differences between CG and EGs in the mindfulness and self-compassion in the post-test visit, confirming the results observed in the previous intergroup comparisons (Table 4). Therefore, these differences, mainly in EG2, could be attributed to the performed intervention.

In the same way, the significant differences found in the self-compassion between the CG and the EGs in the follow-up visit could be attributed to the intervention carried out, based on the results obtained from ANCOVA (Table 5).

Table 4. Cont.

Variable	Source	Type III Sum of Square	df	MS	F	p-Value	η^2
JSPE	JSPE pre-test	3400.18	1	3400.18	39.316	0.001	0.302
	CG/EG1/EG2	328.79	2	164.39	1.901	0.155	0.040
	Error	7870.04	91	86.48			

Abbreviations: df: degrees of freedom; M: mean; SD: standard deviation; MS: mean square; CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks; FFMQ: Five Facet Mindfulness Questionnaire; SCS: Self-Compassion Scale; JSPE: Scale of Physician Empathy.

Table 5. Comparison between groups in follow-up scores, controlling pre-test scores, using ANCOVA.

Variable	Source	Type III Sum of Square	df	MS	F	p-Value	η^2
FFMQ	FFMQ pre-test	13,867.36	1	13,867.36	66.304	<0.001	0.456
	CG/EG1/EG2	687.25	2	343.63	1.643	0.200	0.040
	Error	16,522.68	79	209.15			
SCS	SCS pre-test	37.15	1	37.15	114.242	<0.001	0.591
	CG/EG1/EG2	2.52	2	1.26	3.880	0.025	0.089
	Error	25.69	79	0.32			
JSPE	JSPE pre-test	3259.28	1	3259.29	20.553	<0.001	0.206
	CG/EG1/EG2	732.76	2	366.38	2.310	0.106	0.055
	Error	12,527.60	79	158.58			

Abbreviations: df: degrees of freedom; M: mean; SD: standard deviation; MS: mean square; CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks; FFMQ: Five Facet Mindfulness Questionnaire; SCS: Self-Compassion Scale; JSPE: Scale of Physician Empathy.

4. Discussion

The main findings of this study showed that there was no significant improvement in mindfulness, self-compassion, and self-perceived empathy in the tutors and resident intern specialists who received the abbreviated mindfulness training program. The participants of the standard training program improved their levels of mindfulness and self-compassion, effects that were maintained over time; however, no significant impacts were observed on levels of self-perceived empathy.

Structured and regular mindfulness or meditation trainings have been shown to improve emotional regulation, and reduce anxiety, depression, and post-traumatic stress disorder [60–62], which are symptoms associated with COVID-19, especially in health professionals [63]. In times of crisis such as the current global pandemic, these techniques have been adapted using different apps and online e-Health and Telehealth, although new studies are needed to demonstrate their effectiveness [64,65].

Previous research has shown that mindfulness training programs such as MBSR significantly increase self-compassion, which is essential to reduce the stress levels experienced by healthcare professionals [43,66–68]. The importance of implementing training programs that address these two aspects is increasingly evident; however, most published studies focus on mindfulness or self-compassion independently [69,70].

The combination of mindfulness programs and empirical support training to cultivate self-care skills improves participants' self-compassion, full attention, and interpersonal conflict [71–73]. A study by Keng et al., whose objective was to examine the independent role of mindfulness and self-compassion as potential mediators of the effects of an MBRS program on various processes and behaviors related to the regulation of emotions, showed that self-compassion training reduced cognitive trends of mis-adaptive coping and increased willingness to accept and experience new emotions [67].

In line with the above, Shapiro et al. designed an intervention based on the conventional MBSR training program combined with guided compassion meditation, and

observed a significant increase in self-compassion in EG compared to CG (22.0% versus 3.0%). These results are consistent with those obtained in the present study, in which participants who received the standard MBSR and MSC training program reported significantly higher levels of self-compassion than CG professionals [66].

Krasner et al. assessed the effect of a mindfulness and self-compassion training program on the exhaustion, empathy, and mood of Primary Care physicians. The results of this study demonstrated a significant increase in mindfulness skills and orientation, which was correlated with lasting improvements in exhaustion, mood disorders, and empathy [68]. In contrast to these findings, but in line with those obtained by Amutio et al. [74] and Galantino et al. [75], none of the training programs carried out in this study significantly increased the levels of self-perceived empathy of tutors and resident intern specialists. Empathetic ability enables a person to grasp and understand the feelings of others, although mismanagement can lead to compassion or empathetic distress [76]. The levels of self-perceived empathy have not increased in this study, which may be due to the fact that mindfulness training programs promote balanced levels of this aspect, counteracting their over-identification and reducing excessive fixation of negative thoughts [39–41].

This study provides information about the benefits of the standard MBSR and MSC training program in mindfulness, self-compassion, and self-perceived empathy in a group of the tutors and resident intern specialists in Spain. However, these findings should be considered within the context of their limitations. Although TUs were randomly assigned, with the aim of minimizing the risk of contamination, statistically significant differences were observed between the three groups in age, type of professional, and time working in the Spanish National Health System. Due to the epidemiological situation derived from the global pandemic caused by COVID-19, the final number of participants was lower than initially calculated, which may have influenced the results obtained. A selection bias may have occurred in this study because the characteristics of the non-responders might differ from those of the responders. To minimize and control this effect, an intention-to-treat analysis was performed. Although a representative sample of Spanish tutors and resident intern specialists in Family and Community Medicine or Nursing was available, the predominance of women, Primary Care workers, and physicians was able to condition the results obtained. In addition, although participants included in the CG were required to not participate in any theoretical-practical session of mindfulness or meditation, it was not possible to guarantee their inactivity during the fieldwork period, which could minimize the differences in the expected results when comparing this group with EGs. To verify that the effect of the interventions lasted over time, a follow-up assessment was made of the EG participants 3 months after their application. Ideally, this visit would have been delayed in time, which was not possible because some resident intern specialists completed their training period shortly after completing the study. These limitations must be taken into account because they may have influenced the results obtained in the study and reduced its representativeness.

