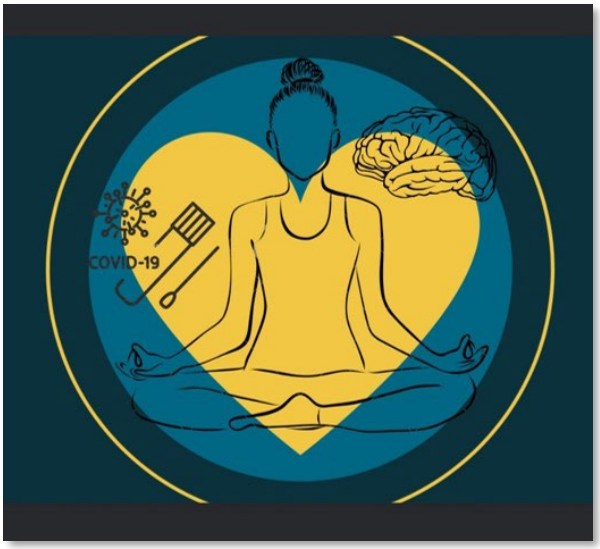
TESIS DOCTORAL

Programa de Doctorado de Investigación en Biomedicina

El deterioro de la salud mental durante el confinamiento por CoV-19 y la protección de la autocompasión



Maria Elena Gutiérrez Hernández

Las Palmas de Gran Canaria de Abril de 2023

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ESCUELA DE DOCTORADO DE LA ULPGC

Departamento de Bioquímica y Biología Molecular, Fisiología Genética e Inmunología

PROGRAMA DE DOCTORADO

Investigación en Biomedicina

El deterioro de la salud mental durante el confinamiento por CoV-19 y la protección de la autocompasión

Tesis Doctoral presentada por Doña Elena Gutiérrez Hernández

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Las Palmas de Gran Canaria a de Abril de 2023

UNIVERSIDAD DE LAS PALMAS
DE GRAN CANARIA

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CERTIFICAN:

Que el trabajo de investigación titulado: "El deterioro de la salud mental durante el confinamiento por CoV-19 y la protección de la autocompasión" ha sido realizado por Doña María Elena Gutiérrez Hernández en el Departamento de Bioquímica y Biología Molecular, Fisiología, Genética e Inmunología bajo su dirección y asesoramiento científico y técnico, y que una vez revisada la presente memoria, la encuentran apta para su defensa ante tribunal.

Y para que así conste y surta los efectos oportunos, extienden la presente certificación en Las Palmas de Gran Canaria a de Abril de 2023

La Directora .La Directora El Director

A mis directores de Tesis por lo que me enseñaron

A Nanda por lo que aprendimos juntas

A mis hijos por su amor incondicional

«No es el estrés lo que nos mata, es nuestra reacción al mismo»
Hans Selye

«El dolor es inevitable, el sufrimiento es optativo»
Siddhartha Gautama

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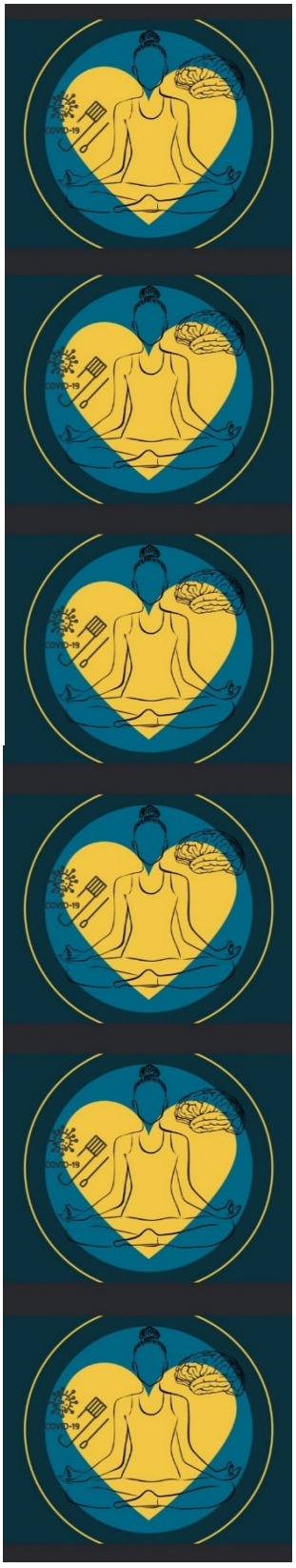
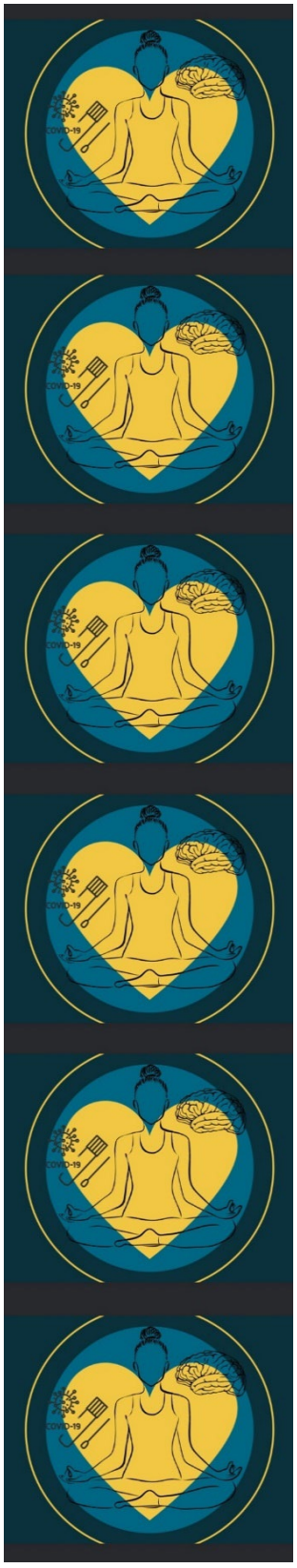


ABREVIATURAS



CFT: Compassion Focused Therapy. Terapia Enfocada a la Compasión

DASS-21: Depresion, Ansiety, Stress Scale. Escala de Depresión, Ansiedad y Estrés

DMN: Default Mode Network. Red neuronal por defecto

GAS-SGA: General Adaptation Syndrome. Síndrome General de Adaptación

ICTV: Internal Committee on Taxonomy of Virus. Comité Interno de Taxonomia de virus

MBCT: Mindfulness Based Cognitive Therapy. Terapia Cognitivo Conductual Basada en la Atención Plena

MBI: Mindfulness Based Interventions. INtervenciones basadas en la Atención Plena

MSC: Mindfulness Self-Compassion. Auto-Compasion Basada en la Atención Plena

MBSR: Mindfulness Based Stress Reduction. Reducción del Estrés Basada en la Atención Plena

MERS: Middle East Respiratory Syndrome. Síndrome Respiratorio de Oriente Medio

NCIP: Novel Coronavirus (2019-nCoV)–Infected Pneumonia, Neumonía por Infección con un Nuevo Coronavirus (2019-nCoV)

PHEIC: Public Health Emergency of International Concern. Emergencia de Salud Pública de Importancia Internacional

PVDQ: Perceived Vulnerability to Disease Questionnary. Cuestionario de Percepción de Vulnerabilidad a la Enfermedad

SARS: Severe Acute Respiratory Syndrome. Síndrome Respiratorio Agudo Severo

SARS-CoV-2: Severe Acute Respiratory Syndrome-Coronavirus-2

SCMI: Self-compassion and Mindfulness-based Intervention. Intervención basada en la Atención plena y la Autocompasión

SCS: Self-Compassion Scale. Escala de Autocompasión

RESUMEN

La socialización y el contacto físico son necesidades tan básicas en la especie humana, que la motivación para satisfacerlas, sólo se ve superada por aquella destinada a satisfacer los requerimientos fisiológicos más elementales, como el hambre, la sed y la reproducción.

La pandemia por Cov-19, que obligó al confinamiento de la población, impidió la satisfacción de las mencionadas necesidades, convirtiéndose este hecho, junto con el miedo al contagio y a las consecuencias económicas de la pandemia, en uno de los componentes con más peso en lo que casi con seguridad podríamos considerar como el *stressor* psicosocial más importante desde la última guerra mundial.

Con las circunstancias descritas en mente la hipótesis de que además de la salud general de la población, la salud mental iba a verse especialmente comprometida, parecía más que posible. Con el objeto de probarla, durante la segunda semana del confinamiento se reclutó utilizando el método de la bola de nieve, una muestra de la población, a la que después de aplicar los criterios de exclusión quedó reducida a 917 personas.

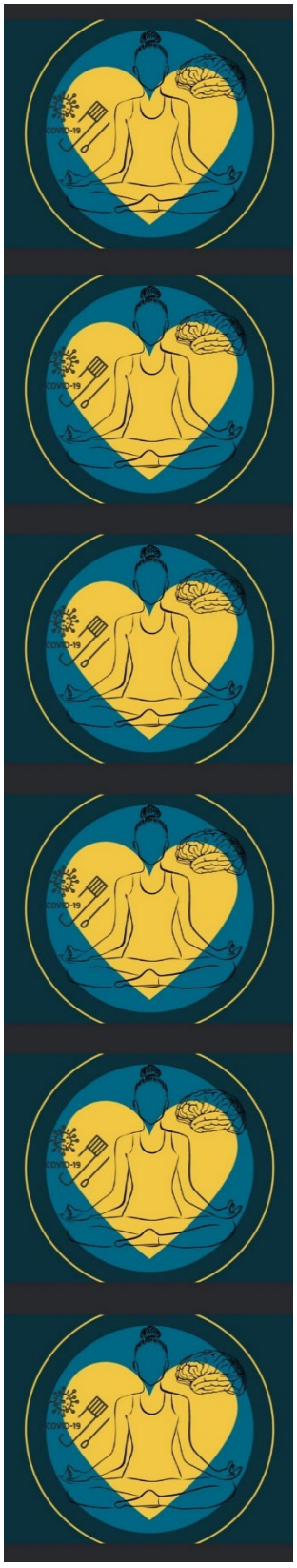
Todas las personas reclutadas recibieron aproximadamente en la mitad del periodo de confinamiento, para su cumplimentación de forma anónima, un cuestionario destinado a medir el nivel psicosocial y sociodemográfico de la población estudiada. incluyendo información acerca del género, nivel económico, empleo, presencia o no de niños en el domicilio, presencia o no de otras personas, tipo de vivienda, existencia de síntomas de CoV-19 en las dos semanas previas o de trastorno mental anterior al confinamiento.

También cumplimentaron la escala DASS-21 que mide ansiedad, depresión y estrés, el cuestionario PVDQ que mide la percepción de peligro de infección y el miedo al contagio y la escala SCS que mide las tres dimensiones de la autocompasión: auto-amabilidad frente a autocrítica; humanidad común frente a aislamiento y atención plena frente a sobre-identificación.

Además, dos grupos aleatorizados de cuarenta personas recibieron diariamente una meditación guiada a través de zoom, alternándose aquellas destinadas a potenciar la atención plena con las que desarrollan la autocompasión. Los grupos de intervención fueron comparados con un grupo control. Ambos grupos cumplimentaron previamente a la intervención una encuesta con datos sociodemográficos. También antes, al término y dos meses después de finalizada la intervención las escalas DASS-21 y SCS.

Los resultados obtenidos, muestran que se produjo un deterioro en la salud mental de la población estudiada, que pudo correlacionarse con algunas variables sociodemográficas y también de forma inversa con los niveles de autocompasión. Los niveles de autocompasión mostraron ser un factor predictivo del distrés emocional en la población estudiada. En el estudio aleatorizado de la intervención utilizando un programa basado en la atención plena y la autocompasión y esta última y en especial el componente de atención plena, tuvieron un efecto protector frente al distrés generado por el confinamiento. Aunque, como ya ha sido descrito, el efecto desapareció en la medidas realizadas dos meses más tarde de la intervención, cuando la mayoría de los participantes había suspendido las prácticas, lo que sugiere que la intervención tendría que prolongarse mientras permanezca el factor estresante.

INTRODUCCIÓN



1.La pandemia por CoV-19

El SARS es una neumonía atípica de aparición relativamente reciente, de la que el paciente cero fue detectado el 21 de febrero de 2003 en un hotel de Hong Kong. La enfermedad se extendió a un sinnúmero de países tan rápidamente, que la OMS emitió una primera alerta global el 12 de marzo de ese mismo año y otra más dos días después ante la alarma causada por la rápida diseminación. La segunda alarma ya describía y nombraba la enfermedad, y alertaba acerca de la posibilidad de la extensión del contagio a través de los viajeros de las diferentes líneas aéreas entre Hong Kong y Toronto, Singapur y Hanoi, donde se registraron los siguientes brotes, que cuatro meses más tarde se habían convertido en 4000 y causado 550 muertes fuera del territorio chino (1-3).

El virus causante del SARS fue rápidamente identificado y clonado (4-5) y resultó ser un coronavirus de la misma familia de aquellos que causan el resfriado común, por lo que fue renombrado como SARS-CoV. La epidemia fue controlada, pero dada la gran morbilidad y las altas tasas de mortalidad del nuevo virus, se emitieron numerosas alertas por parte de científicos, clínicos y organizaciones internacionales, acerca de la posibilidad de una epidemia de características mucho más graves (3, 6-11)

Diez y seis años más tarde, el 19 de diciembre de 2019, cuatro casos de neumonía atípica fueron detectados en la ciudad china de Wuhan de la provincia de Hubei y atribuidos a un coronavirus de genoma desconocido hasta el momento (12-13). El 9 de Enero de 2020 la OMS desestimó la necesidad de restringir los viajes a China manifestando su confianza en la capacidad de las autoridades y la sanidad de ese país para controlar la epidemia (14). El agente causante de la enfermedad fue identificado muy rápidamente, como diferente de los coronavirus MERS-CoV y SARS-CoV, se describió su filogenia, secuenció su genoma y se asignó el nombre de 2019-nCoV (15) al virus que el 11 de febrero de 2020 el ICTV denominó SARS-CoV-2.

Las características de la enfermedad, hasta entonces denominada NCPI, la epidemiología de los primeros brotes, la transmisión y el crecimiento exponencial se describieron asimismo (16). El 30 de enero de 2020 la OMS declaró la PHEIC (17). El 11 de marzo de 2020 la OMS declaró la pandemia por Covid-19 (18) y el 14 de marzo de 2020 se decretó en España el estado de alarma y la población fue confinada por un periodo inicial de 15 días (19), que se prorrogó por otros tres periodos más de idéntica duración, hasta el

comienzo de la desescalada el 4 de Mayo de 2020, que finalizó junto con el estado de alarma el 21 de Junio de 2020, fecha en la que se produjo el inicio de la *nueva normalidad*.

2. La fisiopatología del estrés

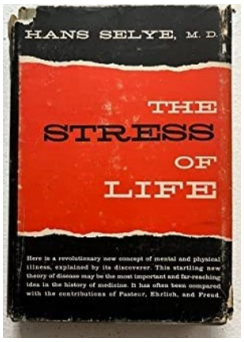
En 1936 Hans Selye publicó en Nature un artículo bajo el título de "*Síndrome producido por diversos agentes nocivos*" en el que describe la reacción compleja pero invariable del organismo ante cambios diversos (20). Los estímulos utilizados para dispararla incluían desde el frío y las lesiones quirúrgicas o de la médula hasta la inyección de un variado número de hormonas y drogas, es decir carecían de especificidad. A pesar de esta falta de especificidad, la respuesta ocurría siempre en tres fases:

a) La primera, durante las 6-48 horas después de la aplicación del estímulo nocivo, se caracteriza por una rápida disminución del tamaño del timo, el bazo, los ganglios linfáticos y el hígado; la acumulación de exudado peritoneal y pleural; bajada de la temperatura corporal: formación de úlceras en el tracto digestivo, en especial en el estómago, intestino delgado y apéndice; pérdida de *lipoides* corticales (glucocorticoides) y substancia cromafin de la médula; y, a veces, hiperemia en la piel, exoftalmos, lagrimeo e hipersalivación. Además, en los casos más severos podía observarse necrosis focal en el hígado y opacidades en el cristalino.
b) La segunda fase comenzaba 48 horas después de la agresión con una hipertrofia adrenal que sólo afectaba a la corteza, en tanto que la médula mostraba vacuolización; el edema empieza a desaparecer; se acumula un gran número de basófilos en la pituitaria. Y, a juzgar por los efectos observados en la periferia: hiperplasia del tiroides, cesa el crecimiento corporal, las gónadas se atrofian y en animales lactantes se produce una interrupción de la secreción de leche, se diría que se detiene la liberación de todas las hormonas hipofisarias con excepción de la corticotropina y la tirotropina. Lo que pudiera ser contemplado, dice Selye, como que el organismo sólo conserva aquellas hormonas que se necesitan con urgencia para mantener el equilibrio del medio interno. Si los estímulos continúan siendo aplicados en pequeñas dosis o intensidades, los animales desarrollan resistencia y en la última parte de esta fase las funciones de sus órganos vuelven a la normalidad.
c) La tercera fase ocurre únicamente ante la persistencia del estímulo durante un periodo de uno a tres meses, dependiendo de la severidad del agente disparador de la reacción.

En ella los animales pierden la resistencia y sucumben ante la reaparición de los cambios experimentados en la primera fase.

Selye dio el nombre de Reacción General de Alarma a la primera fase, Fase de Resistencia a la segunda y Fase de Agotamiento a la tercera. Y, puesto que la reacción completa representaba un esfuerzo generalizado del organismo para adaptarse a un desequilibrio, la denominó Síndrome General de Adaptación (SGA). Además, y dado que en especial los cambios que ocurrían durante la fase de alarma, guardan parecido con otros fenómenos como la inflamación, la anafilaxia, la respuesta al ejercicio o los cambios de temperatura extremos, sugirió que como los anteriores, el SGA era una reacción de defensa del organismo, destinada a mantener la homeostasis, si bien era cierto, que especialmente en su última fase, se convertía también en generadora de daño inespecífico.

