Universitat Autònoma de Barcelona

DEFUSIÓN, MINDFULNESS Y VALORES PERSONALES

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DEFUSIÓN, MINDFULNESS Y VALORES PERSONALES

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Noviembre, 2017

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Certifican:

Que han supervisado la presente tesis doctoral titulada:

Defusión, mindfulness y valores personales

Realizada por Alba Franquesa Galí y consideran que es apta para su lectura y defensa pública para optar por el grado de Doctor por la Universitat Autònoma de Barcelona.

Por tal motivo queda constancia en el presente documento en Barcelona,

Noviembre de 2017.

Dr. Joaquim Soler Ribaudi **Dr. Jordi Riba Serrano**

A Pablo y a Gal·la.

AGRADECIMIENTOS

Quisiera agradecer a Quim por todos estos años de acompañamiento en la realización de la tesis pero también como maestro y compañero de profesión. Gracias por las interesantes conversaciones, por la apertura a escuchar y la generosidad en el compartir, gracias por aplicarte el cuento de lo que dices y enseñar desde el modelado y el refuerzo más que desde la instrucción. Gracias a ti esta tesis es un premio a la curiosidad más que un logro académico. Gracias a los coautores de los artículos, que han aportado cada uno su saber, está claro que para avanzar es necesario colaborar.

Gracias a mis padres por respetar mi camino y confiar en mi. A mis amigos porque son mi mayor tesoro y me recuerdan que algo debo valer si están a mi lado.

A La Maloka, que me ha enseñado tanto y no me deja olvidar la humildad y el respeto necesarios para meter las narices en los misterios de la mente.

A las personas que han puesto, con valentía, su intimidad y su fragilidad en mis manos con la esperanza de que pudiera ayudarles sabiendo que no soy mas que otra persona humana con mis cegueras y mis miedos. Y a las personas que han aceptado participar con su colaboración en los estudios que en esta tesis se presentan.

ÍNDICE

ABREVIATURAS Y ACRÓNIMOS

2-LESSMP	*Meditation practitioners two or less times per week*
3-4MP	*Meditation practitioners three or four times per week*
AAQ-II	*Acceptance and Action Questionnaire*
ACT	Terapia de Aceptación y Compromiso
AC	Activación Conductual
CFA	*Confirmatori Factor Analisis*
CFI	*Confirmatory Factor Index*
GFI	*Goodness of Fit Index*
RMSEA	*Root Mean Square Error of Approximation*
BSL-23	*Borderline Symptom List – 23*
BPD	*Borderline Personality Disorder*
CAMS-R	*Affective Mindfulness Scale-Revised*
CBT	*Cognitive Behavior Therapy*
CES-D	*Center of Epidemiologic Studies-Depression*
DASS-21	*Depression, Anxiety and Stress Scales*
DASS-21 Depre.	DASS-21. Depression subscale.
DASS-21 Anx.	DASS-21. Anxety subscale.
DASS-21 Stress	DASS-21. Stress subscale.
ELS	*Engagement with Life Scale*
DBT	Terapia Dialéctico-Conductual
DMP	*Daily meditation practitioners*
DMT	Dimethiltryptamine

EQ	*Experiences Questionnaire*
EQ-D	*Experiences Questionnaire- Decentering*
FAP	Psicoterapia analítica funcional
FFMQ	*Five Facets Mindfulness Questionnaire*
FMI	*Freiburg mindfulness Inventory*
KIMS	*Kentucky Inventory of Minfulness*
LSD	*Lysergic acid diethylamide*
MAAS	*Mindful Attention Awareness Scale*
MAO	*Monoamine-oxidase*
MBCT	*Mindfulness-Based Cognitive Therapy*
MBT	Terapias basadas en mindfulness
MBSR	*Mindfulness-Based Stress Reduction*
MDD	*Major Depressive Disorder*
ME	*Control group with meditative experience*
NME	*Control group without meditative experience*
PCC	*Posterior Cingulate Cortex*
PHLMS	*Philadelphia Mindfulness Scale*
SD	*Standard Deviation*
STAI-S	Spielberger State Anxiety Invertory
SRMR	Standardized rood mean sqare residual
TCC	Terapia Cognitivo Conductual
THH	*Tetrahiydroharmine*
TIP	Terapia integral de pareja
TLP	Trastorno límite de la personalidad

TMS	*Toronto Mindfulness Scale*
VLQ	*Valued Living Questionnaire*

NOTA: En esta tesis se mantendrá el uso de los términos *decentering* y *midfulness* en inglés con el objetivo de minimizar la confusión por a la gran cantidad de términos existentes.