Despite these limitations, this study is pioneering in comparing the effectiveness of a standard MBSR and MSC training program with an abbreviated program. Its main strengths are its longitudinal methodology, which allows determination of causal relationships between the study variables, the use of validated questionnaires for the Spanish population, which guarantees their validity and reduces the probability of information biases, in addition to the evaluation of effects over time.

5. Conclusions

The implementation of abbreviated mindfulness and self-compassion training programs for tutors and resident intern specialists in Family and Community Medicine or Nursing may be encouraging, due to their greater viability and accessibility. Nonetheless, more exhaustive and representative studies are required to support the effectiveness of these programs compared to the standard MBSR and MSC training programs, which

have been shown to improve levels of mindfulness and self-compassion, and promote long-lasting effects in healthcare professionals.

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Article

Effects of Two Mindfulness and Self-Compassion Training Programs on the Anxiety and Depression in Tutors and Resident Intern Specialists of Family and Community Medicine and Nursing in Spain.

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Abstract: In Primary Care, the work environment can lead to high levels of anxiety and depression, producing significant professional and personal alterations. Mindfulness-based stress reduction (MBSR) training programs have been shown to decrease anxiety and depression symptoms. The objective of this study was to compare the effectiveness of a standard MBSR training program in relation to an abbreviation version on reducing anxiety and depression. A total of 112 tutors and resident intern specialists of Family and Community Medicine and Nursing, assigned to six Spanish National Health System teaching units (TUs), participated in this controlled and randomized clinical trial. Experimental group (EG) participants received a MBRS training program (standard or abbreviated). The anxiety and depression levels were assessed by the Goldberg Anxiety and Depression Scale (GADS) in three different times during the study: before, immediately after, and 3 months after the intervention. Adjusted covariance analysis (ANCOVA), using pretest scores as the covariate, showed a significant reduction in anxiety and depression in general ($F_{(2,91)} = 4.488$; $p = 0.014$; $\eta^2 = 0.090$) and depression in particular ($F_{(2,91)} = 6.653$; $p = 0.002$; $\eta^2 = 0.128$ in the post-test visit, maintaining its effects for three months ($F_{(2,79)} = 3.031$; $p = 0.050$; $\eta^2 = 0.071$ - $F_{(2,79)} = 2.874$; $p = 0.049$; $\eta^2 =$

0.068, respectively), attributable to the implementation of the standard training program. No significant impact of the abbreviated training program on anxiety and depression levels was observed. The standard MBSR training program has a positive effect on anxiety and depression, and promotes long-lasting effects in tutors and resident intern specialists. New studies are needed to support the effectiveness of abbreviated training programs.

Keywords: anxiety; depression; mindfulness; MBSR; Primary Care; tutors; resident intern specialists

1. Introduction

The health level perceived by workers is closely related to the psychosocial factors of the work environment. These factors have a direct impact on professional life of the person, affecting their physical and mental health as well as their quality of life, favoring the appearance and manifestation of different diseases [1].

The psychosocial environment of healthcare professionals and, in particular, of Primary Care personnel is characterized by high psychological and emotional demands and a high level of self-perceived stress. For this reason, these professionals have a higher risk of suffering from anxiety-depressive disorders than the general population [2,3]. Furthermore, the COVID-19 pandemic has had a high impact on mental health and the quality of life of these healthcare professionals [4].

Some of the triggers for stressful situations are inherent to the health professions, such as long working hours, the unpredictability of work, contact with suffering, pain and death, or the support for families. However, there are also other external factors that can increase the level of stress perceived by professionals, such as the high workload, the staffing shortages, the existence of users increasingly demanding solutions to their needs and health problems, the increased need for knowledge, the insufficient time for continuous training and recycling, or the perceived lack of support from managers [5-7]. In addition, as a consequence of COVID-19 pandemic, the fear of being infected, the possibility of transmitting the disease to their families, the confinement and, in some cases, voluntary isolation have increased the appearance of stressful situations [8,9].

The main effects of stress on healthcare professionals are burnout, anxiety-depressive disorders and lateral violence [10]. Previous studies have shown that stress inherent to health care occupations can affect high-level cognitive functions, specifically attention and memory, and can lead to anxiety and depression, with significant personal and professional repercussions, including decreased patient satisfaction, reduced job satisfaction, increased medical errors, disruption to personal relationships, substance abuse, as well as a variety of mental health problems [11-16].

Depression is defined as a mood disorder, with a persistent feeling of sadness and loss of interest. Different studies have reported a significantly and positively correlation between the occurrence of anxiety and mood symptoms and the levels of job stress in professional. In addition, there is also an important association between depressive disorders and other important health problems, especially chronic ones [17-20].