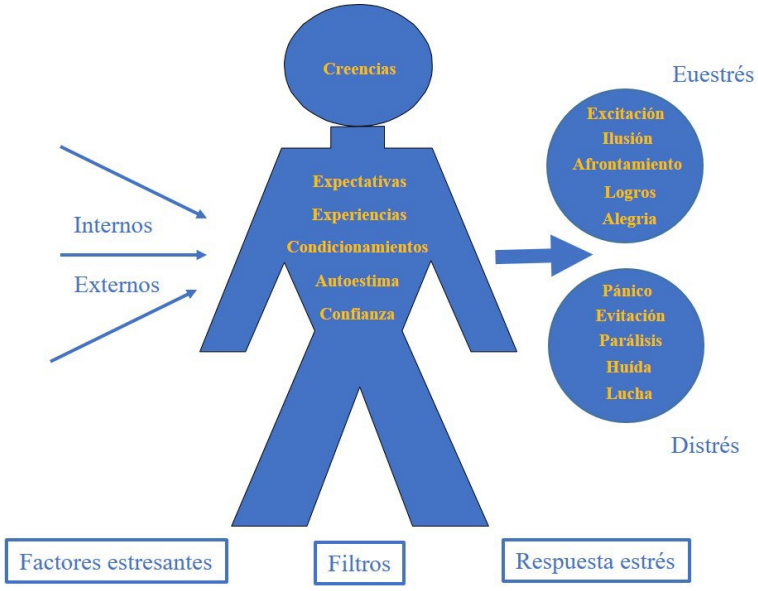
Pocos años más tarde, después de múltiples estudios en los que investigó la aparición del SGA en respuesta a estímulos más específicos y su relación con los daños que se producían en cada caso, comparó las dos caras del SGA, es decir su papel en el mantenimiento de la homeostasis y por tanto en la defensa del organismo y la producción de daño, con la relación existente entre magnitudes físicas como la fuerza y la presión y la resistencia a las mismas. La palabra utilizada en física para definir esta relación es *stress* y Selye la adoptó para definir la respuesta inespecífica del organismo a cualquier demanda. Este fue un concepto absolutamente revolucionario, dado que hasta entonces nunca se había definido la respuesta global del organismo ante la mayoría de los cambios que pueden ocurrir en el medio externo. También denominó *stressor*, a cualquier cambio capaz de inducir el SGA, es decir el estrés (21). Y propuso, que si bien muchos factores estresantes podían producir cambios específicos, no relacionados con el stress, cualquier cambio mantenido en el tiempo conlleva la aparición del SGA y por tanto, la intersección de la defensa frente a ese cambio, con el daño inespecífico en algunos tejidos, órganos o sistemas del cuerpo.



En su obra seminal para la definición del estrés, tal y como lo entendemos hoy, Selye sostiene que es inseparable de la vida, y diferencia dos tipos de estrés, entre los que la vida se mantiene en equilibrio, el *eustress*, que es aquel generado tanto por estímulos positivos o incluso negativos, pero que no traspasa la fase de resistencia, y el *distress*, que es aquel en el que se llega a la fase de agotamiento (22). En consecuencia, los *stressors*, pueden también diferenciarse en

eustressors o *distressors*, Siendo entonces lo más parecido a el estrés tal y como comúnmente se identifica en nuestros días, el *distress* con el que respondemos a los *distressors*.

Por último, transcurridos cuarenta años, y después de miles de estudios y publicaciones de un sinnúmero de autores, con su teoría del estrés firmemente aceptada, Selye vuelve a publicar lo que considera como puntualizaciones necesarias a conceptos que aún no estaban suficientemente definidos (23). Incluyendo, junto a algunas aclaraciones, sin interés ya en el momento presente, otras como la existencia de factores estresantes endógenos, es decir básicamente los pensamientos y emociones; lo que podría considerarse una anticipación del concepto de resiliencia, es decir la modificación de la respuesta al estrés por la genética, el condicionamiento (sexo, edad, creencias y otros) o el entorno físico y social; la etiopatogenia del estrés en las enfermedades psico-somáticas; e incluso adelanta sus ideas acerca de lo que podría ser la prevención y el tratamiento del estrés, eso sí aclarando que "*no debemos suprimir el estrés en todas sus formas, sino disminuir el distrés y facilitar el euestrés"*. Como se muestra en la figura muchos conceptos básicos de la psicología moderna acerca del estrés y, en especial la filosofía que sustenta la metodología utilizada en el presente estudio, podrían muy bien encuadrarse dentro de esta última afirmación.

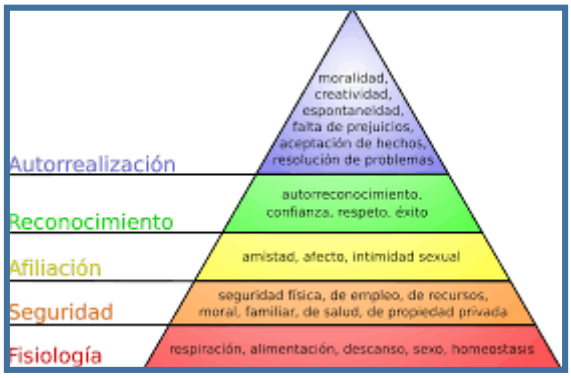


En los inicios de nuestra evolución como especie, la mayoría de los factores estresantes se encontraban en el exterior, y en esos momentos el estrés jugó casi exclusivamente un papel protector y adaptativo, es decir era mayoritariamente euestrés. Pero el hombre del siglo XXI, no está sujeto a las mismas amenazas que hace miles de años. Es frecuente que los peligros externos, hayan sido substituidos por creencias y percepciones internas. Y, dado que ni nuestro cerebro, ni nuestro cuerpo, han adquirido la capacidad de

diferenciar unos de otras, el estrés del hombre de nuestro siglo ha dejado en la mayor parte de las ocasiones de ser un proceso adaptativo, para convertirse en distrés.

3. Socialización y contacto físico, necesidades básicas del *Homo sapiens*

En 1943 Abraham Maslow expuso su teoría acerca de la motivación en el ser humano y para ilustrarla propuso que el motor para la misma era la consecución de un objetivo. Propuso también que el objetivo de la motivación en el ser humano sería la satisfacción de las necesidades básicas. Dado que no todas las necesidades tendrían la misma importancia en términos del mantenimiento de la vida, las agrupó en cinco niveles que representó escalonados en una pirámide, siendo las localizadas en la base las que habrían de ser satisfechas en primer lugar antes de pasar a la satisfacción de las agrupadas en el siguiente nivel (24).



Se aleja mucho del objetivo de este estudio el describir las sucesivas teorías de la motivación, por lo que solo utilizaremos la propuesta de Maslow para definír lo que consideró necesidades básicas del ser humano, que estructuró en:

a) **Necesidades Fisiológicas** entendiendo como tales aquellas cuya satisfacción es imprescindible para mantener la vida del individuo y posibilitar la supervivencia de la especie: Respiración, Alimentación, Descanso, Sexo y Homeostasis. Cuando estas necesidades están satisfechas se hacen presentes las:
b) **Necesidades de Seguridad** que a su vez depende de la existencia no sólo de un entorno físico seguro, sino del empleo, de los recursos, de normas morales, de una familia o de una sanidad universal. Circunstancias en su mayor parte que son consecuencia de la existencia de la socialización
c) **Necesidades de Afiliación** es decir de amor, afecto e intimidad sexual, en todas las que el contacto físico quien juega un papel determinante.
d) **Necesidad de Reconocimiento** incluyendo la autoestima, el respeto y la confianza de otros y el éxito.

e) **Necesidad de Autorealización o Autoactualización** que incluye el cultivo de habilidades en la resolución de problemas. De aceptación de los hechos, de creatividad y básicamente de alcanzar el máximo desarrollo del potencial de cada individuo.

Del examen de la pirámide de las necesidades de Maslow, se deduce que la necesidad de pertenencia social, de socialización, y de contacto se encuentran entre las necesidades básicas de nuestra especie, sólo superadas por las necesidades fisiológicas que nos permiten subsistir.

La necesidad y motivación para socializarse está con toda probabilidad impresa en nuestro genoma y es posiblemente una de las cualidades a las que debemos nuestra supervivencia como especie (25-26). De hecho, son muchas otras las especies para las que la socialización constituye una ventaja evolutiva, incluyendo a especies tan distantes de la nuestra como las arañas (27).

La socialización contribuye asimismo a la percepción de seguridad, una necesidad que se encuentra también entre aquellas más básicas para el ser humano (28).

En cuanto a la necesidad de contacto, la secreción de oxitocina, y puede que cambios en algún otro neurotransmisor, favorecen desde el momento del parto, el establecimiento en la madre de comportamientos que posibilitarán la generación del apego y la vinculación del niño (29-32), es decir la adquisición por el niño de patrones de conducta que le permitirán insertarse adecuadamente en la sociedad. Algo que debió de ser asimismo imprescindible para la supervivencia de la especie, dado que la nuestra se encuentra entre aquellas cuya descendencia tarda más tiempo en hacerse independiente de los cuidados maternos.

La necesidad de vinculación y apego adquirida en la primera infancia se extiende después a lo largo de toda la vida (33-34). Y un apego seguro y una buena vinculación social favorecen el bienestar y la calidad de vida (35-37).

El contacto físico es inseparable de las relaciones humanas (38-39); mejora la salud cardiovascular (40); un masaje suave en manos y pies, en voluntarios sanos, disminuye y normaliza las variaciones en la frecuencia cardíaca, baja los niveles de cortisol e insulina en sangre, mantiene cifras estables de glucosa y equilibra el balance entre simpático y parasimpático (41). El contacto físico también activa el sistema opioide, aumentando la

sensación de bienestar (42-44); previene y mejora la tristeza y la sensación de soledad (45-46); mejora la salud mental (47) y la esperanza de vida (48).

4. Qué es el *mindfulness*

A finales de los años 70 del pasado siglo, un PhD en Biología Molecular de nombre Jon Kabat-Zinn, puso en marcha lo que acabó siendo uno de los movimientos más revolucionarios de las neurociencias. Acuñó el término *mindfulness*, posteriormente traducido al castellano como *atención plena* para definir: "*La capacidad de prestar atención intencionadamente a lo que ocurre en el presente sin juzgar"* (49).

Kabat-Zinn, recopiló y protocolizó una serie de prácticas meditativas extraídas de la tradición budista y zen en un programa que denominó MBSR (*Mindfulness Based Stress Reduction*) e inició su impartición en una unidad creada al efecto en el Hospital General de Massachusetts, dependiente de la Universidad de Harvard (50). El MBSR se ensayó allí con buenos resultados en pacientes con dolor crónico (51) y como terapia coadyuvante en el blanqueamiento de la psoriasis (52).

Posteriormente se describió su aplicación como método para mejorar la calidad de vida de los pacientes oncológicos (53-54). Y se utilizó también con éxito en un sinnúmero de ensayos en los que p.e., resultó ser tan eficaz en la regulación de la hipertensión (55-57) que el Colegio de Médicos de Norteamérica lo recomienda como primera línea de tratamiento de este trastorno (58). Además de disminuir la percepción del dolor crónico (59-62) el MBSR es especialmente útil en el tratamiento del dolor de espalda crónico (63-65). Y, en general parece que la aplicación del MBSR, mejora la capacidad de afrontamiento, la calidad de vida y el bienestar en la mayoría de las enfermedades de larga duración (66-68).

Sin embargo, donde el MBSR ha resultado ser de especial utilidad, es en el terreno de la salud mental. La depresión es uno de los trastornos más frecuentes en la sociedad actual afectando al 5% de los adultos y al 5.8% de los adultos mayores de sesenta años (69). El 12% de los hombres y el 20% de las mujeres sufrirá una depresión a lo largo de su vida (70) y en un número importante de los casos, la depresión persistirá durante uno o dos años, o reaparecerá después de haber remitido (71-72).

Un programa derivado del *mindfulness*, el MBCT (*Mindfulness Based Cognitive Therapy*), (73) se ha ensayado con éxito en el tratamiento de la depresión mayor (74). El tratamiento es especialmente eficaz en las personas que han experimentado más de una depresión y en la prevención de las recidivas (75-77). El cultivo de la atención plena al momento presente, evita la sobre-identificación con las distorsiones cognitivas acerca del valor propio y también, previene la rumiación, que son la base del proceso depresivo (78-79). La eficacia de la utilización del MBCT para el tratamiento de la depresión y sus recidivas lo ha convertido en el tratamiento de primera línea para los trastornos del estado de ánimo en el Reino Unido (80).

La prevalencia de los trastornos de ansiedad es, como en el caso de aquellos que afectan al estado de ánimo, muy alta. Alrededor de un 3,6% de la población mundial sufre un trastorno de ansiedad, con una desigual distribución entre los géneros, 4,6% mujeres y el 2,6% varones (81). Al igual que en la depresión, el MBSR ha mostrado ser eficaz en la reducción de los trastornos de ansiedad (82-83), incluyendo la ansiedad generalizada (84), la ansiedad social (85) o el trastorno obsesivo compulsivo (86).

También parece ser útil para disminuir la ansiedad asociada a un buen número de situaciones y estados fisiopatológicos como los accidentes cerebro-vasculares (87), la migraña (88). El MBSR, alivia la ansiedad durante la menopausia (98) y en los trastornos del espectro autista (90), así como la ansiedad asociada a la quimioterapia (91).

En los últimos veinte años, y dada la eficacia probada del MBSR, se han desarrollado otras intervenciones basadas en el *mindfulness* (MBI), entre las que además del MBCT que forma parte de la tercera generación de terapias cognitivo-conductuales (92), destaca el *Mindful Eating* (93-94) que ha demostrado su eficacia en los trastornos de la alimentación y la *Mindfulness Self-Compassion* (MSC), de la que hablaremos en la siguiente sección.

En cuanto a los mecanismos neurales implicados en los efectos de las MBI, no son totalmente conocidos. El estrés, la ansiedad y la depresión, producen una disminución en las conexiones entre la región ventrolateral de la corteza prefrontal y la amígdala cerebral que experimenta hipertrofia, lo que resulta en una disfunción del eje hipotálamo hipofisario adrenal y una activación del simpático. Por el contrario, el hipocampo, la región del cerebro en la que se almacena la memoria de los hechos y su contexto, sufre atrofia y alteraciones en sus conexiones con la amígdala (95-97).

La práctica de la meditación *mindfulness*, podría actuar revirtiendo total o parcialmente esos cambios. De hecho, imágenes obtenidas por resonancia magnética funcional en pacientes con ansiedad generalizada, antes y después de haber practicado durante las ocho semanas del MBSR, muestran una disminución de la actividad de la amígdala y un aumento de la de la región ventrolateral prefrontal de la corteza cerebral, así como un aumento de la conectividad entre la corteza prefrontal y la amígdala (98).

En términos generales, la resonancia magnética funcional ha mostrado que la meditación *mindfulness*, produciría cambios en la DMN, disminuyendo la conectividad con las regiones relacionadas con la auto-referencia y la evaluación emocional e incrementando las conexiones con la corteza prefrontal dorsomedial, lo que probablemente refleja los cambios en la atención al momento presente que experimentan los practicantes de *mindfulness*.

Uno de los resultados de la práctica de las MBI, es el aumento en la atención interoceptiva de las sensaciones corporales, lo que sugiere que tendría que existir un reclutamiento de las regiones corticales (área dorsomedial prefrontal e ínsula) implicadas en la percepción interoceptiva, del mismo modo que sucede con las correspondientes áreas en la percepción sensorial externa. Dicho aumento ha sido también confirmado por resonancia magnética funcional.

Los estudios realizados para medir el grosor de la corteza cerebral, han mostrado un aumento en las regiones anteriores del cerebro en particular la corteza prefrontal media y superior, el extremo temporal así como la corteza temporal medial e interna. Estos y otros hallazgos obtenidos con técnicas de imagen cada vez más sofisticadas y precisas, habrán de explicar las bases neurales de los cambios en la atención, cognitivos, conductuales y emocionales en respuesta a las MBI (99-100.)

5.- Qué es la autocompasión

Autocompasión es la habilidad de proporcionarse a uno mismo apoyo y consuelo cuando se sufre o se experimenta dolor, independientemente de si este es causado por los propios errores o deficiencias, o por circunstancias externas. También podría definirse como la compasión hacia el sufrimiento, dirigida hacia nosotros mismos.

El concepto hunde sus raíces en la filosofía budista (101). Desde la perspectiva budista, la compasión es omnidireccional e incluye a todos los seres humanos, y desde una perspectiva occidental podría ser definida como, "*el sentimiento que surge cuando se presencia el sufrimiento de otros y que da lugar a la motivación para aliviarlo*" (102). El sentimiento es cálido y amable en lugar de frío y enjuiciador y debe llevar unido el deseo de ayudar y no hacer daño. Pero para poder experimentar la compasión es necesario estar dispuestos a mirar el sufrimiento, por incómodo que esto nos resulte. El estar presente con la incomodidad, sin evitarla o resistirla, requiere *mindfulness*. Y por último es inseparable de la capacidad para sentir compasión, la conexión con los otros, en lugar del aislamiento.

Las mismas condiciones se aplican a la autocompasión, aunque si bien es cierto que la autocompasión es tierna y nutritiva cuando se dirige a promover la auto-aceptación o a calmar el sufrimiento; también puede adoptar una forma feroz y agresiva, cuando el objetivo es la autoprotección, la satisfacción de una necesidad importante o la motivación para conseguir un cambio (103).

La autocompasión puede definirse como un continuum bipolar, una construcción que engloba la existencia de dos cualidades diferentes que se oponen una a otra (104), desde la respuesta no compasiva a la compasiva (105). La autocompasión se definiría entonces como la suma de tres continuum bipolares:

Autoamabilidad versus Autocrítica:

Cuando un familiar o amigo pasa por un momento difícil, es normal sentir el impulso de ser amable y ofrecer apoyo. Sin embargo, la voz que utilizamos para tratar a otros, no es la misma que usamos con nosotros mismos en la mayoría de las ocasiones. La tendencia a la autocrítica es muy fuerte en nuestra sociedad. Pero para desarrollar la autocompasión esa voz ha de dejar de ser autocrítica, y no solo eso ha de ser amable y mostrar preocupación por el sufrimiento propio. Y, no solo tratar de ser amables para hacer desaparecer el sufrimiento, y para obviar nuestros errores o nuestras faltas, sino también, porque reconocemos ser importantes para nosotros mismos.

Humanidad compartida versus Aislamiento:

Cuando cometemos errores o nos sentimos inadecuados, tendemos a pensar que somos los únicos y que nadie más comete nuestros errores o tiene nuestras faltas. Este no es un

proceso lógico, sino una reacción emocional que estrecha nuestro campo de mira y distorsiona la realidad. Actuamos en definitiva como si algo en nosotros fuera defectuoso, olvidando que todos tenemos partes vulnerables, en especial cuando se trata de enfrentar las dificultades. El cultivo de la autocompasión, nos hace capaces de reconocer que todos los seres humanos nos enfrentamos en un momento u otro a problemas y dificultades. De hecho, la existencia de dificultades en la vida es casi una seña de identidad de nuestra pertenencia a la especie humana. La compasión se expresa, por definición, en relación con los otros. Cuando podemos recordar nuestra humanidad compartida, disminuye o desaparece el sentimiento de aislamiento y la carga adicional al sufrimiento que sentirse solo conlleva.

Mindfulness versus Sobre-identificación:

Para poder dirigir la compasión hacia nosotros mismos, hemos de estar dispuestos a prestar atención a nuestro dolor y sufrimiento. La atención plena al momento presente previene la evitación y la exageración (106). No podemos sentir compasión por nosotros mismos, si no reconocemos nuestro sufrimiento. O si lo reconocemos, pero con resistencia y lucha, nuestra atención acaba siendo tan absorbida por el proceso que perdemos la perspectiva de lo que realmente nos está sucediendo, y entramos en un proceso de evitación continua o de sobre-identificación. Este proceso inevitablemente conduce a la rumiación, lo que a su vez exagera la autocrítica y la narrativa negativa. Es por eso que el *mindfulness* es el pilar de la autocompasión (79).