JUSTIFICACIÓN DE LA TESIS

Cada vez más los procesos subyacentes a los efectos de la psicoterapia van tomando relevancia en los diferentes modelos. Su operativización y medida así como la comprensión de la relación entre ellos es un foco de interés para la investigación. La eclosión de las terapias de tercera generación ha recuperado el interés en los procesos básicos comunes a las distintas intervenciones y que inciden en el bienestar. La capacidad de decentering parece ser un proceso activo - clave tanto de las terapias cognitivas como en terapias más recientes como son el mindfulness o las terapias basadas en la aceptación. Replicar la estructura factorial de la versión original de la escala *Experience Questionaire-Decentering* y realizar su traducción y validación al español son requisitos necesarios para continuar avanzando en la investigación sobre éste constructo.

La validación de la escala de decentering nos permite preguntarnos si esta capacidad es diferente en sujetos meditadores respecto a los no meditadores y si es una variable sensible al entrenamiento en mindfulness o a otro tipo de intervenciones como puede ser la toma de ayahuasca. En un segundo estudio y basándonos en las descripciones de aspectos comunes entre la experiencia con ayahuasca y la práctica del mindfulness, se pretende explorar si tras una experiencia con ésta sustancia se da también un cambio en los procesos asociados con el mindfulness. Con ésta finalidad se evalúan los efectos de una sola toma de ayahuasca en decentering y en aquellos procesos psicológicos que se considera que constituyen los mecanismos de acción del mindfulness.

Por último, la práctica clínica nos permite evidenciar la dificultad que supone trabajar sobre valores personales en sujetos especialmente centrados (o fusionados) con sus contenidos internos. Sabemos que los mecanismos de acción de las psicoterapias están relacionados entre ellos. Sin embargo estas relaciones no están descritas del todo: ¿Cual es la influencia de la práctica meditativa en valores?, ¿Qué papel juegan el decentering y las otras variables de proceso en la relación entre la práctica y la conciencia y regulación conductual por valores? En esta tesis se intentará aportar información sobre estas cuestiones.