The results of several studies have showed the need to provide interventions to support the mental health of Primary Care professionals, especially during the early stages of the COVID-19 pandemic [21,22]. Mindfulness training programs have proved to be an effective technique in reducing perceived stress and anxiety-depressive symptoms in healthcare professionals, improving different index of mental health and well-being [23-28]. Mindfulness was originally defined by Kabat-Zinn in 1979 as the ability to pay attention on purpose in the present moment, without judgment, to the development of one's own experiences moment to moment [29]. This type of meditation practice is based on

training the self-regulation of attention and consciousness to improve the control of mental processes, increasing well-being [30,31].

Related to mindfulness, self-compassion is understood as the ability to respond to oneself in times of failure or discomfort with education, kindness, and understanding. This aspect is relevant among health professionals since they have to know how to respect and accept themselves in order to transmit those emotions to the people who provide their service. Self-compassion is a resilience factor linked to less psychopathology, stress and greater well-being. It is related to mindfulness and is often included in training programs in order to improve the relationship between professional and patient [32,33].

The Mindfulness-based stress reduction (MBSR) training program was developed by Kabat-Zinn [34]. It consists of eight 2.5-hour group sessions a week along with 45 minutes a day of practice at home for six days a week. The findings of different meta-analysis about this program have shown positive results in physical and mental health among different clinical populations [35,36]. However, this program requires considerable commitments of time to complete the training, which is a barrier for many people and limits its use in many situations [37]. Different studies have tried to reduce the implementation time of these programs to 4 weeks, while maintaining their effectiveness. In a systematic review, an abbreviated MBSR training program was as effective as standard one in improving the psychological functioning of healthcare professionals [23].

Not enough studies have been conducted to provide solid evidence on the effectiveness of the abbreviated MBSR training program in healthcare professionals, especially in tutors and resident intern specialists of Family and Community Medicine and Nursing. The residence system adopted in Spain by the National Health System is structured through teaching units (TU) through which training programs are offered, guided by volunteer tutors experienced in this area. Therefore, the objective of this study was to compare the effectiveness of an abbreviated MBRS training program in relation to a standard one in the levels of anxiety and depression in tutors and resident intern specialists of Family and Community Medicine and Nursing.

2. Materials and Methods

2.1. Study Design – Participants.

The MINDUDD study was an open-label, pragmatic, non-inferiority, controlled, cluster-randomized, multicenter clinical trial, with three parallel groups. Its objective was to evaluate the effect of a mindfulness and self-compassion program on the levels of work stress and burnout in tutors and resident intern specialists of Family and Community Medicine and Nursing.

The MINDUDD study protocol, with a description of data gathering methods, has been published previously [38] and registered in ClinicalTrials.gov website, supported by the United States National Library of Medicine, with identifier number NCT03629457.

In this manuscript, a subanalysis of the anxiety and depression levels of the participants is presented, as part of the secondary outcomes of the clinical trial.

2.2. Study Participants and Recruitment.

This study was carried out in the field of Primary Care, and the participants were selected from the following six Teaching Units (TUs) of the Spanish National Health System: Almería, Burgos, Córdoba, Jaén, Ponferrada and Zaragoza Sector I. These TUs were chosen according to the population density of each territory, distributed across the Spanish geography. All tutors ($n = 297$) and resident intern specialists ($n = 595$) of Family and Community Medicine or Nursing from these TUs were the study population. Eligibility criteria included being active and signing the informed consent document after receiving information about the study. Subjects were excluded if they had previously attended a mindfulness training course or workshop of at least 4 weeks, were active mindfulness

practitioners, were on prolonged sick leave during fieldwork, or have mental disorder discouraging the development of the interventions. 150 151

The study was disseminated by the usual communication channels existing in each of the 6 TUs. Possible participants were recruited through an informative face-to-face 1-hour meeting, in which the objective, methodology and voluntary nature of the study were explained to them. They were invited to take part in the study, having to fill out and sign both the commitment form and the informed consent in case of acceptance. 152 153 154 155 156

2.3. Sample Size. 157

The potential modification of the mean Five Facet Mindfulness Questionnaire (FFMQ) score, as main variable of this study, was used to estimate a priori the sample size. Accepting an alpha risk of 0.05, a beta risk of 0.20, and a standard deviation (SD) of ± 20 points, in a two-sided contrast, with an expected drop-out rate of 25% during the follow-up, 140 participants (38 per group) was required to detect a minimum difference of ≥ 15 points in the experimental groups' (EGs) FFQM score compared to the control group (CG). The results obtained in similar previous studies have been used to calculate this estimation [39,40]. In addition, the effects of the study type of its design were also taken into account when the sample size was calculated. Thus, in order to achieve the same power between intra and intergroup variance, a multiplying factor of 1.7 was applied, assuming a cluster size of 15 and a the intra-cluster correlation coefficient < 0.05 , the most frequent in randomised clinical trials in Primary Care [41,42]. Assuming this value, 132 subjects, 44 in each comparison group and 22 for each TU, were considered sufficient for detecting clinically relevant differences in the main variable of the study. 158 159 160 161 162 163 164 165 166 167 168 169 170 171

2.4. Procedure and Randomisation. 172

The assessment and measurements of the participants were taken at three time points. One week before the interventions began, all participants from the different groups attended to the initial or baseline evaluation visit (pre-test), in which the study variables were collected. Subsequently, all participants were assessed again in the final evaluation visit (post-test), which took place 4 weeks after the initial evaluation visit for the EG1 participants and 8 weeks for those of the CG and EG2. Furthermore, EG1 and EG2 participants were reassessed in the follow-up visit, 3 months after the end of the program interventions, in order to verify the maintenance of their effects over time. (Figure 1). 173 174 175 176 177 178 179 180