En los veinte años transcurridos desde la primera definición del concepto de autocompasión y la construcción de una escala (SCS) que mide los niveles de la misma (107-108), los hallazgos acerca de los efectos del cultivo de la autocompasión han experimentado un crecimiento exponencial. La SCS ha mostrado ser útil y válida para medir autocompasión (109) y capaz de discriminar la autoestima (110); la autocrítica (108) y las tendencias al neuroticismo (111). Existe asimismo una forma corta de la SCS, la S-SCS, que puede ser utilizada para medir la autocompasión en el momento presente (112).

Estas herramientas, han permitido desarrollar otras destinadas a inducir y cultivar una mente autocompasiva (113) y estudiar el impacto de los niveles de autocompasión en el bienestar (114-115). Sin embargo, los hallazgos más importantes se han realizado en el campo de la psicopatología. Los meta-análisis realizados en amplias poblaciones tanto de

adultos como de adolescentes, han encontrado efectos moderados o grandes que correlacionan de forma inversa los niveles de autocompasión con estados patológicos como la depresión, la ansiedad, el estrés o las conductas autolíticas (114, 116-119). Por el contrario, el desarrollo de buenos niveles de autocompasión, mostró ser un factor predictivo de disminución de la ansiedad, la depresión y el estrés, hasta seis meses después de la intervención (120). Y los aumentos en la autocompasión han sido relacionados con menor incidencia de psicopatologías y sentimiento de soledad durante períodos de hasta cinco años (121).

Al menos un meta análisis ha mostrado que la autocompasión reduce moderadamente los síntomas del estrés postraumático (122) y otro de mediana a robusta significación, que es capaz de disminuir los desórdenes alimentarios y la preocupación por la imagen corporal que los acompaña (123). En una revisión sistemática, la autocompasión se relacionó con una disminución de la ideación suicida y el daño autoinfringido (124).

En vista de las anteriores y muchas otras evidencias que sería largo y tedioso citar, parecería que la autocompasión es algo más que una buena idea. Existe y es una herramienta útil para aliviar el sufrimiento, disponible para cualquiera en cualquier momento. No es física nuclear, puede aprenderse y practicarse, solo hace falta para ello usar la compasión innata con la que tratamos a otros, con nosotros mismos. Existen al menos dos tipos de intervenciones clínicas que han demostrado su utilidad en el desarrollo de la autocompasión y los beneficios que ello conlleva.

La terapia enfocada a la compasión (CFT) basada en la terapia cognitivo-conductual y la psicología budista, pertenece a las llamadas terapias cognitivo conductuales de tercera generación y fue desarrollada por Paul Gilbert (125). Originalmente estaba orientada al tratamiento clínico de la vergüenza y la culpa (126). Los objetivos de la terapia son ayudar a extender la calidez y la comprensión hacia uno mismo, cuidar del propio bienestar, ser consciente de las propias necesidades, aprender a tolerar el malestar y reducir la autocrítica. Todo ello destinado a cambiar patrones de comportamiento que han sido adquiridos y reforzados desde la infancia.

El programa de Gilbert está destinado al tratamiento clínico, pero Neff y Germer, desarrollaron un programa para el entrenamiento de la autocompasión en poblaciones sin patologías. El MSC, es un programa de ocho semanas con sesiones de dos horas y media cada semana y un retiro de medio día. Incluye ejercicios escritos y prácticas de meditación

formal e informal, con las que se entrena tanto el *mindfulness* como pilar básico de la autocompasión, como los demás componentes de la misma (127). En el primer estudio realizado con el MSC, pudo observarse que en los participantes, aumentaron los niveles de autocompasión, de compasión hacia los demás, *mindfulness* y satisfacción con la vida. También disminuyeron los niveles de depresión, ansiedad, estrés y evitación emocional. Todos los efectos se mantuvieron durante el seguimiento de seis meses y un año (128).

6.- Qué no es la autocompasión

El concepto de autocompasión es con frecuencia difícil de interpretar con precisión para las mentalidades occidentales, por eso nos parece necesario hacer unas cuantas puntualizaciones acerca de lo que no es la autocompasión.

Autocompasión no es lo mismo que autoestima

La autoestima hace una valoración de la persona en relación a una serie de valores personales o por comparación con los demás. Aunque la autoestima es importante para una buena salud mental, exige casi siempre estar en la posición de ser especial y por encima de la media. Esto puede llevar a un elevado narcisismo con percepciones irreales de uno mismo, e incluso a la aparición de prejuicios y maltrato hacia otros. Además, dado que la autoestima depende de la autoevaluación, está sujeta a variaciones dependientes de los éxitos o fracasos en cada momento (129).

La autocompasión por el contrario no utiliza el enjuiciamiento ni la evaluación. Es una forma de relación con aceptación y amabilidad de la experiencia vital que cambia de momento a momento. No precisa de la comparación con otros para sentirse mejor, sino que asume la imperfección común a todos los seres humanos. Tiene los mismos beneficios para la salud mental que la autoestima, pero sin sus complicaciones potenciales (110).

La autocompasión no es debilidad

Puede incluso llegar a ser una fortaleza extrema y agresiva para enfrentarse a los retos vitales. Proporciona una gran resiliencia frente a situaciones de conflicto y sufrimiento como el divorcio (130), la violencia doméstica (131), la violencia sexual (132), los desastres naturales (133), la educación de hijos con problemas (134) o los prejuicios de

los demás (135). La autocompasión proporciona asimismo mayor fuerza para afrontar el dolor crónico y enfermedades como el cáncer o la diabetes (136-138).

La autocompasión no es autocomplacencia

La autocomplacencia con los propios actos puede llevarnos a veces a conductas que a corto plazo son placenteras, pero a medio o largo plazo serían perjudiciales. La autocompasión implica siempre el cuidado hacia nosotros mismos y en consecuencia la evitación de conductas dañinas. Por eso unos buenos niveles de autocompasión se asocian siempre con hábitos y conductas que promueven la salud, como reducir el hábito de fumar, hacer ejercicio o una buena dieta (139-141).

La autocompasión no es egoísmo

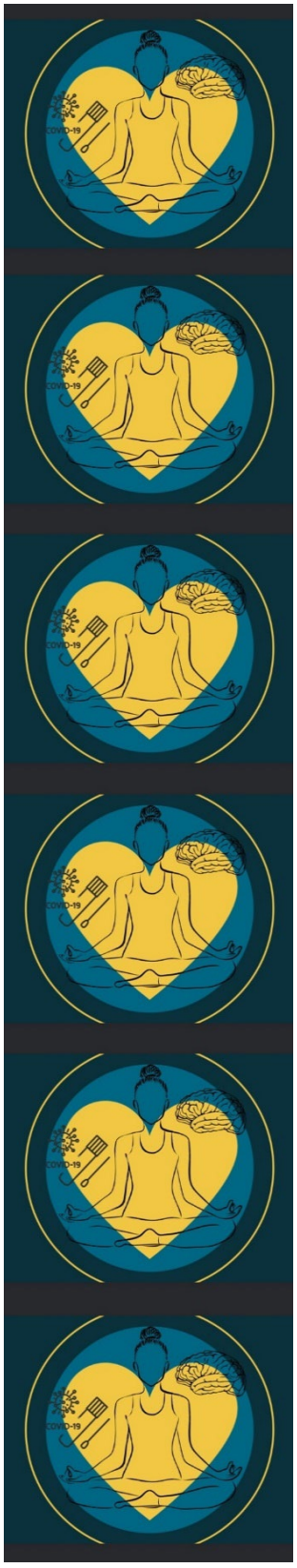
Cuidar de uno mismo no implica olvidarse de otros. El autocuidado aumenta la tendencia a cuidar de otros y la autocompasión aumenta la conexión con otras personas (142). Aunque es habitual que las personas compasivas no sean autocompasivas (143-144), la autocompasión siempre aumenta la tolerancia con las imperfecciones de los otros y la identificación con sus debilidades (144-146). Las personas autocompasivas se conectan y aceptan mejor a sus parejas (147) y las parejas de personas autocompasivas, manifiestan sentirse comprendidas y aceptadas (148). En general, las personas autocompasivas, establecen relaciones en las que apoyan a familiares y amigos aceptando sus errores (149-150). La autocompasión es asimismo una importante cualidad para las personas que trabajan proporcionando cuidados (151). Tanto en el caso de aquellos que tienen a su cargo a niños con minusvalías como a ancianos, la autocompasión disminuye el estrés, la depresión y la sensación de carga, al mismo tiempo que aumenta la esperanza y las estrategias de afrontamiento (152-153). En cuanto a aquellos que profesionalmente se ocupan de otras personas, como terapeutas, médicos, enfermeras, educadores o voluntarios, el aumento de la autocompasión, disminuye la fatiga del cuidador, el *burnout* y el estrés (154-156). Así pues, lejos de aumentar el egoísmo, la autocompasión permite movilizar recursos emocionales para ayudar a otros.

La autocompasión no disminuye, aumenta la motivación

De hecho, aumenta la motivación como consecuencia del autocuidado, el deseo de alcanzar el bienestar y la pérdida del miedo al fracaso y a ser poco adecuados. La autocompasión se asocia negativamente con el perfeccionismo que da lugar a

desadaptación y positivamente con buenos resultados en las tareas emprendidas y niveles altos de iniciativa. Por eso, las personas autocompasivas tienen metas altas y trabajan para alcanzarlas, pero reconocen y aceptan que no siempre se puede alcanzar lo deseado (157-158). La autocompasión se asocia positivamente con el deseo de aprender y crecer y negativamente con la dependencia de la propia imagen (159). Las personas autocompasivas están motivadas para perseguir objetivos por propia convicción, no para obtener la aprobación social, lo que se traduce en una mayor confianza en sí mismas (160). La motivación autocompasiva evita las consecuencias negativas de la autocrítica, lo que se traduce en menos ansiedad y menos dilación hacia la tarea a ejecutar (161). Finalmente, las personas autocompasivas tienen una mayor facilidad para aprender de los fallos y menos miedo al fracaso, lo que aumenta sus posibilidades de volver a intentar una tarea fallida (162-163).

OBJETIVOS



La hipótesis para la realización de esta Tesis Doctoral fue que el aislamiento producido por el confinamiento, daría lugar a un empeoramiento en la salud mental de la población española sometida al mismo, y que la atención plena y la autocompasión podrían ser factores que disminuyeran los efectos del mencionado confinamiento.

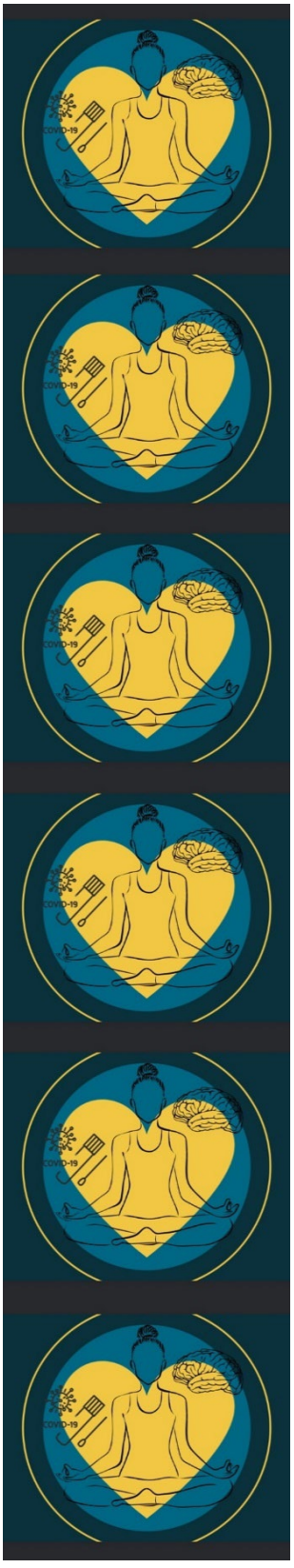
Por ello objetivo global del trabajo realizado, fue probar la existencia de un deterioro de la salud mental durante la pandemia por CoV-19 y su relación con los niveles de atención plena y autocompasión para lo que se establecieron tres objetivos concretos:

1. Realizar un estudio transversal de los niveles de ansiedad, depresión y estrés en una muestra discreta de la población y correlacionarlos además de con los niveles de autocompasión, con diferentes variables psicosociales y sociodemográficas como el género, nivel económico, empleo, presencia o no de niños en el domicilio, presencia o no de otras personas, tipo de vivienda, existencia de síntomas de CoV-19 en las dos semanas previas o de trastorno mental anterior al confinamiento.

2. Realizar un estudio transversal para analizar el valor predictivo de la autocompasión en la aparición de los trastornos mentales durante el confinamiento y cuál de los tres componentes de la autocompasión: auto-amabilidad, humanidad compartida y atención plena tendría mayor peso como vaticinador de la aparición, o no de los mencionados trastornos mentales.

3. Probar la eficacia de la atención plena y la autocompasión, en la promoción del bienestar y la prevención del distrés emocional en una situación psicosocial de alto nivel de estrés como fue el confinamiento. Con un ensayo aleatorio de dos brazos en el que un grupo recibiría diariamente a través de zoom una intervención destinada a potenciar la atención plena y la autocompasión (SCMI) y el otro sería el control en lista de espera.

PUBLICACIONES



El trabajo realizado para la presente Tesis Doctoral, está encuadrado según la normativa de la CNEAI, BOE 21-12-2022, nº 305, pp. 178970-71, en:

Campo 7. Ciencias Sociales, Políticas, del Comportamiento y de la Educación
Subcampo 7.1 Ciencias Sociales, Políticas, del Comportamiento y de Estudios de Género.

3. Entre las aportaciones se valorarán preferentemente:
a) Los artículos publicados en revistas de reconocida valía, aceptándose como tales las incluidas en los listados por ámbitos científicos del «Journal Citation Reports» (JCR), Social Sciences Edition y Science Edition.
b) Asimismo (sin que necesariamente se valoren por igual), se valorarán los artículos publicados en revistas situadas en posiciones relevantes de los listados de «Scimago Journal Rank» (SJR).

Los artículos que justifican la presentación de esta Tesis en la modalidad por compendio son:

COVID-19 Lockdown and Mental Health in a Sample Population in Spain: The Role of Self-Compassion
María Elena Gutiérrez-Hernández , Luisa Fernanda Fanjul, Alicia Díaz-Megolla, Pablo Reyes-Hurtado, Jonay Francisco Herrera-Rodríguez, María del Pilar Enjuto-Castellanos and Wenceslao Peñate
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Cuartil: Q1 ; IF: 4.61 (Journal Citation Reports, Social Sciences Citation Index, 2021)
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María Elena Gutiérrez-Hernández, Luisa Fernanda Fanjul Rodríguez, Alicia Díaz Megolla, Cristián Oyanadel and Wenceslao Peñate Castro
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The Effect of Daily Meditative Practices Based on Mindfulness and Self-Compassion on Emotional Distress under Stressful Conditions: A Randomized Controlled Trial
María Elena Gutiérrez-Hernández, Luisa Fernanda Fanjul Rodríguez, Alicia Díaz Megolla, Cristián Oyanadel and Wenceslao Peñate Castro
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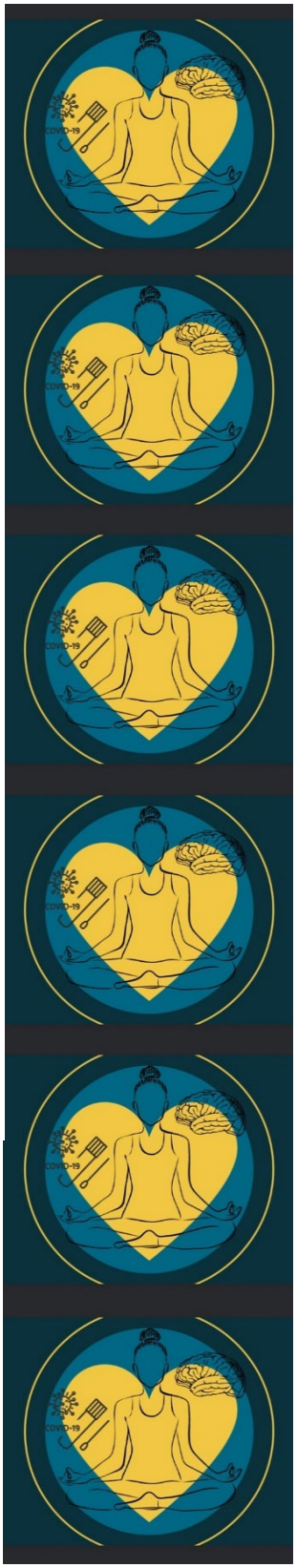
Cuartil Q2 (Scimago Journal Citation 2022) Categoría Clinical Psychology

OBJETIVO 1



COVID-19 Lockdown and Mental Health in a Sample Population in Spain: The Role of Self-Compassion.
Int. J. Environ. Res. Public Health. 2021; 18: 2103-17.

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Article

COVID-19 Lockdown and Mental Health in a Sample Population in Spain: The Role of Self-Compassion

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Abstract: Previous data support that mental health is affected during pandemic and lockdown situations. Yet, little is known about the positive factors that protect mental health during a lockdown. This study analyzed mental health status—particularly emotional problems—and the role of several sociodemographic and clinical variables; it also explored whether there is a positive relationship between self-compassion and better mental health status. A cross-sectional study was carried out in Spain with the participation of 917 fluent Spanish-speaking residents in a survey conducted approximately midway through the COVID-19 lockdown. The survey tested for anxiety, depression, and stress using the Depression Anxiety Stress Scale-21 (DASS-21), the Self-Compassion Scale (SCS) to measure self-compassion values, and the Perceived Vulnerability to Disease Questionnaire (PVDQ) to assess the degree of risk perceived by participants. Around 30% of the individuals surveyed (recruited by snowball sampling) showed clinically significant levels of anxiety, depression, and stress. The variables most frequently associated with anxiety, depression, and stress were low levels of self-compassion, age, gender, previous physical symptoms, a previous mental disorder, being a student, and perceived vulnerability to disease. We discuss the hypothetical protective role against anxiety, depression, and stress of certain skills such as self-compassion and the possibility that increasing self-compassion may be used to promote better mental health in similar situations.

Keywords: mental health; emotional disorders; self-compassion; COVID-19

1. Introduction

Four cases of atypical pneumonia caused by a coronavirus were brought to light in the Chinese city of Wuhan at the end of December 2019. The new coronavirus was assigned the name SARS-CoV-2 because of its similarity to the virus responsible for the outbreak of the severe acute respiratory syndrome (SARS) respiratory infection in 2002 and 2003 [1]. Between December 2019 and March 2020, coronavirus disease (COVID-19) spread quickly throughout Asia and Europe. In March 2020, cases were recorded in every continent and the WHO declared COVID-19 a pandemic. Imposed lockdown of the general population became widely used as a strategy for containing the spread of the disease. This lockdown of large masses of the population has had serious repercussions at all levels, affecting the health of the population and the economy and social life in general [2].

The epidemiological, clinical, and therapeutic aspects of COVID-19 were all given emergency status, with a significant scientific response triggered around the world to find ways to stop the pandemic, save as many lives as possible, and prevent new outbreaks. However, there are harmful social contexts with the property of significantly altering normal life. These alterations also affect mental health. The effects of the pandemic on mental health, both of the frontline health workers actively engaged in the struggle against the disease and of the general population under lockdown, have also been a major area of research as some of the most significant side effects of COVID-19 [3]. Several studies [4–14] have reported a considerable rise in adult mental disorders during the COVID-19 lockdown; children's psychological well-being has also been found to be seriously affected [15].