1. INTRODUCCIÓN

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1.1. LAS VARIABLES DE PROCESO O MECANISMOS DE ACCIÓN

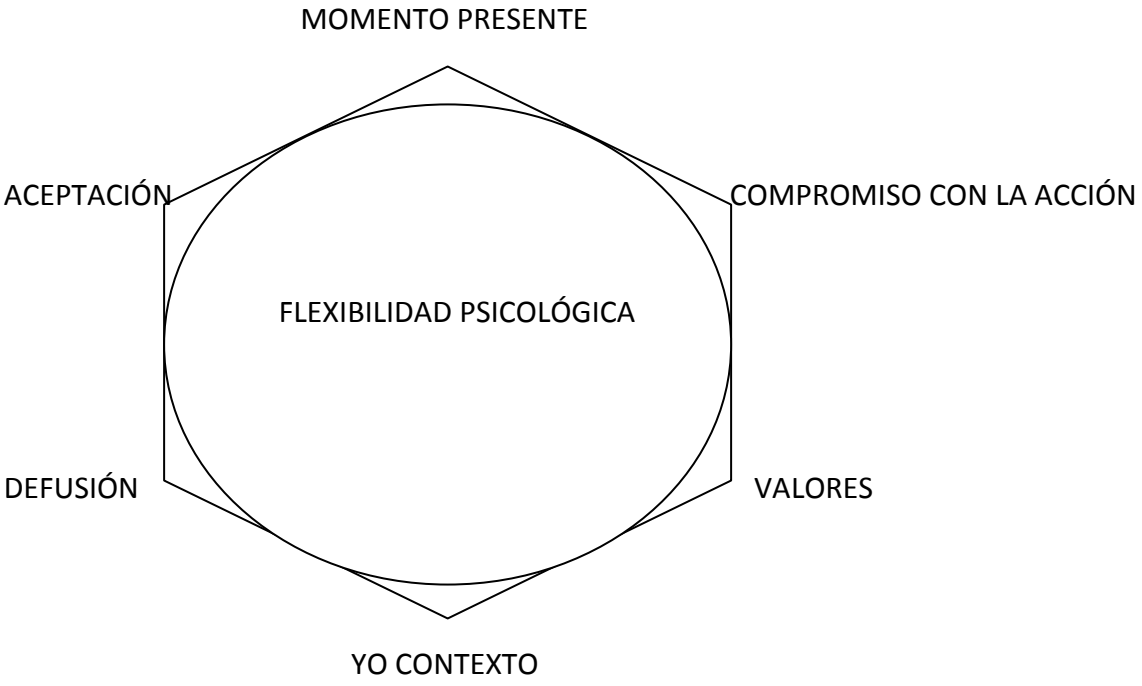
Para la mayoría de psicólogos y corrientes psicoterapéuticas ha tenido un interés mayor el contenido de la conciencia, el pensamiento, la memoria, la emoción, etc., que las características del contexto en el que se expresan dichos contenidos, es decir, la propia conciencia (Hayes, Strosahl y Wilson, 1999; Rychlak, 1997). Las terapias de tercera generación han renovado la terapia conductual o cognitivo-conductual, recuperando la perspectiva contextual en la comprensión de la psicología clínica y del bienestar de las personas. Según Pérez (Pérez, 2014), las terapias de tercera generación, también llamadas contextuales incluirían la Terapia de Aceptación y Compromiso (ACT) (Hayes y otros, 1999), la Psicoterapia Analítica Funcional (FAP) (Kohlenberg y Tsai, 2007), la Terapia de Dialéctica Conductual (TDC) (Linehan, 1993), la Terapia Integral de Pareja (TIP) (Jacobson y otros, 2000), la Activación Conductual (AC) (Jacobson, Martell y Dimidjian, 2001), la Terapia Basada en Mindfulness (MBT) (Segal, Williams y Teasdale, 2002) y la Terapia Cognitiva Basada en la Persona para la Psicosis (Chadwick, 2009); aunque podemos encontrar otras clasificaciones según los criterios de los distintos autores. El entrenamiento en mindfulness es un elemento común de las terapias cognitivo-conductuales de tercera generación. En ellas, además de las técnicas de promoción del cambio clásicamente utilizadas en la TCC, se utilizan también técnicas como el mindfulness con el fin de cambiar la relación del paciente con la experiencia problemática más allá de intentar cambiar la experiencia en si misma (Hayes y otros 2004).

Hoy en día la investigación ha permitido mostrar la eficacia de varias psicoterapias para distintas patologías y malestares. Podemos decir que la utilidad de la psicoterapia no está en tela de juicio, pero seguimos con incertidumbres sobre por qué diferentes intervenciones pueden dar resultados parecidos y lo que las hace eficaces (Pérez-Álvarez, 2014). Se ha hablado de factores comunes entre las distintas psicoterapias y relacionados con el contexto en el que se da la terapia, fundamentalmente la propia

relación terapéutica (Martin, Garske y Davis, 2000). También se ha intentado buscar en determinados modelos de psicoterapia, procesos de cambio descritos en otros modelos, como podría ser el cambio en el contenido cognitivo en una psicoterapia de corte dinámico. La característica común de los procesos descritos en las psicoterapias contextuales es que se centran en el contexto interno del individuo, es decir en el marco individual, a menudo determinado socialmente, en el que un contenido cognitivo, emocional o incluso físico toma su función.