Each of the TUs analyzed was established as a different and independent cluster, being randomly assigned to the CG (2 TUs), the EG1 (2 TUs) or the EG2 (2 TUs). Participants' selection was performed in each TU and stratified according to the type of professional (66 tutors and 66 resident intern specialists). 181 182 183 184

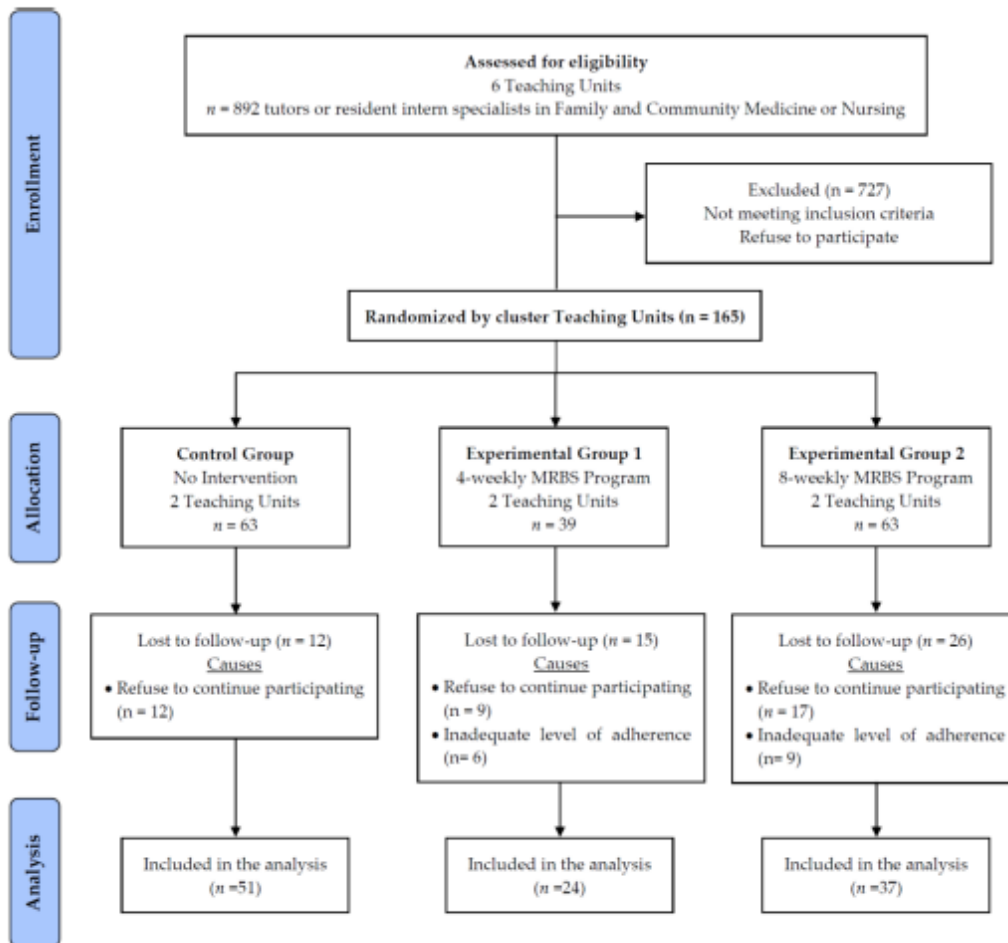


Figure 1. Flow chart of participants through the study.

2.5. Blinding Strategy.

Due to the nature of the intervention, the participants could not be blinded. However, in order to prevent possible cross-contamination between groups, different strategies were used to achieve the highest possible level of blindness. The researcher who performed the training sessions in the EGs was different from the investigator who conducted the evaluation visits. In addition, the person responsible for the statistical data analysis did not know the group assignments. Clear instructions were provided to all participants in order to not disclose, during the evaluation visits, the group to which its TU had been randomly assigned.

2.6. Interventions.

EG1 and EG2 interventions were based on the MBSR training program, designed by Jon Kabat-Zinn at the Medical Center of the University of Massachusetts [43,44]. MSC program practices were also incorporated to complement the interventions [45-47]. The different sessions of each group were adapted to the characteristics of the health care professionals and differed in terms of the duration and time dedicated to the tasks [43,44]. EG1 participants were included in an abbreviated training program, which consisted of 4 weekly sessions lasting 150 minutes and 15 minutes of daily practices at home. On the other hand, a standard training program, consisting of 8 weekly sessions of 150 minutes

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with the daily practice for 30 minutes at home, was applied to the EG2 participants. All sessions were carried out in groups, looking for their practical application in the personal and/or professional field of the participants. To this end, moments of collective exploration were alternated with others of silence on the best strategies to address difficult and complex situations. Perception of reality, power of emotions, knowledge of mindfulness, reaction to stress and emotional tension, resilience, use of mindful communication, one-self-care, time management, as well as the integration of mindfulness into everyday life were some of the aspects developed in the different sessions. The activities developed in each of the sessions have been detailed previously in the study protocol [38]. Both training programs were unified in the different TUs and taught by the same accredited instructors. To avoid any variability associated with them, the therapist used standardized and uniform methodological criteria, which were stated in a manual.