The mental disorders most frequently reported are anxiety and depression. Depression is a leading cause of disability and has a major impact on overall health worldwide, leading to suicide and self-harm in its most extreme cases (World Health Organization, n.d.). Anxiety is also widespread and is the sixth major cause of illness [16]. The fear generated by the pandemic and the lockdown situation may exert a specific pressure on the emotional distress of many people, over and above the stress usually generated by fear and lockdown [3]. Even on a lesser scale, it may affect individuals' mental state, causing them to dwell obsessively on the fearful possibilities of infection, making them irritable and causing loss of sleep or insomnia [17].

Researchers have also explored other extrinsic factors in addition to emotions that can predispose or protect individuals against anxiety and depression, mostly sociodemographic factors (e.g., isolation, characteristics, and physical conditions of the housing in which lockdown was spent) and previous medical conditions. Of all these, isolation and lessened social interaction have been pinpointed as critical elements in spurring or worsening emotional problems, independently of the age group involved [18,19].

Brooks et al. (2020) reported the pivotal role of isolation, often associated with negative psychological effects, and considered fear of and obsession with the virus as the most frequent variable in lockdown [20,21]. Because those contexts are harmful by themselves and cannot be reinterpreted, psychological processes based on acceptance could be a useful strategy to cope with mental problems. However, the studies conducted have seldom analyzed the positive psychological variables that allow people to be resilient. From a therapeutical point of view, there are several psychological mechanisms and processes that regulate emotional distress. Cognitive behavior analysis makes it possible to explore the cognitive changes caused by emotional problems. It eliminates the cognitive distortions associated with emotional distress through cognitive restructuring. In the current situation, in which the virus and the lockdown are real, however, individuals' thought processes cannot be considered to constitute a distortion of reality [22]. Taking this into account, acceptance processes—related to third-generation therapies such as acceptance and commitment therapy (ACT), mindfulness, and self-compassion—may work better to relieve distressing emotional states. Because these critical situations (i.e., the pandemic and the lockdown) are harmful by themselves, painful emotions are part of their consequences on human life. The common factor in third-generation therapies is the acceptance of emotional suffering. Acceptance therapies can teach people to become aware of their emotions and learn to relate to them in a more balanced way [23]. Self-compassion may be a resource to promote acceptance. Considering this, the present study explored mental health problems during the COVID-19 pandemic, their sociodemographic and psychological predictive factors, and particularly whether self-compassion played a significant role among these factors.

Self-compassion, defined as the ability to treat suffering sympathetically and with the awareness that it is part of being human, recognizes that suffering and our imperfection are part of the human experience. It involves being touched by and open to one's own suffering, not avoiding or disconnecting from it [24].

Self-compassion has been associated with lower levels of emotional distress [25,26]. In fact, training in self-compassion has proved to be effective in reducing emotional distress [27–29]. Moreover, several systematic reviews and meta-analyses have evidenced that practicing mindfulness and self-compassion is also effective for other mental problems and disorders [30–36].

In light of previous studies, the main aim of the present research was to assess emotional distress during the COVID-19 lockdown, measuring anxiety, depression, and stress levels. We also intended to explore the relationship between sociodemographic, clinical, and psychological variables, on one hand, and the level of emotional distress, on the other. The following sociodemographic variables were taken into account: age, gender, academic background, employment status, physical distress symptoms, any previous mental disorders, whether individuals spent the lockdown alone or accompanied and with children or not, previous experience with meditation, and the physical characteristics of the housing where the lockdown was spent. The psychological variables assessed were fear of infection (i.e., perceived vulnerability to the disease) and self-compassion. These variables were measured to identify possible predictive variables of the presence of clinical levels of anxiety, depression, and stress.

2. Materials and Methods

2.1. Participants

A non-representative convenience sample was used. The sample size was 917 individuals, mostly women (71.8%). The average age of participants was 42.55 years old (SD = 14.29). The total group ranged between 18 years old and 86 years old. Regarding academic background, 71% of participants had university studies, 22% had secondary studies, and the remaining 7% had primary studies. Almost half of the sample group was engaged in active employment (28.52% participants were teleworking, 12.29% worked outside the home, and 16.91% were healthcare workers), 12.18% were students, and the rest were in various states of inactivity (unemployed, furloughed, on sick leave, permanently disabled or retired).

Inclusion criteria were being a resident in Spain during the lockdown, being an adult (18 years old or older), having at least a primary education level, and having a good understanding of the Spanish language (reading).

2.2. Materials

Form. A Google form was used to collect information on the variables gender, academic background, employment status, existence of physical symptoms in the two weeks before the study, previous history of mental disorders, whether the lockdown was spent alone or not, whether children were present, previous experience with meditation or not, and the characteristics of the housing where the lockdown was spent. The form included the following inventories:

Depression Anxiety Stress Scale-21 (DASS-21) [37]. This is a self-applied questionnaire with three subscales (i.e., stress, depression, and anxiety) composed of seven items each. Responses are given on a four-point Likert scale ranging from 0 (nothing) to 3 (a lot). Scores on each subscale range from 0 to 21. The version used was a validated Spanish translation [38] with a total alpha coefficient of 0.96 and an equally high alpha coefficient for the depression (0.93), anxiety (0.86), and stress (0.91) subscales. Overall, the scales in the original English and the Spanish version have sound psychometric properties [39,40]. Our sample had a total Cronbach alpha index of 0.94, and the subscales had the following values: depression (0.85), anxiety (0.83), and stress (0.90).

Perceived Vulnerability to Disease Questionnaire (PVDQ) [41]. This is also a self-reported questionnaire made up of two subscales: perceived infectability (seven items) and germ aversion (eight items). Responses are provided on an eight-point Likert scale ranging from 1 (totally disagree) to 7 (totally agree). We used the validated Spanish version

[42], which had a total Cronbach alpha index of 0.69 and alpha indices of 0.78 for the perceived infectability subscale and 0.59 for the germ aversion subscale. The validated Spanish version had excellent test-retest reliability (r = 0.95 for the perceived infectability subscale and r = 0.98 for the germ aversion subscale). Our sample had a total Cronbach alpha index of 0.76; the alpha indices of the perceived infectability and germ aversion subscales were 0.85 and 0.66, respectively.

Self-Compassion Scale (SCS) [43]. This is a questionnaire covering three dimensions: Self-Kindness versus Self-Judgment, Common Humanity versus Isolation, and Mindfulness versus Over-Identification. There is a short version of the original scale [44] with sound psychometric qualities [45]. The short version is made up of 12 items with responses measured on a five-point (5) Likert scale ranging from 1 (hardly ever) to 5 (almost always). We used the validated Spanish version of the short version of the SCS [46], which has a Cronbach alpha index of 0.85. Our sample had a Cronbach alpha index of 0.84.

2.3. Design

We used a cross-sectional design and recruitment was conducted by online snowball sampling. Prospective participants were contacted through social media and asked to recruit other participants. The target population was people residing in Spain during the time period of the study, from 14 April 2020 to 21 April 2020 (lockdown was imposed on 13 March 2020 and lifted on 15 May 2020, so the study took place approximately halfway through). The lockdown was strict throughout Spain with people only allowed to leave their homes to go to work, buy medicine or staple goods, or attend to emergencies. All non-essential establishments were closed, including schools. The variables considered as foreseeably detectable were depression, anxiety, and stress. The variables used to tally the results were age, gender, academic background, work status, physical symptoms of the virus in the two weeks prior to the study, previous history of mental disorders, whether the lockdown was spent alone or not, whether children were present or not, previous experience with meditation, the characteristics of the housing where the lockdown was spent, fear of catching the virus, and levels of self-compassion.

2.4. Procedure

The questionnaires were made available to the target sample (i.e., fluent Spanish-speakers who were residents in Spain at the time of the lockdown) by the researchers between 14 April 2020 and 21 April 2020. Researchers' contacts were then asked to forward the questionnaires to their own families and acquaintances. The completed forms were returned before 21 April 2020. All questionnaires were self-applied and anonymous to respect confidentiality.

2.5. Ethics

The project was approved by the Medical Research Ethics Committee of the university hospital "Complejo Hospitalario Universitario Insular Materno-Infantil." The surveys contained information about the goals of the study for participants to read. All participants gave their signed informed consent in compliance with the Spanish Data Protection Act and in line with the rights contemplated under the Declaration of Helsinki.

2.6. Data Analysis

R Core Team 2020 statistics software (R Foundation for Statistical Computing, Vienna, Austria) was used to process the results. Descriptive data were calculated with frequency analysis. Logistic regression models were used to chart the variables depression, anxiety, and stress. Cases and non-cases were determined according to the presence of clinically significant scores. Specifically, cases were considered if participants were in-

cluded in slight, moderate, serious, or severe categories. A univariate and direct regression method was used. All coefficients with a probability equal to or less than 0.05 were considered statistically significant.

3. Results

First, social and clinical sample characteristics were described. These data are summarized in Table 1. Most participants reported not having any previous mental disorders and living in apartment buildings with more than one adult. Moreover, around one-third of participants experienced physical symptoms in the previous two weeks, were living with children and had some experience with meditation.

Table 1. Social and clinical characteristics of the sample (n = 917).

Variables	Categories	Frequency	%
Previous history of mental disorders	No	853	93.02
	Yes	64	9.98
Physical symptoms in the previous two weeks	No	580	63.25
	Yes	337	36.75
Characteristics of the place of residence	Apartment/townhouse	771	84.08
	House with garden estate	146	15.92
Number of adults in lockdown	1	151	16.47
	More than one	766	83.53
Presence of children in lockdown with the participant	No	590	64.34
	Yes	327	35.66
Previous experience with meditation	No	583	63.58
	Yes	334	36.42

The next step was to analyze the presence of emotional disorders. The three categories of the DASS-21 (depression, anxiety, and stress subscales) were used. The average scores were 5.24 for anxiety (SD = 6.29), 7.52 for depression (SD = 7.14), and 11.29 for stress (SD = 8.6). As shown in Table 2, the percentage of clinically significant levels amounted to 30% over the whole sample group. Clinical significance was considered when participants had a non-normal score in each subscale (i.e., slight, moderate, serious, or severe levels).

Table 2. Percentages per category and variable using the Depression Anxiety Stress Scale-21 (DASS-21) (n = 917).

Clinical Level	Anxiety (%)	Depression (%)	Stress (%)
NORMAL	72.96	68.7	73.06
SLIGHT	6.65	13.96	10.14
MODERATE	12	12.1	9.05
SERIOUS	3.49	2.84	5.34
SEVERE	4.91	2.4	2.4

The average result for the levels of self-compassion as measured by the SCS was 19.8 (over a range of 6–30) with a standard deviation of 4.4. The classification given to the sample results was LOW (for results below the average minus the standard deviation), NORMAL (for results equal to or above the average, factoring in the standard upper and lower deviations), and HIGH (for results above the average plus the standard deviation). Specifically, 8.07% were low, 44.93% were normal, and 47% were classified as higher than average in self-compassion. As regards the results of perceived vulnerability to disease (measured on the PVDQ),53.22% of participants were in the clinical range of germ aversion while only 20.5% were in the clinical range of perceived infectability.

Once the levels of anxiety, depression, and stress had been described, they were cross-referenced to the psychosocial and socio-demographic profiles to observe which, if any, of the variables bore an association with the mental state of the participant in lockdown. Three logistic regression models were designed to predict the anxiety, depression, and stress variables according to the profiles described above with the group split between individuals who did not show clinical levels and individuals who did, in line with the data already presented in Table 2. Tables 3–5 show the results of this analysis.

Table 3. Data of the univariate logistic regression analysis performed to predict the anxiety variable.

Variable	OR	95% CI	*p*-Value
Self-Compassion	0.84	0.8–0.87	**<0.001**
Germ Aversion	1.27	0.94–1.71	0.118
Perceived Infectability	1.93	1.36–2.73	**<0.001**
Age	0.99	0.98–1.0	**0.012**
Gender: Male	0.51	0.36–0.73	**<0.001**
Level of studies: Degree or Higher Studies	1 (ref)		
Secondary	1.11	0.77–1.59	0.56
Primary	0.93	0.48–1.71	0.828
Physical Symptoms: Yes	2.79	2.06–3.7	**<0.001**
Previous Mental Disorders: Yes	2.92	1.71–4.97	**<0.001**
No. of Adults in Lockdown: Alone	0.69	0.45–1.04	0.087
No. of Children: ≥1	1.15	0.84–1.56	0.387

Housing: House with Garden Estate	0.86	0.56–1.3	0.493
Meditation	1.16	0.85–1.57	0.343
Work Status: Health Worker	1 (ref)		
Student	1.99	1.16–3.34	**0.013**
On Sick Leave/Permanently Disabled/Retired	1.20	0.696–2.081	0.506
Teleworking	1.12	0.693–1.822	0.651
Working Outside the Home	1.30	0.735–2.274	0.369
Unemployed or Furloughed	1.09	0.647–1.829	0.756

Abbreviations: OR = odds ratio; CI = confidence interval; *p* = probability; ref = is the variable that is used as a comparator for the rest of the variables. Statistically significant *p*-Values are in bold font.

Table 4. Data of the univariate logistic regression analysis performed to predict the depression variable.

Variable	OR	95% CI	*p*-Value
Self-Compassion	0.76	0.72–0.79	**<0.001**
Germ Aversion	1.08	0.81–1.44	0.586
Perceived Infectability	1.42	1–1.99	**0.046**
Age	0.98	0.97–0.99	**<0.001**
Gender: Male	0.58	0.41–0.8	**0.001**
Level of studies: Degree or Higher Studies	1 (ref)		
Secondary	1.66	1.18–2.32	**0.003**
Primary	1.42	0.74–2.5	0.232
Physical Symptoms: Yes	2.84	2.12–3.82	**<0.001**
Previous Mental Disorders: Yes	4.51	2.63–7.96	**<0.001**
No. of Adults in Lockdown: Alone	0.96	0.65–1.54	0.835
No. of Children: ≥1	1.25	0.93–1.67	0.14
Housing: House with Garden Estate	0.8	0.53–1.18	0.273
Meditation	0.85	0.63–1.14	0.285
Work Status: Health Worker	1 (ref)		
Student	5.17	3–9.12	**<0.001**
On Sick Leave/Permanently Disabled/Retired	2	1.16–3.49	**0.014**
Teleworking	1.32	0.8–2.22	0.279
Working Outside the Home	1.96	1.11–3.48	**0.021**
Unemployed or Furloughed	2.33	1.4–3.93	**0.001**

Abbreviations: OR = odds ratio; CI = confidence interval; *p* = probability; ref = is the variable that is used as a comparator for the rest of the variables. Statistically significant *p*-Values are in bold font.

Table 5. Data of the univariate logistic regression analysis performed to predict the stress variable.

Variable	OR	95% CI	*p*-Value
Self-Compassion	0.84	0.77–0.83	**<0.001**
Germ Aversion	1.14	0.85–1.54	0.385
Perceived Infectability	2.21	1.56–3.1	**<0.001**
Age	0.97	0.96–0.98	**<0.001**
Gender: Male	0.38	0.26–0.55	**<0.001**
Level of studies: Degree or Higher Studies	1 (ref)		
Secondary	1.13	0.79–1.61	0.496
Primary	1.02	0.53–1.85	0.96
Physical Symptoms: Yes	2.76	2.04–3.75	**<0.001**
Previous Mental Disorders: Yes	2.3	1.34–3.91	**0.002**
No. of Adults Confined: Alone	0.65	0.42–0.98	**0.045**
No. of Children: ≥1	1.46	1.07–1.97	**0.015**
Housing: House with Garden Estate	1.05	0.7–1.56	0.806
Meditation	0.9	0.66–1.23	0.524
Work Status: Health Worker	1 (ref)		
Student	2.42	1.42–4.16	**0.001**
On Sick Leave/Permanently Disabled/Retired	0.89	0.5–1.57	0.684
Teleworking	0.94	0.58–1.55	0.817
Working Outside the Home	1.54	0.89–2.68	0.125
Unemployed or Furloughed	1.39	0.84–2.31	0.204

Abbreviations: OR = odds ratio; CI = confidence interval; p = probability; ref = is the variable that is used as a comparator for the rest of the variables. Statistically significant *p*-Values are in bold font.

Table 3 shows the results of the logistic regression analysis for the anxiety variable. As can be observed from the data, seven variables were considered to be significant predictors of anxiety—self-compassion, perceived vulnerability to disease, age, gender, previous experience of physical symptoms, history of previous mental disorders and being a student. Self-compassion levels were inversely related to anxiety levels, that is, participants without anxiety had higher self-compassion scores (OR < 1), and perceived vulnerability to disease was positively related to anxiety levels (OR > 1). Cases of anxiety were also predicted by age (i.e., there was a higher incidence in younger participants), gender (i.e., women), previous experience of physical symptoms, previous history of mental disorders, and the fact of being a student.

The predictive results for cases of depression (Table 4) were almost exactly the same for many variables except for the variables of secondary school studies and passive work status (i.e., on sick leave, permanently disabled, retired, furloughed, or unemployed).

The prediction of cases of stress (Table 5) followed a similar pattern to the trends in anxiety and depression but introduced two new variants—there were more cases of stress in people who lived with someone else or who shared their homes with children than in those who did not.

4. Discussion

The present study had two objectives, the first of which was to assess the levels of anxiety, depression, and stress in the local adult population during the COVID-19 lockdown. The second objective of the study was to explore which psychological factors and sociodemographic factors may be associated with these changes. The overall results showed that around 30% of participants reached clinical levels of anxiety, stress, and depression during the lockdown. The study also allowed us to identify predictive sociodemographic and psychological factors.

The clinical levels of anxiety, depression, and stress found in around one-third of the participants are broadly in line with other similar studies [4,8,13,47]. The bulk of these studies were conducted in China but there are also similar results from studies in Bangladesh [5], India [7], Italy [9], Vietnam [10], United Kingdom [12], and Spain [11,17].

Age and gender were the two main variables considered in all these studies. This study revealed that younger participants exhibited higher psychological distress, a result that is also in line with most published studies [48–52]. The reasons for this greater suffering among younger people may be that the crisis produced uncertainty about their academic and career possibilities (this is the second crisis that they face, the first being the economic crisis in 2008), and the fact that they are more dependent on social networks for their information and support, which may substantially increase the distress.

Men were found to be less psychologically distressed than women, also a recurrent feature found by most other studies [3,17,49,53]. This greater distress experienced by women may be accountable to their general greater psychological vulnerability to traumatic and adverse situations [54]. Having secondary or higher studies was associated with a higher level of depression, also consistent with other studies [47,55–58]. This may be because these participant groups have a greater awareness of the real health risks for themselves and their families and of the socioeconomic repercussions of the pandemic. In younger participants, being a student was linked to more symptoms of anxiety, depression, and stress, in line with other studies [5,13,17,51,59,60]. As noted previously, this may be due to the greater uncertainty generated by the pandemic on their future academic and career aspirations.