La terapia de Aceptación y Compromiso (Hayes y otros, 1999) es uno de los modelos que más extensamente ha descrito las variables de proceso o mecanismos en psicoterapia, definiéndolas de forma operativa y relacionándolas con la investigación básica sobre aprendizaje y con el establecimiento de funciones por vía verbal. Más allá de las técnicas e intervenciones psicoterapéuticas concretas, la terapia de Aceptación y Compromiso se ha centrado en los procesos fundamentales subyacentes a una psicoterapia, con el fin de favorecer la flexibilidad psicológica y como consecuencia de ello la capacidad de adaptación y el bienestar.

La terapia de Aceptación y Compromiso ha descrito seis procesos básicos, representados en la figura del hexaflex: atención al momento presente, aceptación, defusión, valores, conducta valorada y yo como contexto (Hayes y otros, 1999).



1.1.1. ATENCIÓN AL MOMENTO PRESENTE

El momento presente es donde el resto de procesos se hacen posibles, donde la aceptación y la defusión tienen lugar, donde los valores existen y adquiere relevancia el compromiso con éstos. Finalmente es donde se puede experimentar la plenitud de la experiencia del yo como contexto. Esto no quiere decir que sea un proceso más importante que los otros pero si un paraguas imprescindible; el aquí y ahora es el punto de partida de la psicoterapia.

Las técnicas de mindfulness, consisten fundamentalmente en ejercicios de atención al momento presente. Pueden consistir en la focalización de la atención a un objeto (por ejemplo las sensaciones asociadas a la respiración) o bien en la meditación de monitoreo abierto (open monitoring) o meditación sin ancla, en la que la atención se centra en percibir conscientemente cualquier objeto mental que aparezca en la experiencia momento a momento (Lutz, Slagter, Dunne y Davidson, 2008).

Estudios con poblaciones no clínicas asocian la práctica de mindfulness a una mayor regulación emocional. Ésta conllevaría una disminución del estado de ánimo negativo, un aumento del estado de ánimo positivo (Davidson y otros, 2003; Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010), y una reducción de los pensamientos rumiativos (Jain et al., 2007).

La práctica de mindfulness también contribuye a una mejor regulación emocional impidiendo el desarrollo de emociones secundarias. La capacidad de “no-reaccionar” ante los eventos que provocan malestar emocional y de no-juzgarlos es fundamental para impedir que las emociones secundarias tengan lugar (Lynch y otros, 2006). Los efectos beneficiosos del mindfulness también se relacionan con ciertas modificaciones a nivel de las funciones cognitivas (Chiesa, Calati y Serretti, 2011), especialmente los procesos atencionales (Holzel y otros, 2011).

En población clínica, las intervenciones basadas en la atención al momento presente han mostrado efectos beneficiosos en la prevención de recaídas y en la disminución de sintomatología residual en la depresión mayor, en el trastorno bipolar y en la reducción de la ansiedad en el trastorno de ansiedad generalizada y el trastorno de pánico (Chiesa, 2011).

1.1.2. ACEPTACIÓN

La aceptación es la "adopción voluntaria de una postura intencionadamente abierta, receptiva, flexible y exenta de juicios de valor sobre el momento presente" (Hayes, Strosahl, y Wilson, 2014)

La aceptación de la experiencia tal y como es, junto con la exposición a emociones, pensamientos o sensaciones que anteriormente habían sido evitadas es clave para reducir el malestar (Holzel et al., 2011; Lynch et al., 2006; Linehan, 1993). A pesar de esto, el alivio inmediato que produce el escape es un reforzador tan potente que casi todos los seres vivos recurrimos a él aun cuando los efectos a largo plazo puedan ser nefastos. La evitación puede tener tres tipos de costes: disminuye la inteligencia vivencial en la medida en que puede reducir el contacto con la experiencia; conlleva la pérdida de la capacidad de elección cuando la evitación es inconsciente y por último la evitación puede impedir la evolución de la conducta hacia valores (Hayes y otros, 2014).