CG participants did not receive any type of intervention. They only attended to a 1-hour information session, in which their role in the study was explained and they were invited to complete the assessment at two time points, coinciding with EG2. They had to pledge not to receive any intervention and not to participate in the practice of any session of mindfulness or meditation techniques during the study period. After the finish of the fieldwork, they were offered the opportunity to participate in the abbreviated training program.

2.7. Main Outcomes – Instruments.

The anxiety and depression of the participants were the main outcomes of the study, which were assessed in the different evaluation visits (pre-test, post-test and follow-up).

Psychological symptoms of anxiety and depression were measured with the Goldberg Anxiety and Depression Scale (GADS) [48]. This test is composed of two subscales: one for the detection of anxiety (Goldberg Anxiety Scale, GAS) and the other for the detection of depression (Goldberg Depression Scale, GDS). Each subscale contains nine dichotomous yes/no questions; the first four are obligatory, while the remaining five are only formulated if any of the earlier ones are answered in the affirmative. The evaluator asks the participant about the different symptoms contained in the GDAS, referring to the previous 15 days. For each affirmative answer 1 point is added, not scoring in case of the negative one. The score of each subscale ranges from 0 to 9, while the GDAS from 0 to 18. The person is considered to have anxiety if they answer affirmatively to four or more items on the GAS, and depression if they give two or more affirmative answers on the GDS [48–50]. This scale has been validated for the Spanish population by Montón Franco et al., showed an adequate level on internal consistency with a Cronbach's alpha of 0.81% for GADS, 0.74% for GAS and 0.70% for GDS [51].

The attendance of the participants at the face-to-face sessions was continuously monitored in order to measure the adherence to the training program. In addition, the participants had to write a daily personal notebook of the practices at home, which had to be showed to the instructor in each session for supervision. Participants who had completed at least 3 of the 4 sessions in EG1 or 6 of 8 in EG2 were considered to have an adequate level of adherence, and their data were included in the subsequent statistical analysis.

During the pre-test evaluation, information about the sociodemographic variables, such as age, sex (male or female), professional category (physician or nurse), type of professional (tutor or resident intern specialist), work center (hospital or health center), time working in the Spanish National Health System, was also collected to control for potential predictor or confounding effect. A more detailed description of these variables is included in the clinical trial protocol [38].

2.8. Data Collection Procedure, Data Management and Monitoring.

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In the evaluation and follow-up visits, the measurement and data collection were conducted by same researcher, who had been specifically trained for these tasks previously. The randomization process was carried out by another member of the research team, different from the one responsible for the subsequent statistical analysis of the data. Each participant had a unique alphanumeric code to identify the data collected in the different evaluations within the study. A database was created, which only research team members involved in the statistical analysis had access. Double data entry procedure was used for all questionnaires to keep the error rate as low as possible. The principal researcher was the responsible for adapting the procedures to the protocol and performing the weekly study monitoring and the database cleaning and debugging.

2.9. Ethical Considerations.

The Clinical Research Ethics Committee of the Reina Sofía University Hospital of Córdoba (Spain) approved the protocol of this clinical trial, with reference number 3845. Prior to inclusion in the study, all participants were informed about its objective as well as their risks and benefits. The written and signed informed consent was provided by each participant, according to the general recommendations of the Declaration of Helsinki. The data obtained were not used for other aims than those expressed in the written informed consent or transferred to third parties outside the study. The confidentiality of the participants' data was guaranteed at all times in accordance with the provisions of Organic Law 3/2018, of December 5th, on Personal Data Protection and Guarantee of Digital Rights, the Law 14/2007, of July 3rd, on Biomedical Research, and the EU Regulation 2016/679 of the European Parliament and of the Council, of April 27th 2016, on the General Data Protection of Natural Persons with regard to the Processing of Personal and Free Circulation of such Data.

2.10. Statistical Analysis.

The results were analyzed on an intent-to-treat basis, in order to control withdrawals, losses, deviation from the protocol or anything that happened after randomization. Continuous variables were summarized as mean and SD, while categorical variables were expressed as frequencies distribution and percentages. The Kolmogorov-Smirnov test was used to verify the compliance of the normality criteria in continuous variables. The comparability between the three study groups in the pre-test evaluation, in terms of age, sex, professional category, type of professional, work centre or time working in the Spanish National Health System, was assessed using the chi-squared test or Student's t test for independent samples. A one-way variance analysis (ANOVA) test was used to analyze the effect of the MBRS training program on the anxiety and depression in CG, EG1 and EG2 participants. To compare the mean anxiety and depression scores in each group over time, a repeated measures ANOVA test was performed. The presence or absence of sphericity was calculated using the Mauchly's W test, performing the Greenhouse-Geisser correction if necessary. The Bonferroni correction was used for multiple comparisons. The squared eta coefficient (η^2) was calculated to estimate the effect size of the interventions on the anxiety and depression levels, interpreted the results according to the following criteria: if $0 \leq \eta^2 < 0.05$, no effect; if $0.05 \leq \eta^2 < 0.26$, the effect was minimal; if $0.26 \leq \eta^2 < 0.64$, the effect was moderate; and if $\eta^2 \geq 0.64$, the effect was strong [52]. Finally, in order to eliminate the effect attributable to variables not included in the study design and to analyze the effects of the intervention, the changes in the post-test and follow-up scores between the CG and EG were compared by a covariance analysis (ANCOVA) test, using the pre-test scores of the dependent variables as covariate and the intervention groups as a fixed factor. The contrasting hypothesis established an alpha risk of 0.05 as the limit of statistical significance. The data were analyzed using the SPSS Statistics software for Windows, version 25.0 (IBM SPSS Inc, Chicago, IL, USA) and MLwiN software, version 3.0 (Centre for Multilevel Modelling, University of Bristol, Bristol, UK, 2019).