As regards health, the fact of having experienced physical symptoms in the weeks prior to the self-report also influenced the variables. This result is consistent with those of other studies [13,61,62]. Participants may have associated some of the physical symptoms with a possible SARS-CoV-2 infection. Additionally, the existence of a previous history of mental disorders was associated with higher levels of anxiety, depression, and stress [18,63–68]. In this regard, the pandemic and the lockdown may be stressful factors that produce instability in a previous mental condition [69–71].

In the area of social and work relations, it was logical to expect work status to be associated with the level of depression. There were more cases of depression among participants who were not engaged in active employment (i.e., people on sick leave, disabled, retired, unemployed, or furloughed). This is a constant in the literature on anxiety, depression, and stress [7,9,17,59]. People not actively engaged in employment under lockdown experience greater isolation, more inactivity, and usually have a lower income, all of which are factors that increase symptoms of depression.

Although the onset of emotional disorders may stem from an initial affective vulnerability [72], the experience of lockdown with children was associated with higher levels

of stress, as found in other studies [3,12,51,72,73]. Meeting children's needs in lockdown is likely to be a trigger for stress. It was surprising, however, to find that living without other adults around was associated with lower levels of stress, anxiety, and depression [51]. The family network and social interaction with its members are usually looked upon as a predictive factor of stress. Therefore, it may well be that the conditions of lockdown generate stressful family situations, turning what would normally be a hypothetical protective factor into a possible risk factor. Future research should be directed at analyzing the "other adult" component according to categories, such as parents, partners, and friends [55].

Another unexpected result was the fact that health workers did not report greater levels of stress, anxiety, or depression. This is commonly found in studies of this nature [61,70,74]. This apparently contradictory finding would probably be clarified by a more in-depth analysis of the type of health workers, and especially of their direct contact with patients with COVID-19, as has been reported by other studies of this type [4].

Perceived vulnerability to disease and levels of self-compassion, as was to be expected, were associated with levels of anxiety, depression, and stress. Perceived Infectability was associated with greater concern about COVID-19 [58] and heightened fear of infection, thereby constituting a risk variable that affects overall mental health [75] and specifically anxiety and depression [76,77] and stress.

Levels of self-compassion were related to lower levels of anxiety, depression, and stress in general and seemed to work as a protective factor. These results are consistent with those of previous studies that also used the DASS-21 scores [34]. People with higher levels of self-compassion react to adverse events with better emotional regulation [35].

The role played by self-compassion in resisting stress, anxiety, and depression during the COVID-19 pandemic and lockdown has not received the same depth of analysis as the other variables. Yet, when it has been explored, it has been found to be related to positive reaction and greater emotional balance [73,78].

There is solid empirical evidence that positive levels of self-compassion improve mental health [32–35,79–82] and lessen the negative consequences of psychological parameters such as stress, anxiety, and depression [28,31,34,83–89]. A review of the literature on epidemics that occurred in the last two decades shows that compassion is a positive strategy to deal with the negative impacts of these diseases [61]. Similar data show that self-compassion also acts as a protective factor in high-stress situations [90,91]. Self-compassion reduces vulnerability particularly in the presence of emotional disorders; in fact, there is a general model that shows that mindfulness and self-compassion are protective mechanisms against mental illness [24,43]. The effectiveness of self-compassion in emotion regulation may be due to its different components. In this regard, we consider that self-kindness can promote a psychological state of well-being. Common humanity may reduce the feeling of loneliness generated by the lockdown. Finally, mindfulness helps to identify distress in order to accept it. Obviously, these hypothetical differential implications of the components of self-compassion should be tested in future experimental studies.

This study has several limitations and shortfalls. Specifically, the information was obtained through self-reports without any control over the level of honesty of participants. It was a cross-sectional study carried out at a specific moment during the lockdown (approximately halfway through) and therefore does not give us a global picture of the total psychological distress of enforced lockdown during the pandemic. Longitudinal studies are required to explore how these results evolve over time. The sample was a convenience or snowball sample recruited online. Thus, it was a broad-ranging sample that is not representative of any particular target group and may have underrepresented older age groups since older people tend to use fewer digital devices.

Nevertheless, if considered with due caution, the results may have significant practical implications. The sociodemographic variables related to worse emotional adjustment to the situation make it possible to identify profiles of people at higher risk of experiencing anxiety, stress, depression, and related disorders. In addition, perceived infectability is a

vulnerability factor that creates a distortion, that is, an exaggeration of the degree of risk, and can therefore be approached using cognitive restructuring techniques. Self-compassion, as an emotion regulation strategy, can also be used to train specific acceptance skills, thus fostering emotional resilience.

Although public health resources cannot provide psychological assistance to the entire population**,** other more cost-effective short-term, group therapy and practical strategies could be implemented to reduce the levels of emotional distress. Mindful-self compassion fits those characteristics and this intervention program gathers scientific evidence of its benefits for emotional distress [51–53]. There is also the possibility of being taught online, which makes them viable at times such as lockdowns and quarantines. To generalize the effectiveness of self-compassion training, future studies could be conducted to examine the benefits of self-compassion for specific psychological impacts derived from catastrophic situations.

5. Conclusions

During the COVID-19 pandemic lockdown, one-third of the participants in our study reported high levels of anxiety, stress, and depression. The variables most frequently associated with anxiety, depression, and stress were levels of self-compassion, age, gender, previous physical symptoms, previous history of mental disorders, being a student, and perceived vulnerability to disease. The results may help to identify the most vulnerable profiles in this type of situation and offer support interventions that minimize the collateral effects.

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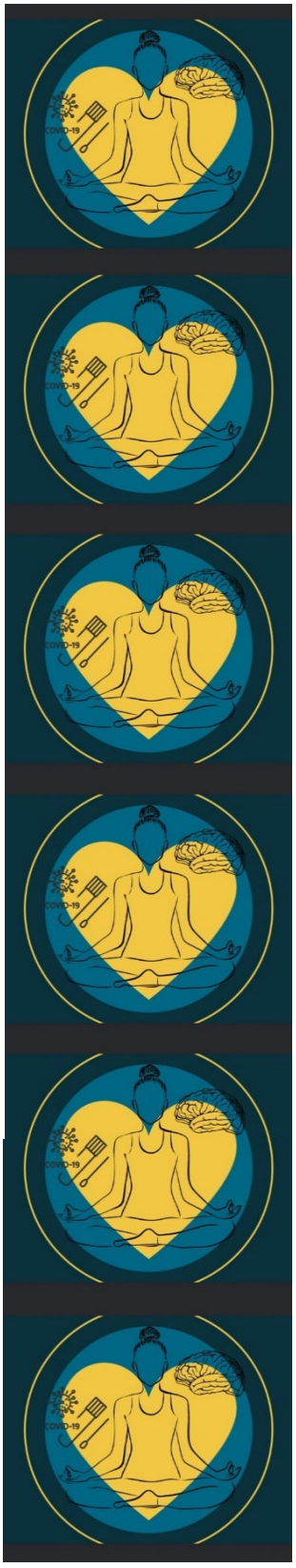
OBJETIVO 2



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Analysis of the Predictive Role of Self-Compassion on Emotional Distress during COVID-19 Lockdown

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Abstract: Research has shown that the COVID-19 pandemic has caused a mental health burden worldwide. Most studies have focused on the factors associated with a higher risk of mental health problems, and only a few studies have looked at the potential protective factors. The general objective of this study was to determine whether self-compassion has a protective effect against the risk of mental health problems and especially on perceived infectability. If so, we intended to determine which of the three specific facets of self-compassion (i.e., mindfulness vs. over-identification; self-kindness vs. self-judgment; common humanity vs. isolation;) has the greatest weight in predicting emotional distress. We conducted a cross-sectional study through an online survey completed by 855 participants in Spain. Results confirmed that the three facets of self-compassion reduce the negative correlation between perceived infectability and emotional distress, diminishing its role in predicting emotional distress. These results are discussed in relation to the protective role of self-compassion and the need to further explore the variables associated with a lower risk of mental problems derived from the SARS-CoV-2 pandemic.

Keywords: mindfulness; mental health; emotional disorders; self-compassion; perceived infectability

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1. Introduction

More than two years have lapsed since the coronavirus disease 19 (COVID-19) pandemic was declared. This situation continues to deeply affect the life of the global population and the morbidity and mortality rates of COVID-19 remain very high. By August 2021, 6 million deaths due to COVID-19 had been recorded (World Health Oranization n.d.). A huge amount of resources has been allocated to save lives and implement preventive measures, such as vaccines. The measures imposed to combat the pandemic have led to a sudden transformation in the academic, professional, social and family lives of individuals (Cachón-Zagalaz et al. 2020; El Keshky et al. 2020; Emily A. et al. 2020; García-Morales et al. 2021).

In catastrophic situations, there is typically an increase in anxiety and depression (Makwana 2019). In fact, the COVID-19 pandemic has had a considerable impact on the mental health of the general population, as shown by several systematic reviews (Bueno-Notivol et al. 2020; Kunzler et al. 2021; Ren et al. 2020; Salari et al. 2020; Wu et al. 2021; Xiong et al. 2020). High levels of anxiety, depression and stress have been recorded in 30% of the general population during this pandemic (Gutiérrez-Hernández et al. 2021; Salari et al.

2020; Tang et al. 2020). In addition, a high prevalence of anxiety and depression disorders has been observed in specific populations such as adolescents (Zhou et al. 2020) and health workers (Ni et al. 2020). Anxiety and depression are the most frequently analyzed disorders. However, studies have also been conducted on other disorders such as PTSD (Liang et al. 2020; Tang et al. 2020) and even on negative emotional responses such as anger (Li et al. 2020b).

Many research studies conducted in 2020 have explored the potential risk and protective factors for emotional distress during the COVID-19 pandemic (Lai et al. 2020; Mazza et al. 2020; Parrado-González and León-Jariego 2020). The purpose of this study was to further explore the links between mental health and the consequences of adverse situations.

The most widely studied sociodemographic risk and protective factors are gender (Brooks et al. 2020; Parrado-González and León-Jariego 2020; Salari et al. 2020) and age (Huang and Zhao 2020; McGinty et al. 2020; Wang et al. 2020c). The role of previous mental disorders has also been studied (Gutiérrez-Hernández et al. 2021; Lei et al. 2020; Li et al. 2020a; Tang et al. 2020).

Very diverse psychological variables have been explored, such as coping styles (Liang et al. 2020; Wang et al. 2020b), personality traits (Xiong et al. 2020), dispositional optimism (Zayas et al. 2021), self-esteem (Zhu et al. 2021), resilience (Vos et al. 2021), fear of infection (Ahorsu et al., 2020) and mindfulness and self-compassion (González-García et al. 2021; Kam et al. 2021). Of these, it has been observed that the main risk factor is fear of infection/perceived infectability (Bavel et al. 2020) and the main protective factor is the level of mindfulness and/or self-compassion (Gutiérrez-Hernández et al. 2021). Fear of infection is a psychological variable that greatly affects the general population during epidemics (Desclaux et al. 2017; Jeong et al. 2016; Reynolds et al. 2008). The fight against epidemics has been constant throughout history as our immune system is limited and cannot ward off all infectious diseases. According to the evolutionary disease-avoidance model (Park et al. 2003), humans perceive they are susceptible to infectious diseases (i.e., perceived infectability) in order to promote proactive behaviors that reduce the spread of such diseases (Díaz et al. 2016; Shook et al. 2020). The level of perceived infectability varies depending on external circumstances, such as the prevalence of and the mortality caused by the pathogenic agent (Schaller and Duncan 2007). The collateral effects of fear of infection are anxiety (A), stress (S) and depression (D) (Ahorsu et al. 2020; Bavel et al. 2020; Chen et al. 2021; Gutiérrez-Hernández et al. 2021; Lawal 2021; Olagoke et al. 2020; Wakashima et al. 2020; Winter et al. 2020). However, this psychological phenomenon leads the population to be more cautious and to apply preventive measures to slow down the spread of the virus. As a result, it would be counterproductive to take action to reduce this fear of the virus, but it would be beneficial to minimize the psychological impact of perceived infectability on the population. Researchers have also explored the psychological factors that protect individuals from mental health problems during situations such as a pandemic. For example, Wachinger et al. (2013) analyzed potential protective factors in the face of threatening situations and found that emotional regulation was one of them. It has been observed that self-compassion facilitates emotional regulation (Inwood and Ferrari 2018). Self-compassion training has been found to be a preventive and even therapeutic factor in emotional disorders (Cleare et al. 2019; Gilbert and Procter 2006; Hofmann et al. 2011; Inwood and Ferrari 2018; Kirby et al. 2017; MacBeth and Gumley 2012; Neff 2003a, 2003b; Wilson et al. 2019). Self-compassion has also been observed to be a protective factor from emotional distress during the COVID-19 pandemic in the general population in China (Lau et al. 2020; Li et al. 2021) and Spain (Gutiérrez-Hernández et al. 2021; Jiménez et al. 2020) and also among doctors (Kotera et al. 2020), pregnant women (Taubman–Ben-Ari et al. 2020) and parents (Preuss et al. 2021). In 2021, some studies have been published on the role of self-compassion on mental health during the COVID-19 pandemic. Nevertheless, more empirical robustness would be necessary to gain greater insight on the mechanisms that lead to the benefits observed. The authors of the present study found diverse studies on the mediating role of some psychological factors between SC and mental health: coping

strategies as a mediator between SC and life satisfaction (Li et al. 2021) and resilience as a mediator between SC and depression (Pérez-Aranda et al. 2021). In a recently published study, it was observed that SC could be a moderator of the relationship between perceived threat of COVID-19 and emotional distress (Matos et al. 2022).

Considering the beneficial effects of self-compassion, we consider that it is essential to conduct research analyzing the mediator and moderator roles of SC during the COVID-19 pandemic to be better prepared for future disasters.

Self-compassion is defined as the attitude of being open to our painful situations and having a genuine intention to relieve the suffering they cause (Neff 2003a). Conceptually, self-compassion includes three pairs of facets, each of which has two complementary components (Raes et al. 2011): mindfulness vs. over-identification (M/OI), self-kindness vs. self-judgment (SK/SJ) and common humanity vs. isolation (CH/I). The M/OI pair represents the ability to be objectively conscious of adverse situations and the emotions they elicit in us. The SK/SJ pair refers to exploring our essential needs that become evident at difficult times. The CH/I pair helps us to remember that suffering and imperfection are implicit to human beings, thus reducing our resistance to accepting inevitable situations.

Many of the studies included in the meta-analysis conducted by Chio et al. (2021) reflect a medium or large significant relationship between each of the three pairs and psychological distress (Allen 2017; Kemer et al. 2017; Psychogiou et al. 2016; Svendsen et al. 2016; Yousaf et al. 2019). Despite this, there is a lack of studies exploring the effect of the components of self-compassion (SC) separately during the COVID-19 pandemic. The current study fills this gap by presenting the various dimensions of self-compassion associated with mental health.

Considering the arguments presented above, the present study was designed with the following objectives: (i) determine the relationships between fear/perceived infectability and SC in the context of mental health; (ii) explore whether the protective role of SC can reduce the harmful effects of other risk variables such as perceived infectability; (iii) if this effect is found, determine whether this effect depends differentially on the three facets of SC.

2. Materials and Methods

2.1. Participants

The sample was composed of 855 individuals who lived in Spain during the period from 14 to 21 April 2020. There were more female participants (71.6%) than male participants. Mean age was 42.92 years, with an age range from 18 to 86 years. Level of education was as follows: 78% of participants had completed university studies, 22% had secondary studies and 6% had primary studies.

The inclusion criterion was being aged over 17 years, and the exclusion criterion was not speaking Spanish well enough to understand the questions well.

2.2. Materials

We used the Google Form application to design a questionnaire that included the sociodemographic and clinical data of interest as well as the following scales: DASS-21, PVDQ and SCS. The questionnaire was self-administered individually and anonymously.

Anxiety Stress Scale-21 (DASS-21) (Lovibond and Lovibond 1995): We used a version translated into Spanish and validated (Daza et al. 2002). The scale includes three subscales (i.e., anxiety, depression and distress). Each subscale has 7 items, and the overall scale has 21 items in total. Responses are given on a four-point Likert scale ranging from 0 (not at all) to 3 (very much). The scale can also be used as a general measure of emotional distress (Alfonsson et al. 2017; Osman et al. 2012; Valencia 2019) and has shown good psychometric properties (Anghel 2020; Camacho et al. 2016). In our sample, the following alpha coefficients were obtained: 0.94 for the total scale, 0.83 for the anxiety subscale, 0.85 for the depression subscale and 0.90 for the stress subscale. For the purposes of this research, the DASS-21 was used as a general measure of emotional distress.

Perceived Vulnerability to Disease Questionnaire (PVDQ) (Duncan et al. 2009): We used a version translated into Spanish and validated (Díaz et al. 2016). It is composed of two subscales: perceived infectability (seven items) and germ aversion (eight items). In this study, we only administered the perceived infectability subscale. Responses are given on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The perceived infectability subscale has a Cronbach alpha of 0.78. In our sample, it had an alpha coefficient of 0.85.

Self-Compassion Scale (SCS) (Neff 2003b): We used the 12-item short form of the scale (SCS-SF, (Babenko and Guo 2019; Raes et al. 2011)). The SCS includes the three facets mentioned above and is composed of six subscales: Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness and Over-Identification. We used the version validated in Spanish (Garcia-Campayo et al. 2014). Responses are given on a five-point Likert scale ranging from 1 (almost never) to 5 (almost always). The version we used had a total Cronbach alpha of 0.85 (Garcia-Campayo et al. 2014), and the alpha value obtained with our sample was 0.84.

2.3. Design

We designed a cross-sectional study using the snowball method to recruit the sample. The dependent variables were anxiety, depression and distress. The predictor variables were gender, age, level of education, job status, situation during the lockdown, perceived infectability, habit of meditation, physical symptoms in the past two weeks, previous psychiatric disorder and self-compassion levels.

2.4. Procedure

After designing the questionnaire described in the Materials section, the researchers circulated it among their professional and social contacts and relatives and asked their contacts to do the same.

2.5. Ethics

This study was approved by the Ethics Committee for Research with Drugs of the Public Health Authorities of the Canary Islands, Spain. The information provided to participants included an explanation of the study and its objectives. We obtained prior informed consent from all participants, complying with the Spanish law on the protection of personal data. The study also complied with the Declaration of Helsinki.

2.6. Data Analysis

We performed descriptive analyses of sociodemographic variables. We assessed the relationship between sociodemographic and clinical variables with Pearson correlation coefficients (for continuous variables) and ANOVA (for categorical variables). We conducted a hierarchical regression analysis to explore predictive effects. Sociodemographic variables were the first ones introduced. Perceived infectability was introduced in a second step, and self-compassion (general and for each facet) was considered in a third step.

3. Results

Table 1 shows the main sociodemographic and clinical characteristics of the sample.