Los beneficios del afrontamiento basado en la aceptación, en contraposición con el afrontamiento orientado a la supresión, han sido bien descritos en el manejo del dolor (Hayes y otros, 1999), la ansiedad (Treanor y otros, 2011) y el pánico (Eifert y Heffner, 2003; Levitt y otros, 2004). Así mismo, también han mostrado su efecto positivo sobre la regulación emocional en sujetos con sintomatología depresiva y ansiosa (Campbell-Sills y otros, 2006). Por otro lado, el afrontamiento basado en la evitación experiencial parece ser un factor de vulnerabilidad para el malestar psicológico (Kashdan y otros, 2006).

1.1.3. DEFUSIÓN O DECENTERING

La capacidad de defusión se define como "la habilidad para observar los pensamientos y las sensaciones propias de manera separada, como sucesos temporales de la mente sin que sean necesariamente verdaderos ni constituyan el reflejo de uno mismo" (Kerr,

Josyula y Littenberg, 2011; Safran y Segal, 1990). La capacidad para "dar un paso atrás ante la experiencia immediata", cambia la naturaleza de dicha experiencia (Safran y Segal, 1990). El proceso contrario, la fusión, consistiría en una forma de dominancia verbal en la regulación de la conducta, de manera que la experiencia directa iría desempeñando un papel cada vez menor (Hayes y otros 2014).

Varios constructos similares hacen referencia al mismo proceso: defusión cognitiva (o desliteralización; Hayes, 1999, 2014), "decentering" (Safran y Segal, 1990), conciencia meta-cognitiva (Teasdale y otros, 2002), metacognición (Wells, 2002) o "reperceiving" (Shapiro, Carlson, Astin, y Freedman, 2006) y otros. En esta tesis me referiré a ése proceso con el término "decentering".

La mejora de la capacidad de decentering con la práctica del mindfulness facilita una respuesta menos emocional ante las experiencias internas y externas (Shapiro y otros, 2006). En este sentido, el efecto del mindfulness puede derivar en cambios en el procesamiento de la información que permitan cortar los estilos repetitivos observados en diversos trastornos (Wells, 2002). Fresco conceptualiza la capacidad de decentering como necesaria para el funcionamiento cognitivo, psicológico y social saludable y plantea qué incrementos en la capacidad de decentering constituirían la base de una respuesta al tratamiento más duradera (Fresco y otros, 2007 a, b). Las intervenciones que promueven el decentering enseñan a observar los pensamientos como pensamientos y no como hechos, a identificarlos como productos de la mente y no como realidades, permitiendo al individuo abordarlos de una forma más desapegada. Teasdale y colaboradores (1995) sugirieron que el desarrollo de esta conciencia metacognitiva (i.e. decentering) estaría detrás de la eficacia del mindfulness, de las terapias basadas en la aceptación y también de otras psicoterapias de tipo cognitivo-conductual.

Varios estudios han explorado el rol del decentering en el bienestar y la salud mental. Se ha observado que la la capadidad de decentering está asociada de forma inversa con la ansiedad y los síntomas depresivos (McCracken, Gutiérrez- Martínez, & Smyth, 2012; Teasdale y otros, 2002). También se ha visto que tras las intervenciones basadas en mindfulness, la capacidad de decentering se asocia a la reducción de la ansiedad y la sintomatología depresiva (Bieling y otros, 2012; Lau y otros, 2006; Gayner y otros,

2012; Teasdale y otros, 2002); a la reducción de la ansiedad y el incremento del afecto positivo (Gayner y otros, 2012); y a otros indicadores de salud mental relacionados con el tratamiento basado en mindfulness (Fresco, 2007 b; Hoge y otros, 2014; Lau y otros, 2006; Tanay y otros 2012). Estos resultados apoyan la idea de que el decentering está intimamente relacionado con la salud mental y que puede ser un proceso mediador en el efecto de las intervenciones basadas en mindfulness o en la conciencia metacognitiva.

1.1.3.1. EXPERIENCE S QUESTIONNAIRE-DECENTERING

La EQ-Decetering (EQ-D) es una escala diseñada para medir la capacidad de decentering. Está formada por 11 ítems con puntuaciones tipo Likert entre 1 (nunca) y 5 (siempre) (ver anexo 1) donde mayores puntuaciones indican mayor capacidad de decentering.