3. Results

3.1. Baseline Characteristics of the Study Participants

Of the 165 participants included in the study, 63 in the CG, 39 in the EG1 and 63 in the EG2, there were 38 losses because the subject refused to continue participating in the study and 15 due to an inadequate level of adherence to the training program. Therefore, 112 participants completed the study and were included in the analysis, with 51 in the CG, 24 in the EG1 and 37 in the EG2. (Figure 1).

Table 1 shows the baseline socio-demographic characteristics of participants according to the study group. Most of the participants were women ($n = 86$, 76.79%), and the mean age of the sample was 40.61 years ($DS \pm 12.61$). 84.82% of participants ($n = 95$) worked in Primary Care, being the physician the most represented professional category ($n = 95$; 84.82%). The mean work experience was 12.88 years ($SD \pm 13.15$). The sample was distributed equally to tutors and resident intern specialist (50 versus 62). At baseline, statistically significant differences were found between the 3 groups in age, professional type, and work experience.

Table 1. Baseline characteristics of participants.

Variable	Total $n = 112$	CG $n = 51$	EG1 $n = 24$	EG2 $n = 37$	<i>p</i> -Value
Age (years)	41.61 \pm 12.61	40.34 \pm 13.22	47.66 \pm 13.67	35.73 \pm 12.04	< 0.001
Sex					
Male	26 (23.21)	11 (21.57)	6 (25.00)	9 (24.32)	0.978
Female	86 (76.79)	40 (78.43)	18 (75.00)	28 (75.68)	
Occupation					
Physician	95 (84.82)	41 (80.39)	20 (83.33)	34 (91.89)	0.165
Nurse	17 (15.18)	10 (19.61)	4 (16.67)	3 (8.11)	
Professional type					
Tutor	50 (44.64)	24 (47.06)	15 (62.50)	11 (29.73)	< 0.001
Resident	62 (55.36)	27 (52.94)	9 (37.50)	26 (70.27)	
Workplace					
Health Center	95 (84.82)	40 (78.43)	22 (91.67)	33 (89.19)	0.217
Hospital	17 (15.18)	11 (21.57)	2 (8.33)	4 (10.81)	
Work experience (years)	12.88 \pm 13.15	13.13 \pm 12.95	19.49 \pm 13.91	8.91 \pm 11.06	< 0.001

Values are expressed as mean \pm standard deviation, median - interquartile range or frequencies (percentages). Abbreviations: CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks.

3.2. Anxiety and Depression

In baseline evaluations, there were no statistically significant differences between the CG, EG1 and EG2 in the GADS ($p = 0.500$), GAS ($p = 0.495$) and GDS ($p = 0.615$) which indicated the equivalence between the groups before starting the MBRS training programs. However, when comparing the scores of the post-test evaluation, statistically significant differences were observed in the GADS and GDS, with a weak effect size ($\eta^2 = 0.079$ and $\eta^2 = 0.114$, respectively). In both cases, these differences were observed between CG and EG2, with higher mean scores in the first of them, according to the results of the pairwise comparisons by Bonferroni test. Likewise, in the follow-up evaluations, the differences in the mean scores of the GADS, GAS and GDS were also statistically significant, with a weak effect size ($\eta^2 < 0.26$). The CG participants showed higher mean scores in these three variables with respect to those of EG2. (Table 2).

Table 2. Inter-group comparison of GADS, GAS and GDS at different evaluation points, using one-way ANOVA.

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Group	Evaluation	CG		EG1		EG2		F	p-Value	η^2
		Mean	SD	Mean	SD	Mean	SD			
GADS	Pre-test	8.20	4.28	7.10	5.20	7.68	4.55	0.697	0.500	0.009
	Post-test	7.82*	4.64	5.82	5.51	4.82*	3.88	5.227	0.007	0.079
	Follow-up	8.35*	4.19	6.41	5.63	5.18*	3.72	5.725	0.004	0.095
GAS	Pre-test	5.20	2.59	4.53	2.99	4.96	2.77	0.705	0.496	0.009
	Post-test	4.64	2.68	3.57	2.94	3.46	2.70	2.645	0.075	0.042
	Follow-up	5.15*	2.41	4.12	3.08	3.54*	2.57	4.238	0.017	0.072
GDS	Pre-test	3.00	2.27	2.56	2.56	2.71	2.13	0.487	0.615	0.006
	Post-test	3.17*	2.35	2.25	2.81	1.36*	1.51	7.823	0.001	0.114
	Follow-up	3.19*	2.28	2.29	2.88	1.64*	1.60	5.252	0.007	0.088

*p-value <0.05 in post-Hoc Analysis (Bonferroni test) between CG and EG2 Abbreviations. CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks; SD: Standard deviation; GADS: Goldberg Anxiety and Depression Scale; GAS: Goldberg Anxiety Scale; GDS: Goldberg Depression Scale.

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In the intragroup comparisons, a significant reduction in the mean scores of the post-test evaluation in relation to those of the pre-test in the GADS and GDS was observed, in the participants who received the standard training program, with significant and minimal effect sizes ($\eta^2 < 0.26$). However, no statistically significant differences were obtained in the mean anxiety and depression scores at the follow-up evaluation in relation to pre or post-test one. (Table 3).