We performed a first group of analyses to explore the relationship between general emotional distress (i.e., total DASS-21 score) and the main sociodemographic variables. Female participants obtained a higher and significant score in emotional distress (females: mean (M) = 11.55; standard deviation (SD) = 8.07; males: M = 8.52; SD = 6.86 (F = 13.19; p = 0.000)). In addition, participants with a diagnosis of mental disorder had a higher and significant score in the total DASS-21 (participants with a mental disorder diagnosis: M = 16.21; SD = 8.73; without a mental disorder diagnosis: M = 10.39; SD = 7.67 (F = 16.06; p = 0.000)). We found a negative and significant correlation coefficient (i.e., Pearson)

between DASS-21 score and age (r = −0.17; p = 0.000). No other significant correlations were observed.

Table 1. Sociodemographic and clinical characteristics of the sample (n = 855).

Variables	Categories	*n* (%)
Gender	Female	616 (72%)
	Male	239 (28%)
Level of education	University graduate or higher	616 (72%)
	Lower than university graduate	239 (28%)
Mean age (*n* (SE))	43 (14)	
MDD	No	788 (94%)
	Yes	53 (6%)

Abbreviations: MDD = mental disorder diagnosis.

The analysis of the relationship between emotional distress scores and psychological variables showed a significant correlation with the perceived infectability factor (r = 0.16; p = 0.000) but not with the germ aversion factor (r = 0.01). In addition, the DASS-21 total score showed a negative and significant correlation with self-compassion (r = −0.46; p = 0.000). According to these last correlations, the three specific self-compassion factors also showed a similar relationship pattern to emotional distress: self-kindness/self-judgment: r = −0.35 (p = 0.000); common humanity/isolation: r = −0.35 (p = 0.000); mindfulness/over-identification: r = −0.47 (p = 0.000).

Based on these data, we performed a regression analysis of significant psychological factors (i.e., perceived infectability and self-compassion) on general emotional distress. For that purpose, we conducted a hierarchical regression analysis. The first group of variables included sociodemographic variables associated with DASS-21 score (i.e., gender, age and presence of a mental disorder diagnosis). The next step was perceived infectability. After that, self-compassion was introduced, and the interaction between infectability and self-compassion was introduced as a last step. Table 2 summarizes the main coefficients obtained.

As expected, all variables participated in the prediction of DASS-21 scores. In the first step of the regression analysis, the three sociodemographic variables played a significant role in predicting emotional distress. Being diagnosed with a mental disorder and age (negatively) played a similar contribution, followed by gender (female). This equation model reached statistical significance (F = 25.34; p = 0.000) and explained close to 10% of the variance (R^2 = 0.08).

In the second step, we introduced the perceived infectability variable. Coefficients were very similar to those found in the first step. When perceived infectability became part of the equation, it did not lead to relevant changes in the coefficients obtained by sociodemographic variables. This model was also significant (F = 23.01; p = 0.000) and increased the variance explained by two points (R^2 = 0.10).

The third step introduced was self-compassion. In this case, the equation coefficients changed. The first variable in predicting emotional distress was self-compassion. The second variable was gender, which decreased its beta coefficients, similar to the rest of variables. Interestingly, having a mental disorder diagnosis and perceived infectability almost lost statistical significance. Again, the model was significant (F = 51.02; p = 0.000), and the variance explained increased by 14 points (R^2 = 0.24).

Table 2. Hierarchical regression analysis showing the prediction of DASS-21 total score by sociodemographic and psychological variables.

	First step				
	B	t	p	95% CI	
Constant		2.61	0.009	1.09	7.74
Gender	0.15	4.44	0.000	1.44	3.74
Age	−0.17	−4.99	0.000	−0.13	−0.06
MDD	0.17	5.10	0.000	3.38	7.61
	Second step				
	B	t	p	95% CI	
Constant		1.10	0.272	−1.55	5.50
Gender	0.15	4.51	0.000	1.48	3.75
Age	−0.15	−4.55	0.000	−0.12	−0.05
MDD	0.16	4.87	0.000	3.11	7.32
PI	0.13	3.87	0.000	0.06	0.17
	Third step				
	B	t	p	95% CI	
Constant		9.14	0.000	16.24	25.12
Gender	0.10	3.27	0.001	0.71	2.82
Age	−0.09	−2.87	0.004	−0.08	−0.02
MDD	0.07	2.30	0.022	0.35	4.32
PI	0.07	2.21	0.027	0.01	0.11
	Fourth step				
	B	t	p	95% CI	
Constant	0.93	3.89	0.000	0.46	1.40
Gender	0.18	3.21	0.001	0.07	0.29
Age	−0.01	−2.92	0.004	−0.01	−0.00
MDD	0.26	2.40	0.017	0.05	0.46
PI	0.01	2.17	0.030	0.00	0.01
SC	−0.04	−11.85	0.000	−0.04	−0.03
PI × SC interaction	0.00	0.10	0.484	0.00	0.00

Abbreviations: MDD = mental disorder diagnosis (0 = no; 1 = yes); B = beta coefficients; t = *t*-test contrast; *p* = probability; CI = confidence interval; SC = self-compassion; PI = perceived infectability.

Finally, the interaction between total scores in perceived infectability and self-compassion was introduced. The final model continued to be significant (R^2 = 0.24; F = 41.33; p = 0.000), but the interaction variable did not participate significantly in the equation.

After observing the significant role of self-compassion, we tested the specific role of the three factors of self-compassion. Pearson correlation coefficients among these factors were appreciable and significant (i.e., self-kindness/self-judgment with common humanity/isolation = 0.54, p = 0.000; self-kindness/self-judgment with mindfulness/over-identification = 0.65, p = 0.000; common humanity/isolation with mindfulness/over-identification = 0.61, p = 0.000). We conducted one regression analysis per facet, introducing the remaining variables (i.e., gender, age, mental disorder, perceived infectability and the interaction between each factor of self-compassion with perceived infectability). Table 3 shows the main coefficients obtained in each analysis.

Table 3. Regression analysis on the prediction of DASS-21 scores by gender, age, mental disorder diagnosis, perceived infectability and each factor of self-compassion.

Self-compassion factor: self-kindness/self-judgment (SK-SJ)					
	B	t	*p*	95% CI	
Constant	0.97	4.08	0.000	0.51	1.44
Gender	0.19	3.30	0.001	0.08	0.30
Age	−0.01	−2.86	0.004	−0.01	−0.00
MDD	0.24	2.26	0.024	0.03	0.45
PI	0.01	2.13	0.034	0.00	0.01
SK-SJ	−0.04	−12.18	0.000	−0.04	−0.03
PI × SK-SJ interaction	0.00	0.28	0.783	−0.00	0.00
Self-compassion factor: common humanity/isolation (CH-I)					
	B	t	*p*	95% CI	
Constant	0.92	3.87	0.000	0.45	1.40
Gender	0.19	3.28	0.001	0.08	0.30
Age	−0.01	−2.90	0.004	−0.01	−0.00
MDD	0.25	2.36	0.019	0.04	0.46
PI	0.01	2.16	0.031	0.00	0.01
CH-I	−0.04	−11.85	0.000	−0.04	−0.03
Pi × CH-I interaction	0.00	1.00	0.318	−0.00	0.00
Self-compassion factor: mindfulness/over-identification (M-OI)					
	B	t	*p*	95% CI	
Constant	0.92	3.85	0.000	0.45	1.38
Gender	0.18	3.24	0.001	0.07	0.29
Age	−0.01	−2.84	0.005	−0.01	−0.00
MDD	0.25	2.38	0.017	0.05	0.46
PI	0.01	2.29	0.022	0.00	0.01
M-OI	−0.04	−11.94	0.000	−0.05	−0.03
PI × M-OI interaction	0.00	0.60	0.547	−0.00	0.00

Abbreviations: MDD = mental disorder diagnosis (0 = no; 1 = yes); B = beta coefficients; t = *t*-test contrast; *p* = probability; CI = confidence interval; SC = self-compassion; PI = perceived infectability.

As can be observed, the four-step regression analysis was consistent with the results obtained when the general self-compassion score was introduced. Nevertheless, there were several differences between self-compassion factors. The first step of the analysis, in which the self-kindness/self-judgment factor was introduced, yielded an equation that showed the following: this factor revealed a higher beta coefficient in predicting general emotional distress but without a moderator effect, because the remaining variables maintained their significant contribution, except for the interaction between infectability and self-kindness/self-judgment. The model explained a little over 20% of the variance ($R^2 = 0.23$) and reached statistical significance ($F = 42.54$; $p = 0.000$). The role of the common humanity–isolation factor was similar to that of the self-kindness–self-judgment factor. The model also reached significance ($F = 41.52$; $p = 0.000$) and showed an identical percentage of the variance ($R^2 = 0.23$). Moreover, the mindfulness/over-identification factor had a similar participation in the equation ($F = 42.05$; $p = 0.000$; $R^2 = 0.23$).

4. Discussion

The aim of the present study was to analyze the possible protective role of self-compassion on mental health associated with the experience of the COVID-19 pandemic. Specifically, results are consistent with those of previous studies and show the relationship between psychological distress and certain sociodemographic variables and fear of infection. However, when the self-compassion variable was introduced, the impact of these variables on distress decreased. The protective effect was also studied while considering the three facets of SC were separately.

The analysis of the role of sociodemographic variables showed that women suffer more than men during pandemics. This finding has also been obtained by previous studies (Brooks et al. 2020; Parrado-González and León-Jariego 2020; Salari et al. 2020), probably because women continue to take on a greater responsibility in the home and in child-rearing. These responsibilities have an even greater impact with the increase of teleworking and make it difficult to separate between professional and family life.

Age was negatively associated with emotional distress. This relationship has also been found previous studies (Huang and Zhao 2020; McGinty et al. 2020; Wang et al. 2020c). The higher psychological distress found in younger participants may be due to the reduction of social contacts associated with the need to control the pandemic and uncertainties about the future in academic and professional terms.

The existence of a previous mental disorder increased the probability of having greater emotional distress, in line with prior studies conducted during the COVID-19 pandemic (Pan et al. 2020; Ren et al. 2020; Wang et al. 2020a). Although psychological disorders may result from an initial affective predisposition (Peñate et al. 2020), individuals with a previous diagnosis of mental disorders are highly vulnerable to stressful events (Li et al. 2020a; Tang et al. 2020).

Among psychological factors, perceived infectability was positively and significantly correlated with psychological impact. Not surprisingly, high levels of perceived infectability are associated with greater concern in the general population (Shook et al. 2020). Such concern in turn leads to poorer mental health (Ahorsu et al. 2020; Wakashima et al. 2020; Winter et al. 2020). In a pandemic, such as the one due to SARS-CoV-2, individuals' fear of infection and its impact on their own health and that of their relatives is a direct source of concern and emotional distress (Gutiérrez-Hernández et al. 2021; Hedderman et al. 2020; Jiménez et al. 2020).

As regards the role of self-compassion, as explained in the introduction, several studies have been published in the last decade on the protective role of SC in mental health (De et al. 2021; Ferrari et al. 2019; Gu et al. 2015; Inam et al. 2021; Inwood and Ferrari 2018; Kirby et al. 2017; Leaviss and Uttley 2015; Murfield et al. 2020; Zeng et al. 2015; Zhang et al. 2018). This has also been observed during the COVID-19 pandemic (e.g., Gutiérrez-Hernández et al. 2021; Hedderman et al. 2020; Jiménez et al. 2020). Nevertheless, the degree to which this factor protects from psychological distress was yet to be established. Our study considered the variables that negatively affect emotional well-being (being female, being young and having previous mental disorders and higher perceived infectability) and found that self-compassion played a significant role in reducing the impact of those negative variables on emotional state. Specifically, when self-compassion was introduced into the regression equation, we observed a decrease in the role of gender, age, previous mental disorders and perceived infectability in predicted levels of emotional distress. These data are similar to those found by Matos et al. (2022) and can support the idea that SC plays a protective role against emotional distress.

However, our data are far from the idea that SC can play a moderator role. As can be observed, the introduction of SC into the equation leads to a significant increment in the beta coefficient, but the rest of variables still retain their significant contribution. It can imply that our data cannot support that SC regulates the role of other variables, especially perceived infectability/fear of infection. This last variable retains its steady positive association with emotional distress. SC can protect against emotional distress but

does not avoid the presence of emotional disturbances if other risk variables are presents. The role of self-compassion was similar when the three facets (i.e., self-kindness/self-judgment, common humanity/isolation and mindfulness/over-identification) were used separately in the prediction of emotional distress: these facets produce a higher contribution to the equation, but they do not negate the predictive power of age, gender, being diagnosed with a mental disorder or perceived infectability. In any case, these three facets/factors were used as a tau equivalent (i.e., they had the same weight in the self-compassion total score), which may have introduced some bias in the specific role of those facets.

With these data in mind, our inferences cannot go beyond recognizing the relevant role of SC associated with a lower level of emotional distress, but SC cannot protect against the (negative) role of other variables. The hypothetical moderator role of SC needs new studies, perhaps with a longitudinal design (and, also, with the extensive version of SCS).

It is obvious that age, gender and previous mental disorder are not modifiable conditions. In addition, perceived infectability/fear of infection can be an inevitable consequence of any pandemic. Because exploring the protective factors that could promote resilience during adverse times has been a research priority for psychology and social sciences (Pollock et al. 2020), those data support the use of mindfulness/self-compassion training for promoting emotional mental health (Chan et al. 2006; Farris et al. 2021; Hedderman et al. 2020; Zhang et al. 2020). As Neff and Germer (2013) stated, "Self-compassion appears to facilitate resilience by moderating people's reaction to negative events". We hypothesized that perhaps the development of resilience could explain the predictive role of self-compassion on emotional distress during the COVID-19 lockdown. To date, however, we have not found any publications that have analyzed this during the COVID-19 pandemic. This line of inquiry could be addressed in future research.

This study has several limitations. It is cross-sectional, so it is not possible to establish causal hypotheses. When we refer to risk factors and protective factors, they should be understood as hypothetical constructions, since a cross-sectional design can only allow us to observe associations between variables. Another shortfall is that we used a convenience sample and did not include a clinical sample. In addition, the short form of the SCS is slightly less accurate than its long form and the equivalence among facets can be questioned (Chio et al. 2021).

This study was intended to provide information about the predictive role of self-compassion on emotional distress, both on a general level and in each facet in the context of the COVID-19 pandemic. Its results are provisional because of the limitations mentioned above. Regardless, if the protective role of self-compassion regarding psychopathological risk variables is confirmed, it will be possible to implement programs aimed at managing self-compassion. It would be interesting for future studies to verify these results with experimental designs and randomized controlled trials. Nevertheless, the results may have significant practical implications. It should be considered that the COVID-19 pandemic has a negative impact on mental health, and public funding is limited. Therefore, emotional distress could be lowered with effective therapies of a short duration and practical strategies.

Being younger, being female and having a mental disorder increased the psychological impact of the COVID-19 pandemic. Fear of infection led to higher psychological distress in the general population. By contrast, self-compassion decreased all the above-mentioned relationships with distress and diminished the relationship between fear of infection and emotional distress. Consequently, it is likely that self-compassion can play a protective role on emotional negative states.

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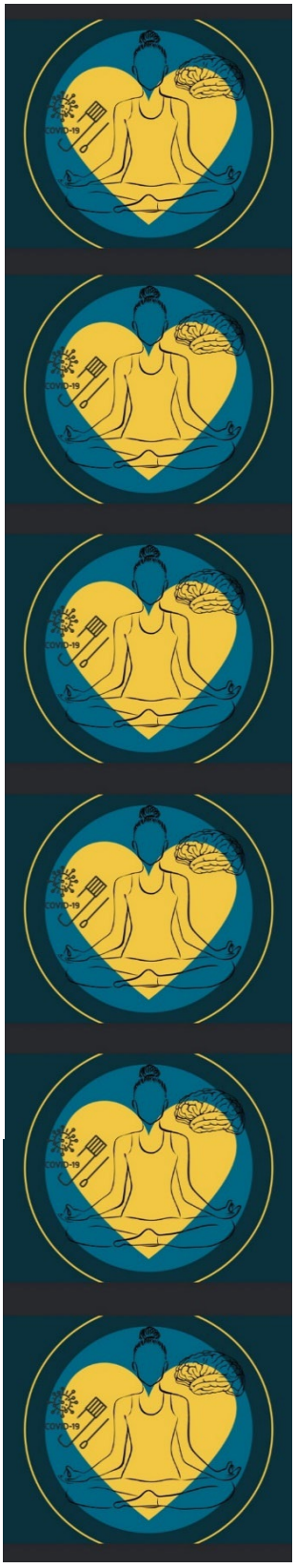
OBJETIVO 3



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The Effect of Daily Meditative Practices Based on Mindfulness and Self-Compassion on Emotional Distress under Stressful Conditions: A Randomized Controlled Trial

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Abstract: Intervention programs based on self-compassion have demonstrated their efficacy both in reducing psychological distress and increasing well-being. The goal of this study was to test the efficacy of an online intervention to increase mindfulness and self-compassion levels in a non-clinical sample in a highly stressful context: the ten weeks of lockdown imposed in the early stages of the COVID-19 pandemic. The intervention sessions consisted of thirty-minute guided meditations followed by thirty minutes of inquiry. Sixty-one participants completed two thirds of the sessions or more, and 65 individuals participated in a waiting-list (WL) control group. Self-compassion, anxiety, depression and stress levels were assessed. The analysis of pre-post results suggests that the interventions increased self-compassion levels and decreased anxiety, depression and stress levels, whereas the WL group did not show any significant changes. The emotional changes in the intervention group were associated with the increase in self-compassion. However, at follow-up, the scores of emotional distress variables returned to the initial pre-intervention scores. These data can be interpreted in line with previous results that have shown the efficacy of self-compassion-based intervention programs. Given that this efficacy was not maintained at follow-up, data are discussed according to the pervasive role of a highly stressful context and—as described in other studies—the need for regular practice to maintain the benefits obtained.

Keywords: mindfulness; self-compassion; mental health

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1. Introduction

Self-compassion (SC) has been defined in several ways. Definitions generally include: (i) Being kind, warm and tolerant with oneself, especially with one's own mistakes, shortcomings and failures; (ii) A propensity for self-caring, understanding one's own personal errors and their consequences; and (iii) The ability to deal with suffering, accepting it as part of being human. This acceptance implies non-avoidance of suffering states, approaching them as experiential activities [1,2].

This conceptualization entails a reconsideration of human mistakes, providing a framework of self-forgiveness as an alternative to live with (perceived) human inadequacies and shortcomings. Specifically, SC is composed of three dimensions expressed in two poles, ranging from an extreme of greater protection to an extreme of greater vulnerability: (i) Self-kindness versus self-judgment, which refers to the tendency to be caring and understanding with oneself or to be punitive and critical in times of suffering; (ii) Common humanity versus isolation, which implies the recognition that one's failures, problems and stress

are a normal part of human life or, on the contrary, an isolated experience happening only to oneself; and (iii) Mindfulness versus over-identification, which implies a balanced approach to thoughts and feelings as opposed to exaggerating distress experiences [2,3].

In this regard, SC can function as a protective coping strategy or as a vulnerability factor, depending on its presence or absence [4].Several literature reviews have pointed out this protective/vulnerability role that affects mental health and well-being [5–7].This influence is especially relevant for emotional distress and disorders [8–10], including initial emotional development during adolescence [11] The specific relationship patterns of the three SC components are similar to those found for general SC. Specifically, a strong association has been found between negative poles (i.e., self-judgment, isolation and over-identification) and psychological distress, and a strong association has been observed between positive poles (i.e., self-kindness, common humanity and mindfulness) and psychological well-being. However, in this case, mindfulness exhibited the strongest association, and common humanity showed the weakest association [4,12].