Teasdale y coautores usaron una medida preliminar de conciencia metacognitiva en su estudio, el MACAM (Moore, Hayhurst, y Teasdale, 1996) pero ésta resultó consumir demasiado tiempo para ser usada en contextos orientados a la práctica (Teasdale y otros, 2002). Esa medida preliminar requería que los sujetos evaluados escucharan 8 grabaciones de viñetas y una persona entrenada para llevar a cabo una entrevista semiestructurada. Poco después, Teasdale junto con Segal y Williams diseñaron una escala alternativa de 20 ítems, la Experiences Questionnaire (EQ) (Fresco y otros, 2007a) para evaluar decentering y operativizar cambios durante la Terapia Cognitiva Basada en Mindfulness (MBCT). La escala completa fue construida para tener dos subescalas: Decentering (14 ítems) y Rumiación (6 ítems). La subescala de Rumiación se incluyó como una escala de control del sesgo de respuesta. El contenido de los ítems iniciales de la EQ- Decentering se refería a la habilidad para verse a uno mismo como diferente a sus propios pensamientos, la habilidad para no reaccionar a las experiencias negativas y la capacidad de autocompasión.

En la validación original de la EQ (Fresco 2007a) el modelo de dos factores no se confirmó, los ajustes del modelo definieron un único factor correspondiente al constructo de decentering formado por 11 ítems. El factor decentering correlacionó

positiva y significativamente con reevaluación cognitiva y negativamente con rumiación depresiva, evitación experiencial, supresión emocional y sintomatología depresiva. Además, los sujetos sin historia de psicopatología mostraron mayores puntuaciones medias que los individuos con antecedentes de depresión. La validación en muestra clínica también dio suporte a la solución unifactorial. Los sujetos con depresión en remisión mostraron menores puntuaciones que controles sanos y las puntuaciones en decentering correlacionaron significativa y negativamente con medidas clínicas de depresión.

1.1.4. VALORES

Schwartz y Bilsky (1987) definieron los "valores" de la siguiente manera: (a) son conceptos o creencias; (b) consisten en estados finales o conductas deseables; (c) trascienden las situaciones específicas; (d) guían la selección o la evaluación de la conducta y de los sucesos; y (e) son ordenados según su importancia relativa.

Según la ACT, los valores personales proporcionan el contexto en el que los estímulos aversivos pueden modificar su función y no ser incompatibles con el bienestar. Los valores son entendidos como una combinación de reglas verbales y contingencias, fruto de la historia personal y determinados por la comunidad verbal de referencia (Páez, Gutiérrez,Valdivia y Luciano, 2006).

Basándose en la ACT, otras terapias de tercera generación como son la Terapia Dialéctica Conductual (DBT; Linehan, 2014) o la terapia de Activación Conductual para la depresión (AC; Jacobson et al. 2001) han incluido intervenciones orientadas hacia los valores.

Otros modelos, como la teoría de la autodeterminación (Deci y Ryan 1985a, b; Sheldon y Krieger, 2014) también han destacado la importancia de tener en cuenta los valores personales en el bienestar de las personas, especialmente la toma de conciencia sobre los mismos, con el fin de vencer la tendencia a ser controlado por demandas y presiones internas o externas y facilitar la mejor elección conductual. Ver Yadavaia y Hayes (2009) y Páez y otros (2006) para una descripción más extensa sobre el papel de los valores en otros modelos no conductuales.

Varios estudios han confirmado que las intervenciones psicológicas centradas en los valores mejoran aspectos relacionados con el bienestar, entre ellos la tolerancia al dolor (Branstetter-Rost Cushing y Douleh, 2009), la respuesta al estrés (Crocker, Niiya y Mischkowski, 2008; Gregg Namekata, Louie y Chancellor-Freeland, 2014), así como la calidad de vida y el funcionamiento físico y emocional (McCracken, 2013; Michelson, Lee, Orsillo y Roemer 2011; Vowles, McCracken y O'Brien, 2011).