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344**Table 3.** Intra-group comparison of GADS, GAS and GDS at the same evaluation point, using ANOVA for repeated measures.345
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Variable	Group	Pre-test		Post-test		Follow-up		MS	F	p-Value	η^2
		Mean	SD	Mean	SD	Mean	SD				
GADS	CG	8.20	4.28	7.82	4.64	8.35	4.19	6.131	0.806	0.451	0.025
	EG1	7.10	5.20	5.82	5.51	6.41	5.63	7.314	0.850	0.437	0.050
	EG2	7.68*	4.55	4.82*	3.88	5.18	3.72	33.722	3.224	0.040	0.123
GAS	CG	5.20	2.59	4.64	2.68	5.15	2.41	1.939	0.750	0.476	0.023
	EG1	4.53	2.99	3.57	2.94	4.12	3.08	4.843	1.120	0.339	0.065
	EG2	4.96	2.77	3.46	2.70	3.54	2.57	10.597	2.194	0.123	0.087
GDS	CG	3.00	2.27	3.17	2.35	3.19	2.28	1.768	0.752	0.476	0.023
	EG1	2.56	2.56	2.25	2.81	2.29	2.88	0.961	0.622	0.543	0.037
	EG2	2.71*	2.13	1.36*	1.51	1.64	1.60	6.514	3.583	0.036	0.135

*p-value <0.05 in post-Hoc Analysis (Bonferroni test) between pre-test and post-test Abbreviations. SD: Standard deviation; MS: Mean Square; CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks; GADS: Goldberg Anxiety and Depression Scale; GAS: Goldberg Anxiety Scale; GDS: Goldberg Depression Scale.

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Table 4 summarizes the comparison between CG, EG1 and EG2 in post-test and follow-up scores, controlling pre-test scores, using ANCOVA. This analysis showed statistically significant differences in the GADS and GDS variables, between different groups, confirming the previous intergroup comparisons. Therefore, these differences, mainly in EG2, could be attributed to the MBRS training program. (Table 4).

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Table 4. Comparison between groups in post-test and follow-up scores, controlling pre-test scores, using ANCOVA.

Evaluation	Variable	Source	Type III Sum of Square	df	MS	F	p-Value	η^2
Post-test	GADS	Pre-test GADS	656.61	1	656.61	49.880	< 0.001	0.354
		CG/EG1/EG2	118.15	2	59.08	4.488	0.014	0.090
		Error	1197.91	91	13.16			
	GAS	Pre-test GAS	195.23	1	195.23	37.249	< 0.001	0.388
		CG/EG1/EG2	24.53	2	12.26	2.340	0.102	0.128
		Error	476.95	91	5.24			
	GDS	Pre-test GDS	166.40	1	166.40	57.660	< 0.001	0.388
		CG/EG1/EG2	38.40	2	1.92	6.653	0.002	0.128
		Error	262.62	91	2.87			
Follow-up	GADS	Pre-test GADS	413.79	1	413.80	29.497	< 0.001	0.272
		CG/EG1/EG2	85.04	2	42.52	3.031	0.050	0.071
		Error	1108.26	79	14.03			
	GAS	Pre-test GAS	107.98	1	107.98	18.644	< 0.001	0.191
		CG/EG1/EG2	25.78	2	12.89	2.226	0.115	0.053
		Error	457.52	79	5.79			
	GDS	Pre-test GDS	108.94	1	108.94	32.063	< 0.001	0.289
		CG/EG1/EG2	19.53	2	9.77	2.874	0.049	0.068
		Error	268.42	79	3.40			

Abbreviations. df: Degrees of Freedom; SD: Standard deviation; MS: Mean Square; CG: Control Group; EG1: Experimental Group, 4 weeks; EG2: Experimental Group, 8 weeks; GADS: Goldberg Anxiety and Depression Scale; GAS: Goldberg Anxiety Scale; GDS: Goldberg Depression Scale.

4. Discussion

In this study, the effects of a standard training program in mindfulness and self-compassion have been analyzed in tutors and resident intern specialists of Family and Community Medicine and Nursing, and compared with those of another abbreviated one. The potential benefits of both training programs on anxiety and depression have also been studied. The main results have shown an improvement in the GADS and GDS scores in the participants who received the standard training program, with the maintenance of its effects over time. However, no significant impact of the abbreviated training program on anxiety and depression levels has been observed.

Mindfulness and self-compassion training programs have proven to be very useful to improve emotional regulation and reduce the anxiety, depression, and post-traumatic stress disorders [53-55], which are symptoms associated with COVID-19, especially in health professionals [30]. Several studies have also shown an increase in the consciousness level, an improvement in coping strategies in times of stress, a greater control of emotions and a significant reduction in anxiety and depression levels when these interventions have been carried out [56-58]. Goyal et al., completed a systematic review of 47 clinical trials, whose objective was to analyze the efficacy of mindfulness and meditation training programs on stress in the general population, and concluded that these techniques had moderate evidence of improved anxiety at 8 weeks ($\eta^2 = 0.38$; 95% confidence interval (CI) 0.12-0.64) and at 3-6 months ($\eta^2 = 0.38$; 95%CI 0.02-0.43), as well as depression at 8 weeks ($\eta^2 = 0.30$; 95%CI 0.00-0.59) and at 3-6 months ($\eta^2 = 0.23$; 95%CI 0.05-0.42) [27]. On the other hand, a meta-analysis of 38 randomized clinical trials by Spinelli et al., focused on the effect of mindfulness on qualified and trainee health care professionals [59]. The findings of this review highlighted that mindfulness training program helped significantly to reduce anxiety (Hedge's $g = 0.47$; 95%CI 0.27-0.67) and depression (Hedge's $g = 0.41$; 95%CI 0.26-0.57) at post-intervention.