Few studies have explored why the presence of SC plays a protective role [6] and the mechanism of how SC works remains unclear. Yet, there is some evidence supporting its role as an "enhancer" of emotional regulation resources, reducing difficulties in the use of adaptive strategies and playing a mediational role between emotional disorders and the use of adaptive emotional regulation [13,14]. This point of view has been extended and SC has been proposed as a possible moderator of the presence of emotional problems [15]. Nevertheless, there are also data supporting an inverse process: emotional regulation strategies mediating the role of SC in emotional disorders [16].

Despite these contradictory results, the protective role of SC in certain mental health problems has led to the development of intervention programs based on increasing SC as a strategy to improve mental health and well-being [17,18]. Neff and Germer (2013) developed an eight-session (2.5 h) mindful self-compassion program (MSC) directly related to mindfulness/SC processes with the aim of increasing psychological flourishing and reducing psychological distress. This program connects well-established mindfulness-based protocols to deal with emotional disorders [19,20] with SC components, as was previously proposed [1]. Gilbert (2014) developed compassion-focused therapy (CFT), a 14-session protocol directly aimed at increasing the sense of compassion as a way to deal with emotional distress and disorders.

An initial randomized controlled trial [3] compared MSC with a waiting-list control group in a non-clinical community sample. Pre-post results supported the efficacy of MSC in both increasing well-being (i.e., life satisfaction and happiness) and reducing emotional distress (i.e., anxiety, depression and stress). These promising results were followed by a significant growth in the use of SC to deal with several types of psychological distress and disorders. Six years later, a meta-analysis conducted by Ferrari et al. (2019) found 27 studies (including [3]) in which SC was used as a main component of an intervention program. Self-compassion-based interventions differed in methodological accuracy, contents, session duration and intervention duration. Nevertheless, the overall results showed a similar pattern to that obtained with MSC: a significant effect size in decreasing anxiety, depression, ruminative thoughts, eating difficulties and stress levels. An increase in well-being was also observed (i.e., positive affect and life satisfaction), but with a smaller effect size. These results were also observed with an online internet program [21]. These positive effects were observed at follow-up, but only few studies included a follow-up period.

Because of methodological issues, new systematic reviews were performed dealing only with randomized controlled trials [22–24], and the results were coincident. Both MSC and CFT programs were effective in reducing psychological distress and increasing well-being. Interestingly, RCTs that included specific mindfulness training (e.g., MSC) showed a clear reduction in emotional distress, especially related to anxiety and depression [24]. Although the studies selected in these two systematic reviews were methodologically robust, about half of them did not include a follow-up period.

In summary, interventions based on self-compassion components have provided emerging evidence of its protective effects on emotional distress, attending to available protocols (MSC and CFT). These data are coincident with those provided by mindfulness-based intervention protocols. The Buddhist tradition says that the two wings of a bird are compassion and wisdom, and mindfulness provides an opportunity to increase wisdom by becoming aware of what is happening in the present moment, free of subjective judgments. In this sense, the purpose of this study was to develop an intervention program based on both mindfulness and SC training to reduce emotional distress, testing its efficacy on anxiety, depression, and stress levels in the initial stages of COVID-19. Combining these two modes of intervention was carried out with the goal of increasing the possibility for improving the emotional state of people who were going through this stressful experience. This program was delivered in the format of meditation sessions. The program was delivered online, as proposed by different authors [21,25–27], with a two-month follow-up. This format allowed participants to engage in the program at different times of the day.

2. Materials and Methods

2.1. Participants

Participants were recruited throughout the high stressful conditions of COVID-19, during the ten weeks of lockdown imposed by the Spanish government in the early stages of the pandemic. Individual were asked to participate through social media by inviting them to participate in a meditation program to deal with emotional problems. As positive replies were being received, a Google form containing the self-compassion scale and the DASS-21 (measuring anxiety, depression and stress levels) was administered. Among respondents, 160 individuals were randomly assigned to a control group (80 participants) or an active meditation group (80 participants).

The inclusion criteria were:

- Age 18 years old or over;
- Acceptable internet connectivity;
- Not receiving (psychological or psychiatric) treatment for a mental disorder;
- Not having a serious physical problem;
- Not practicing mindfulness or SC at the time of the study;
- No regular or professional practice of meditation.

As shown in the flowchart (Figure 1), 74 people in the active meditation group and 65 in the control group completed the post-tests. Sixty-one subjects in the active group completed at least two thirds of the sessions. A follow-up period of two months was recorded. During this period, the number of participants decreased to 38 in the active meditation group and 39 in the control group.

The mean age of the 139 participants who completed the pre- and post-tests was 41.75 (SD = 12.01), 42.51 (SD = 11.26) for the active meditation group, and 40.93 (SD = 12.8) for the control group. As regards sex distribution, 117 (84.3%) of the participants were women—84.3% in the active meditation group and 84.5% in the control group. No significant differences were found between the groups regarding age and sex distribution.

2.2. Instruments

A Google form was administered via email with the following data:

- Sociodemographic data. sex, academic background, employment status, physical problems in the last two weeks, previous history of mental disorders and previous experience with meditation;
- Depression, anxiety and stress scale-21 [28]. This is the short version of a self-administered scale measuring depression, anxiety and stress, with seven items per subscale. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic

non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items. The instrument is answered on a four-point Likert scale ranging from 0 (nothing) to 3 (a lot). Original internal consistencies (i.e., Cronbach's alpha) were high: 0.86 for anxiety, 0.93 for depression, and 0.91 for stress. Our sample had the following coefficients: anxiety (0.83), depression (0.89) and stress (0.84). The Spanish adaptation was used [29].

- Self-compassion scale—Short Form [30]. This is a short 12-item instrument extracted from the original SCS measure [31] that is answered on a five-point Likert scale from 1 (hardly ever) to 5 (almost always). The scale covers the three self-compassion dimensions: self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification. This short form has obtained adequate psychometric properties, generally with a Cronbach's alphas higher than 0.80 [32]. Our participants had a Cronbach's alpha coefficient of 0.83 for SCS-SF total scores. According to the three dimensions, self-kindness/self-judgment obtained an alpha = 0.68, common humanity/isolation, 0.77, and mindfulness/over-identification, 0.71. We used the Spanish adaptation of the scale [33].

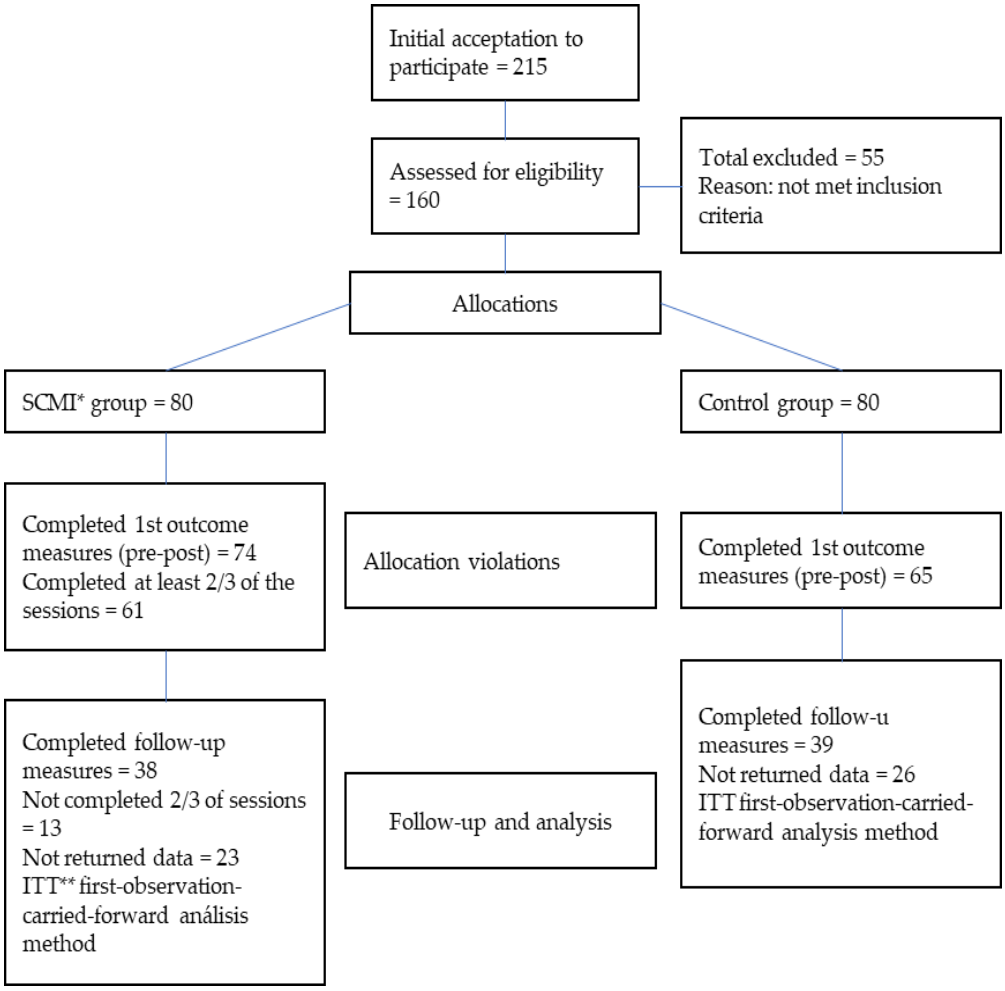

Figure 1. Flowchart of the sample distribution at each stage of the study. * = self-compassion and mindfulness intervention group; ** = intention-to-trait.

2.3. Design

A randomized controlled trial with two arms was performed. One group received a self-compassion and mindfulness-based intervention (SCMI), and the other group was

a waiting-list control group (WL). The SCMI group was further divided into two groups, one receiving the intervention in the morning and one in the afternoon (according to the agenda preferences of each participant). Measures were taken at pre-, post-intervention and two-month follow-up for the SCMI group. For the WL group, measures were taken at pre- and post-intervention. Following the post-intervention measurement, the SCMI was freely offered to control group participants. The intervention was implemented with the online Zoom platform for thirty days. In order to have an effective control of attendance, the two instructors played different roles. Thus, while one was guiding the meditative practice, the other was keeping track of the participants that were connected for the entire session. To this end the participants were asked to keep their cameras on. The participants were asked to maintain their cell phones and any other electronic devices off, to use the more secluded place of their homes for the practice, and to keep the door closed and make sure that no one will interrupt their practice.

The SCMI was composed of several guided meditations with a duration of 30 min per session. These meditation sessions were extracted from various mindfulness protocols, self-compassion programs, and Buddhist tradition meditation, as suggested by different programs and proposals [34–39] The meditation sessions were followed by an inquiry and discussion period of another 30 min.

Specifically, the general content of the SCMI sessions was as shown in Table 1.

Table 1. General session contents of the self-compassion and mindfulness intervention, according to its mindfulness, self-compassion or mixed nature (numbers represent the session number).

Mindfulness	Self-Compassion	Mindfulness/Self-Compassion
1. Brief theoretical concepts on posture and meditation. Conscious breathing. 3. Seated meditations: sitting with the breath, and sitting with the breath and the body. 5. Meditation: body scan. 7. Practice: feet soles for rooting. 9. Walking meditation. 15. Meditation: the lake. 19. Meditation: the mountain. 25. Exercise: the raisins. 27. Practice: surfing the waves. 30. Meditation: Resting from worries	4. Meditation: a cell. 6. Meditation: loving kindness to a loved one. 8. Meditation: creating a safe place. 10. Meditation: loving kindness to ourselves. 12. Meditation: the compassionate friend. 14. Meditation: giving and receiving compassion. 16. Meditation: imagining a compassionate self. 18. Finding difficult emotions. 21. Meditation: empathy with the inner critic. 23. Meditation: the Tonglen—awakening the heart of compassion. 26. Meditation: cultivating a forgiving heart. 28. Meditation: compassion for oneself and for others.	2. Reassuring touch and self-compassion. 11. Meditation: discovering the resonant self-witness. 13. Meditation: embrace life with a smile. 17. Meditation: the radical acceptance of pain. 20. Meditation: receiving fear. 22. Informal practice: compassion with equanimity. 24. Meditation: the prenatal self. 29. Meditation: "who am I?"

As primary outcome emotional variables, anxiety, depression, and stress levels were assessed at pre-, post-intervention and follow-up. These kinds of variables are usually assessed to measure emotional distress to test the efficacy of mindfulness/self-compassion interventions (e.g., [19,24]. As it has been described above, the instrument used to measure these variables was DASS-21. Additionally, self-compassion level was used as a measure of the internal validity of the efficacy of the SCMI, comparing pre- and post-intervention levels.

2.4. Procedure

To recruit participants, a paid advertisement on Facebook was used for seven days, asking for individuals interested in dealing with emotional distress via meditations. Participants who replied positively were asked to share the project with their contacts. Two hundred and fifteen prospective participants were invited to a meeting via two videoconferences (one in the morning and one in the afternoon). In addition, in the case of connection problems, an email containing the full information was sent to them.

A single-blind procedure was used to assign participants to the SCMI group (80) or the WL group (80). An electronic random number table was ran to assign numbers to both SCMI group and WL group. As Google forms were being received, a correlative number was assigned to those that fulfilled the inclusion criteria. According to those correlative

numbers, participants were allocated to their group. Measurements were also blinded, because they were attained via Google forms. There was not possible a double-therapists-blind procedure.

Those in the WL group were informed that they could receive the SCMI two months later (when the active group had finished the intervention). A Google form was then sent asking for additional sociodemographic data; it also contained the DASS-21 and SCS scales (i.e., pre-intervention measurement). Once the intervention had finished, a new Google form was sent out (i.e., post-intervention measurement) with those two scales. This time, the WL participants were invited to undergo the SCMI. Two months later, the DASS-21 was again sent to the SCMI group (i.e., follow-up measurement). Meditations were provided for 30 consecutive days. They were also recorded and linked to a Dropbox file that was accessible to the SCMI group. These meditations were supervised by the first author, a trained teacher in the MSC program, and the second author, an experienced professional in meditation mindfulness protocols.

2.5. Ethics

The project was approved by the Medical Research Ethics Committee of the university hospital (*Complejo Hospitalario Universitario Insular Materno-Infantil*). The surveys contained information about the goals of the study for participants to read. All participants gave their signed informed consent in compliance with the Spanish Data Protection Act and in line with the rights contemplated under the Declaration of Helsinki.

2.6. Data Analysis

The sample was described with frequency statistics. To verify whether the groups were initially comparable as regards the main variables (i.e., age, sex, self-compassion, emotional distress), several comparisons were performed according to the nature of the variables: *t*-test for normally distributed continuous variables, Mann–Whitney U test for non-normally distributed variables, and Chi-square test for nominal variables.

For the SCMI group, an effective participation was considered when individuals completed at least 2/3 of sessions (20), consistent with the Lambert [40] (2013) criteria for naturalistic settings (treatment sessions with less than 20 mean that about 50% of patients have not achieve a substantial benefit from the treatment).

To compare both groups regarding outcome variables (i.e., self-compassion and emotional distress variables), a repeated-measures ANOVA was performed. Median differences between pre- and post-moments were also calculated with ANOVAs. Effect size was calculated through eta-squared. The relationships between the increase in SC levels and the improvements in anxiety, depression and stress were carried-out by Pearson correlation coefficients. There were relevant dropout rates between pre-moments and follow-up moments in the SCMI group, so intention-to-treat (ITT) analyses were conducted using the first-observation-carried-forward method, assigning to participants who dropped out the pre-intervention score (no-change, forward method).

3. Results

As mentioned above, not all participants in the SCMI group completed all the sessions. As an internal validity criterion, it was considered that the final SCMI group would include participants who completed at least two thirds of the sessions. The comparison between participants who did not complete two thirds of the total sessions (N = 12) and participants who completed them (N = 61) did not show any significant differences in sex ($X^2 = 0.12$), age (U = 1014.0), previous self-compassion scores (U = 397.0), previous depression scores (U = 1073.0) or previous stress scores (U = 982.5). However, there was a trend to significance in the initial anxiety scores (U = 767.0; $p = 0.021$). Therefore, the initial scores were used as covariates in later comparisons between anxiety levels.

First, to analyze the results of the program as an internal validity criterion, it was decided that whether the SCMI program had modified self-compassion levels in the treat-

ment group had to be determined. This was achieved through a pre-post-intervention repeated-measures ANOVA comparing the intervention group with the control group. Table 2 summarizes the data of this analysis.

Table 2. Repeated-measures ANOVA of the pre- and post-intervention self-compassion scores of the mindful self-compassion and waiting-list groups.

		Pre	Post		
	Group	**M (SD)**	**M (SD)**	**F (1124)**	**n^2**
SCS	WL	33.67 (9.07)	34.13 (10.23)	30.30 ***	0.194
	SCMI	32.48 (9.55)	40.11 (10.28)		
SK-SJ	WL	10.90 (3.56)	10.88 (3.90)	30.12 ***	0.191
	SCMI	10.52 (3.57)	13.29 (3.70)		
CH-I	WL	11.19 (2.92)	11.51 (3.40)	15.62 ***	0.109
	SCMI	10.65 (3.40)	13.21 (3.79)		
M-OI	WL	11.76 (3.75)	11.91 (3.78)	22.10 ***	0.148
	SCMI	11.30 (3.50)	13.67 (3.32)		

Abbreviations: SCS = self-compassion total score; SK-SJ = self-kindness–self-judgment factor; CH-I = common humanity–isolation factor; M-OI = mindfulness–over-identification factor; *** $p = 0.000$; n^2 = eta-squared.

As shown in Table 2, both regarding total scores and those of each of the three factors of the SCS, the scores of the SCMI group increased significantly, whereas those of the WL group did not change from their initial scores.

As regards changes in depression, anxiety and stress levels measured by the DASS-21, a repeated-measures ANOVA was also performed considering three moments: pre-intervention, post-intervention and follow-up. No significant overall effects were observed in depression levels [F (1124) = 0.260] or stress levels [F (1124) = 0.009]. Only anxiety levels showed changes, with low significance [F (1124) = 3.73; $p = 0.057$]. The evolution of pre-intervention, post-intervention and follow-up scores for the SCMI and WL groups is shown in Figure 2.

Table 3 shows depression, anxiety and stress mean levels measured by the DASS-21, considering the three previously mentioned moments (pre-intervention, post-intervention and follow-up).