1.1.5 COMPROMISO CON LA ACCIÓN

Según la perspectiva de la ACT, si el cliente no cambia su comportamiento, las intervenciones terapéuticas en relación a los otros procesos no tendrán un impacto en su día a día. Entendiendo el comportamiento de forma amplia, incluyendo la conducta observable y también la conducta interna no observable. El compromiso con la conducta no es una proyección en el futuro sino la expresión en el presente de los valores personales, sea el presente que sea. Esto implica que las pautas de conducta deberán ser amplias y flexibles según las circunstancias, incluyendo la actividad mental interna. En el proceso de contacto y clarificación de los valores, éstos no se formulan en términos de objetivos puesto que las acciones comprometidas con los valores son aquellas que tienen en cuenta deliberadamente un determinado valor y suponen un reforzador intrínseco en el presente. De todas formas, en el trabajo de compromiso con la conducta valorada se pueden plantear objetivos que ayuden a concretar un plan de acción.

Varios estudios han mostrado ya los beneficios asociados al compromiso conductual con los valores, tanto en población clínica como no clínica. Brunstein (1993) mostró que el compromiso y el avance en aquellos objetivos relacionados con los valores personales juega un papel relevante en el bienestar subjetivo. Otros estudios, confirman también que las intervenciones focalizadas en los valores permiten mejorar aspectos relacionados con el bienestar como son la tolerancia al dolor (Branstetter-Rost, Cushing, C. y Douleh, 2009), la respuesta al estrés (Crocker, Niiya y Mischkowski, 2008; Gregg, Namekata y Louie, 2014), la calidad de vida y el funcionamiento físico y

emocional (McCracken 2013; Michelson, Lee, Orsillo y Roemer 2011; Vowles, McCracken y O'Brien 2011).

1.1.6. YO CONTEXTO

El constructo del *yo como contexto* se refiere a "la simple experiencia de ser consciente de que somos los únicos poseedores y observadores de nuestras vivencias internas (…) el yo (contexto) es la perspectiva desde la que se observa la actividad verbal" (Hayes y otros, 2014)

La ACT también describe el *yo como concepto*, que se refiere a la visión del yo construida verbalmente y al *yo como proceso* referido al continuo de contenido psíquico que puede ser observado y descrito. El *yo como contexto* es considerado la conciencia desde la que observar el *yo proceso* y el *yo concepto* sin identificarse totalmente con ellos. El *yo como contexto* ha sido denominado también como el *yo observador*.

A pesar de que los procesos relacionados con la experiencia del yo han sido explicados en el contexto de la psicología básica mediante su relación con el aprendizaje asociativo y el lenguaje (McHugh, Barnes-Holmes y Barnes-Holmes, 2004), su interpretación clínica ha sido hasta el momento escasa debido a la complejidad de su evaluación. De todas formas, la terapia analítica funcional (FAP) (Kohlenberg y Tsai, 2007) ha hecho grandes aportaciones a su descripción y comprensión. Kanter y colaboradores (2001) desarrollaron un instrumento de medida de la influencia externa sobre la experiencia del "self". Estos autores confirmaron que una muestra clínica de sujetos con trastorno límite de la personalidad se veía más influenciada por el entorno en su experiencia del "self" que una muestra de sujetos sanos.

1.2. RELACIÓN DE LOS PROCESOS ENTRE ELLOS

Cada uno de los seis procesos del hexaflex han sido descritos por separado pero eso no quiere decir que sean independientes entre ellos. En la práctica se apoyan unos en otros y se potencian de forma interdependiente.

El proceso de decentering sería la forma de mejorar el apego excesivo a los contenidos de la actividad mental (lo que llamamos fusión), es una forma de "desliteralizar" el lenguaje y así debilitar el dominio de respuestas basadas en reglas y en evaluaciones. En consecuencia la evitación experiencial basada en estas reglas y evaluaciones disminuiría, contribuyendo así a la flexibilització de la conducta comprometida con valores del presente. La capacidad de decentering permitiría a la persona observar su experiencia con mayor claridad y en consecuencia elegir más sabiamente de acuerdo con sus valores personales (Kocovski, Segal y Battista 2009; Shapiro, Carlson, Astin, y Freedman, 2006).