Most of the research to date has demonstrated the multiple benefits of standard 8-weeks mindfulness and self-compassion training programs on healthcare professionals [23,59]. Some authors have analyzed the effectiveness of these training programs when implemented in a shorter period of time, such as 4 or 3 weeks [44,60-63]. In all cases, a

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significant reduction in anxiety and depression levels was observed, maintaining their effects at 9 months follow-up [44]. However, the number of studies comparing the effectiveness of abbreviated and standard interventions in health professional is very limited. Demarzo et al., compared the effectiveness of an 8-weeks MBRS training program and a 4-weeks abbreviated version for the improvement of well-being in a sample of Health Sciences undergraduate students, and concluded that both types of program worked in the same way [64]. In a meta-analysis by Kriakus et al., whose objective was to update the latest data obtained on the efficacy of mindfulness practice among healthcare professionals, additional evidence was provided that these programs were effective in improving psychological aspects, anxiety, and depression levels [23]. Furthermore, a standard 8-weeks training program was as effective as an abbreviated 4-weeks one in reducing these symptoms. However, the findings of this study have revealed that only the standard training program improves the depression levels, with the maintenance of its effects at 3 months follow-up.

In this study, no improvements in anxiety levels have been observed in either of the two EGs. Consistent with these findings, two clinical controlled trials reported non-significant effects in anxiety [65,66]. These results do not coincide with those obtained by other authors, who have demonstrated the positive effects of an intervention based on mindfulness in minimizing anxiety symptoms. Irving et al., completed a systematic review examining the potential benefits of MBSR training program in improving well-being and coping with stress amongst healthcare professionals and concluded that these types of interventions reduced anxiety [67]. In a quasi-experimental trial, Barbosa et al., analyzed the impact of 8-weeks MBSR training program on students from five healthcare degrees and observed a significant decrease in anxiety levels at weeks 8 and 11 compared with baseline [68]. In another study, a sample of primary care physicians participated in an abbreviated MBRS training program, improving their indicators of anxiety [44]

In line with the results of this study, different researchers have concluded that the standard MBRS training program can reduce the depressive symptoms of the participants. A randomized controlled trial by Song et al., examined the effects of an 8-weeks MBRS training program on depression levels in a sample of 50 Korean nursing students, and showed a significantly greater decreases in depression measures [69]. In the same way, Pizutti et al., evaluated the effects of the Breathworks' Mindfulness for Stress 8-weeks training program on depressive symptoms, psychiatric symptoms and negative effects in 84 primary healthcare professionals, and observed a statistically significant decrease in all of the variables analyzed after the intervention [70].

In this type of training programs, the effects achieved in the short term are as important as their maintenance over time. Fortney et al., observed the maintenance of significant reductions in depression levels after 9-month follow-up [44]. In the study by Lane et al., the mindfulness training program not only reduced negative symptoms such as depression in a sample of 200 subjects with different professions, but its benefits were maintained over time after had elapsed 3 months since the end of the intervention [37]. These results are in line with those obtained in the present study, since the decrease in depression levels obtained in EG2 in the post-test were maintained during the 3 subsequent months.

This study is pioneering in comparing the effects of an abbreviated MBSR and MSC training program with a standard one on anxiety and depression levels in a group of tutors and resident intern specialists in Spain. However, these findings should be considered within the context of its strengths and limitations. Among its main strengths were: the longitudinal methodology which allows determining causal relationships between the study variables, the use of validated instruments for the Spanish population which guarantees their validity and reduces the probability of information biases, the baseline anxiety and depression levels were equivalent so all participants started from the same situation, as well as the evaluation of effect over time. On the other hand, the limitations may

have influenced the results obtained in the study and reduced its representativeness. Although TUs were randomly assigned, with the aim of minimizing the risk of contamination, statistically significant differences were observed between the 3 groups in age, type of professional and time working in the Spanish National Health System. Due to the epidemiological situation derived from the COVID-19 outbreak, the final sample size was lower than initially calculated, which may have influenced the results obtained. The characteristics of non-responders might differ from those of the responders. In order to control this selection bias, an intention-to-treat analysis was performed. Although a representative sample of the Spanish tutors and resident intern specialists in Family and Community Medicine or Nursing was available, the over representative of women, Primary Care workers and physicians reduced the generalizing of study findings. In addition, although no theoretical-practical session of mindfulness or meditation has been provided to the CG participants, it was not possible to guarantee that they remained inactive during the field-work period, which could minimize the differences in the expected results when comparing this group with EGs.

5. Conclusions

An 8-weeks MBSR training program aimed at tutors and resident intern specialist in Family and Community Medicine and Nursing produces significant improvements in levels of anxiety and depression in general and in depression in particular, maintaining these effects during three months. A 4-weeks version has not been associated with significant changes in these variables. More exhaustive and representative studies are required to support the effectiveness of the abbreviated MBSR and MSC training programs in Primary Care professionals, which improve accessibility and adherence to them

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