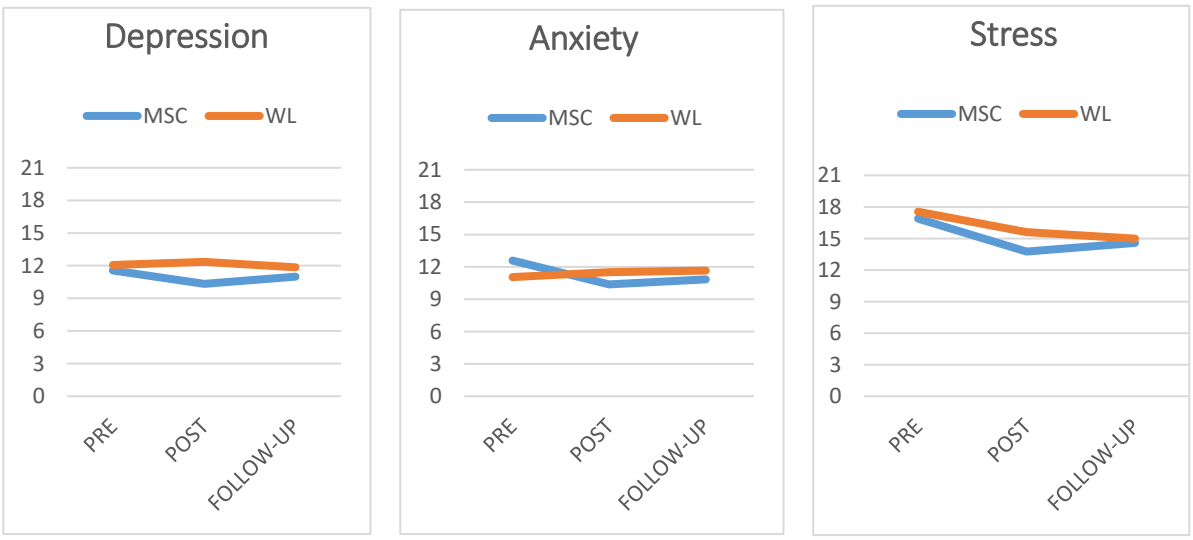

Figure 2. Graphical representation of pre-intervention, post-intervention and follow-up scores of the self-compassion and mindfulness group and waiting-list group in the three emotional outcome variables.

Table 3. Mean levels of depression, anxiety and stress measured by the DASS-21 during pre-intervention, post-intervention and follow-up.

Variable	Group	Pre Mean (SD)	Post Mean (SD)	Follow-Up Mean (SD)
DEPRESSION	SCMI	11.56 (3.22)	10.33 (2.71)	10.95 (2.67)
	WL	12.06 (4.51	12.35 (5.04)	11.85 (3.85)
ANXIETY	SCMI	12.58 (3.48)	10.37 (2.76)	10.84 (2.76)
	WL	11.51 (4.05)	11.51 (4.52)	11.65 (3.06)
STRESS	SCMI	16.89 (10.79)	13.76 (3.55)	14.59 (0.41)
	WL	17.55 (12.01)	15.61 (4.91)	14.99 (4.21)

Abbreviations: PRE = pre-intervention; POST = post-intervention; SD = standard deviation; SCMI = self-compassion and mindfulness intervention; WL = waiting list.

As can be seen, both groups had similar pre-intervention levels in depression, anxiety and stress. The SCMI group had lower scores in the post-intervention assessment but scores were again similar at follow-up. These data were compared again with the mean differences test. Specifically, as regards depression scores, the SCMI and the WL group did not significantly differ in initial scores [F (1137) = 0.52]. At post-intervention, the SCMI group had significantly lower scores than the control group [F (1137) = 6.03; p = 0.017; n^2 = 0.083). Yet, the differences disappeared again at follow-up [F (1137) = 1.79].

The other two variables showed a similar trend. As regards anxiety levels, there were no initial differences [F (1137) = 0.73]. The scores of the SCMI group were significantly lower at post-intervention [F (1137) = 4.89; p = 0.030; n^2 = 0.068) but, again, the differences were not observed at follow-up [F (1137) = 1.87]. As regards stress levels, no differences between groups were observed at pre-intervention [F (1137) = 0.05]; differences were present at post-intervention [F (1137) = 3.14; p = 0.051; n^2 = 0.045) but not at follow-up in the SCMI and the WL groups, although they showed a decreasing trend in both cases [F (1137) = 0.31].

The study revealed that the benefits of the SCMI program disappeared at follow-up. Considering this, we decided to determine whether the benefits were related to an improvement in the level of SC. To this end, we performed a correlation analysis between the increase in SC scores (i.e., post-score minus pre-score) and improvements in anxiety, depression and stress (i.e., pre-score minus post-score, and pre-score minus follow-up score) for the SCMI group. Table 4 shows the results obtained.

Table 4. Correlation coefficients between increases in SC levels (i.e., total score and dimension scores) and improvements in anxiety, depression and stress scores of participants who received the self-compassion and mindfulness intervention program.

	Post (n = 61)			Follow-Up (n = 38)		
	Anxiety	Depression	Stress	Anxiety	Depression	Stress
SCS	0.47 ***	0.51 ***	0.59 ***	0.34 **	0.30 *	0.27 *
SK-SJ	0.40 ***	0.49 ***	0.63 ***	0.34 **	0.32 **	0.22
CH-I	0.33 **	0.37 **	0.33 **	0.30 *	0.29 *	0.22
M-OI	0.51 ***	0.51 ***	0.61 ***	0.37 **	0.31 **	0.25 *

Abbreviations: SCS = self-compassion total score; SK-SJ = self-kindness–self-judgment factor; CH-I = common humanity–isolation factor; M-OI = mindfulness–over-identification factor; *** p = 0.001, ** p = 0.01, * p = 0.05.

The analysis of the data shows that, overall, there was a direct and significant relationship between the increase in SC levels and the improvements in anxiety, depression and stress. These coefficients were clearly higher in post-intervention scores and decreased at follow-up, when some coefficients (i.e., those referring to improvements in stress) ceased to be significant. These data are consistent with the comparisons observed; the SCMI group showed an improvement after the intervention program that disappeared at follow-up. In addition, considering each SC dimension, the mindfulness–over-identification factor showed the best correlations with

improvements in emotional states, and the common humanity–isolation factor obtained the lowest coefficients, although they were also significant.

4. Discussion

The overall goal of this study was to test the effect of an online intervention program involving mindfulness and SC meditations on emotional distress (i.e., anxiety, depression and stress levels). The main results showed that the program improved SC levels and had a positive influence on its three components (i.e., self-kindness–self-judgment, common humanity–isolation, and mindfulness–over-identification). The program also had an immediate post-intervention effect, decreasing the level of anxiety, depression and stress. However, this improvement was not maintained, even though the active intervention group received a guided meditation weekly at follow-up.

These data are consistent with previous studies about the efficacy of intervention programs based on SC in reducing psychological suffering and promoting well-being, and how these positive effects are related to an increase in SC (e.g., [22–24,41]). If we examine data from these literature reviews, there is solid evidence proving that various intervention programs based on increasing SC generate a concomitant effect on psychological well-being and on reducing psychological distress, especially emotional problems and disorders. In studies including a follow-up period, the gains remained several months after the intervention was conducted. Our data showed similar results regarding the efficacy of SC intervention programs in reducing emotional distress, but the efficacy was not sustained at follow-up.

In addition, as shown by the correlation coefficients, a strong association was observed between increases in SC scores and improvements in emotional states (i.e., anxiety, depression and stress). This association was greater at post-intervention than at follow-up, as expected, because the efficacy of the intervention decreased several months later. These data support the protective role of SC over emotional distress, as has been observed in prior studies [10]. An analysis of the role of specific SC dimensions also yielded data consistent with the most protective role played by the mindfulness–over-identification dimension, whereas the role of the common humanity–isolation dimension was less relevant [4]. As described in this meta-analysis, a greater relationship was found between over-identification and emotional distress than in the other two scales. This could be due to two reasons, the first is that when one develops one's mindfulness capacity, rumination decreases considerably, something that in COVID times could lead to high levels of worry, and therefore, greater psychological distress. The second is that if mindfulness is increased, over-identification decreases, and this improves the capacity for emotional regulation in the face of adverse events such as the pandemic situation.

The discrepancy between our results and mainstream data about the effectiveness of SC interventions at follow-up could be due to at least three reasons:

(i) This intervention was conducted during the hardest time of the coronavirus pandemic. There are data supporting the pervasive effects of those moments on mental health, with different social contexts and personal conditions (e.g., [42–45]). The pandemic was a greater stressor than any possible psychosocial interventions, to the extent that, once the intervention ended, the harmful effects of the pandemic were observed again. Our data agree with this explanation; while stress levels tended to decrease both in the intervention and control groups—perhaps due to a tendency to adapt to the initial stressful effect of the pandemic—anxiety and depression returned to their initial levels. Previous data support this stronger effect of intense and prolonged stressful events (e.g., [46]). In these cases, a systematic follow-up with complementary reminder intervention sessions might be particularly useful. Although our study included a follow-up, importantly, both a dose–response relationship and an extinction of the effect of meditation after ceasing the practice have been reported [22–24];

(ii) Participants belonged to a non-clinical community sample. Initially, they were worried about the potential emotional impact of the pandemic, but this did not imply they

had an emotional disorder. All the mean scores of participants in the pre-intervention phase indicated a mild level of depression, anxiety or stress, far from the scores obtained by Spanish mental health patients in the DASS-21 scale [47]. The re-analysis of data efficacy [10,23] has shown a better result with clinical samples compared to non-clinical ones (e.g., [48,49]), including online interventions (e.g., [50]). This could imply that SC intervention programs are effective but are especially so in participants with more serious psychological conditions, which could also imply greater adherence and maintenance of gains. As experts have pointed out, seeking mental health help can be understood as a first act of compassion [2,51];

(iii) The third reason is a methodological issue. The discrepancy can be attributable to several methodological differences between our program and, e.g., MBSR or MSC (program duration, session duration, type of practice, etc.). In a strict sense, those comparisons cannot be carried out, except as a tendency analysis.

Beyond this question, the maintenance of gains following psychological treatment is still a relevant issue in clinical practice [52] despite early questions about its usefulness [53]. In the initial proposal for identifying empirically supported psychological treatments [54], follow-ups are considered "highly desirable" to determine treatment effect stability, which in turn is a criterion to determine treatment efficacy. Likewise, a new model for ESTs specifically pointed out the need to consider long-term efficacy in addition to short-term efficacy as a relevant change in the EST criteria [55]. Differential follow-up efficacies, as our data suggest, can be understood as the emergence of existing differences in the stability of the response to the intervention. These differences may be due to problems in the program implementation itself but also to the characteristics of participants and of the context. The implementation of 30 meditation sessions, with varied components, a diverse nature, and, probably, affecting different emotional regulation strategies, could influence gains stability. If the intervention had focused on similar contents and strategies, it is possible the efficacy was more stable. Additionally, participants represent a sample of non-clinical individuals, interested in managing their emotional distress. This description involves many different people than if we had considered a clinical sample or a sample with more precise characteristics.

The comparison between data provided by randomized clinical trials (RCTs) and real-world data (obtained with other means of data collection) has shown significant gaps that affect healthcare decisions [56]. This approach has led to including real-world evidence (RWE) as a significant element in treatment decision-making [57,58]. RWE is based on data derived from observations of patients in different healthcare settings as complementary data to those provided by well-designed RCTs. The importance of this complementary information has also been emphasized by other proposals [55,59,60] In this regard, far from identifying our modest design with a complex RWE design, our data could represent a modest contribution as complementary data in supporting the efficacy of SC-based intervention programs and the need to back up the pre- and post-gains to maintain them in the medium/long term.

This study has several limitations. First, a double-blind procedure was not possible, because therapists knew the program purpose. Second, participants were only recruited via social media. People who did not use social media could not access the SCMI. Participants were recruited because they were interested in receiving a free self-compassion and mindfulness intervention. Yet, it was not possible to control the nature of that interest (e.g., curiosity, experiencing emotional distress and having an emotional disorder). It is logical to expect that compliance with and adherence to the program may have been influenced by these different interests. This implies a third limitation: individuals participated with different levels of involvement, as shown by a broad range of participation levels in the sessions. A fourth limitation was the control group, which was a waiting-list group. An active control group may be a better comparative group to clarify the differential role of SC compared to usual treatments for emotional distress. SCMI is based in self-compassion and mindfulness activities, but we did not include a precise measure of the mindfulness level

(except an indirect measure with the SCS subscale "mindfulness-over-identification factor"). In this sense, the effect of SCMI on the mindfulness level could not be tested. Finally, we measured SC with the short-form SCS. There are doubts about the psychometric soundness of the components of this scale [61], especially if this scale is used to measure the three SC dimensions separately with the short-form. Despite of the fact that we tried to avoid interpretation bias, limiting the participant characteristics with the inclusion criteria, there are several mediational or moderator variables that can affect our results, beyond these limitations (e.g., specific program contents, concrete psychological processes activated by our intervention, level of participant involvement, etc.), and we could not consider these possible biases.

5. Conclusions

As a main conclusion, current research supports the use of an online mindfulness and SC-based intervention program to relieve emotional distress, such as anxiety, depression or stress. However, these gains could not be maintained at follow-up. This could imply the convenience of introducing new programmed support sessions during follow-up periods to sustain the improvement in emotional regulation. This is especially adequate when the social context is particularity stressful and persists over time (as happened during the initial stages of the coronavirus pandemic).

The decrease in emotional distress was associated with an increased in self-compassion. These data can be interpretable as a direct relationship between SC and well-being, and they represent an internal validation of the SCMI program that was implemented. Additionally, the mindfulness–over-identification SC factor was the specific component most associated with gains in emotion regulation.

Future research can test the efficacy of the SCMI program attending to: (i) A more homogeneous sample (such as a clinical sample); (ii) An intense versus extensive meditation practice (e.g., to concentrate meditation practice on some specific components); and (iii) testing SCMI in less stressful social contexts.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data are available through the mailing address maria.gutierrez118@alu.ulpgc.es.

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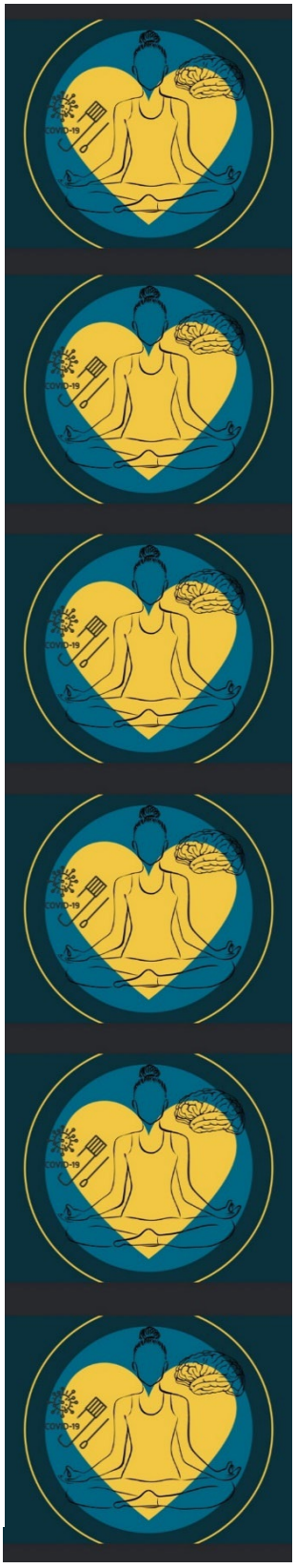
CONCLUSIONES



1.-Aproximadamente un tercio de los encuestados presentaron niveles elevados de ansiedad, depresión y estrés.

2.-La menor edad, el género femenino, la existencia de síntomas físicos o de trastornos mentales antes del confinamiento, ser estudiante y la percepción de vulnerabilidad a la enfermedad se correlacionaron con la existencia de mayores niveles de ansiedad, depresión y estrés.

3.-También se pudo constatar que los niveles bajos de autocompasión, se correlacionaron con la ansiedad, la depresión y el estrés.

4.-Cuando la autocompasión fue considerada junto a las variables sociodemográficas más asociadas al distrés emocional: jóvenes, mujeres, personas con trastornos mentales previos o con una percepción alta de vulnerabilidad al contagio, disminuyó el efecto de estas variables, lo que sugiere un papel protector frente al distres emocional.

5.-Lo mismo pudo observarse para los tres componentes de la autocompasión: atención plena frente a sobre-identificación, auto-amabilidad frente autocrítica y humanidad compartida frente a aislamiento

6.-Sin embargo, debido a algunas de las limitaciones del estudio, no puede afirmarse que la autocompasión actúe como reguladora de las demás variables. Es decir la autocompasión protege del distrés emocional, pero no evita que se produzcan trastornos emocionales si las demás variables están presentes. Lo mismo se aplica también a los tres componentes de la autocompasión

7.-Nuestros resultados apoyan la idea de que la administración online de un programa basado en la atención plena y la autocompasión ha demostrado ser útil para prevenir la ansiedad, la depresión o el estrés durante el confinamiento por COV-19.-

8.-Los efectos de la intervención, no se mantuvieron durante el seguimiento de dos meses realizado a los participantes, lo que sugiere la necesidad de administrar sesiones periódicas de apoyo, especialmente cuando como en este caso, el factor estresante se prolonga en el tiempo.

8.-Los datos de esta parte del estudio pueden interpretarse como que existe una relación directa entre la autocompasión y el bienestar. Más específicamente asociada con el componente atención plena-sobre-identificación

9.-Como consecuencia de lo anterior el programa combinado de atención plena y autocompasión que hemos utilizado, puede considerarse validado internamente, aunque para una validación definitiva necesitaría ser probado en muestras de población más homogénea, usando meditación intensiva o extendida en el tiempo y aplicándolo a poblaciones en contextos sociales menos estresantes.

10.-Por último, aunque con los recursos existentes, el sistema público de salud no puede proveer de asistencia psicológica a toda la población, las intervenciones como la aquí descrita que pueden abarcar a grandes sectores de la población al ser administradas online y tienen por ello un coste/beneficio bajo, pueden ser una alternativa en situaciones catastróficas.

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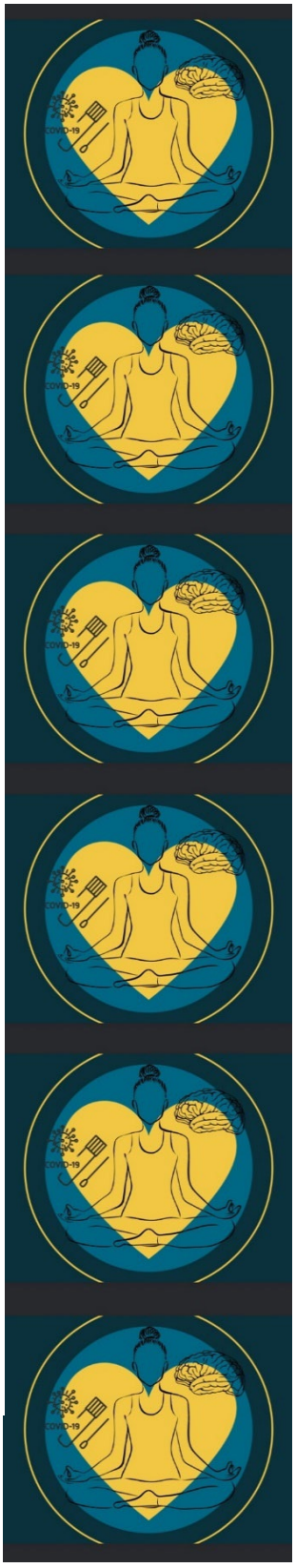

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