La atención al momento presente sería la alternativa a la atención rígida al pasado y al futuro facilitando así el contacto con la experiencia del yo contexto y con los valores actuales y disminuyendo el apego excesivo a la identificación con la propia historia (yo concepto). A la vez, la atención al presente requiere de la disposición a aceptar lo que éste conlleve con apertura total a la experiencia.

Como se ha dicho, la conexión con los valores personales requiere de la atención al momento presente pero también de la capacidad de decentering de reglas rígidas o presiones internas o externas que pueden enmascarar la conexión con valores reales para poder actuar en esa dirección de forma flexible.

El yo contexto está necesariamente conectado con el presente puesto que se trata de una experiencia actual y requiere de la capacidad de decentering para poder diferenciarse del yo proceso y del yo concepto descritos anteriormente.

Agrupando los procesos por pares se han propuesto tres estilos de respuesta (Hayes y otros, 2014):

- Estilo de respuesta abierto: Incluye aceptación y defusión (decentering). La aceptación y la defusión (decentering) apoyan la apertura a la experiencia

directa y amplían el repertorio experiencial y conductual. Son los procesos opuestos a la evitación vivencial y la fusión cognitiva.

- Estilo de respuesta centrado: Incluye momento presente y yo como contexto. Conlleva estar centrado en la conciencia, presente en el contexto social, físico y psicológico, es el eje desde el que el sujeto se abre a la experiencia y se compromete con sus valores.
- Estilo de respuesta comprometido: Incluye valores y compromiso conductual. Sería el estilo de respuesta que tiene que ver con "dar sentido" a la vida y permite entrar en contacto con reforzadores en el presente.

1.3. MINDFULNESS

Se pueden identificar distintos usos del término "mindfulness", pudiendo utilizarse para describir: 1) el constructo teórico de mindfulness; 2) la práctica de cultivar mindfulness (v.g. meditación); o 3) el proceso psicológico de estar presente. Como constructo teórico se vincularía a las definiciones que han sido propuestas sobre el mismo. Una de las más habitualmente utilizadas en investigación y en la clínica es la propuesta por John Kabat-Zinn (1990) según la cual mindfulness significaría prestar atención de una forma particular: intencionadamente, centrada en el momento presente y sin juzgar.

En un trabajo de consenso, Bishop y cols. (2004) ofrecen una definición operativa del mindfulness con el fin de poder ser estudiado en investigación y explicado en contextos clínicos. Ésta distinguiría dos componentes del mindfulness: 1) la regulación de la atención con el fin de mantenerla en la experiencia inmediata; y 2) la actitud implícita de curiosidad, apertura y aceptación que es independiente de la valencia del contenido de la experiencia, o de si ésta es o no deseada. Estos dos elementos son identificados por la mayoría de conceptualizaciones del mindfulness tales como la TDC, en la que se distinguen tres elementos centrados en *"qué hacer"* (observar, describir y participar) y tres elementos asociados a la actitud, es decir centrados en el "cómo" (sin juzgar, haciendo una sola cosa a cada vez y centrándose en ser eficaz) (Dimidjian y Linehan, 2003).

El término mindfulness entendido como una práctica, acostumbra a referirse a una serie de ejercicios de meditación Vipassana y del Zen, como son la meditación sentada, el escaneo corporal, la meditación caminando o la ejecución de estiramientos suaves realizados con atención plena (Kabat-Zinn, 1990). En este sentido, se podrían distinguir a grandes rasgos dos grandes tipos de prácticas meditativas: 1) la focalización de la atención en un objeto (e.g. las sensaciones asociadas a la respiración); y 2) la meditación de monitoreo abierto (open monitoring) o meditación sin ancla en la que la instrucción dada no es regresar a un objeto concreto, sino la observación de cualquier objeto mental que aparezca en la conciencia momento a momento (Lutz, Slagter, Dunne & Davidson, 2008).

Finalmente, el término mindfulness puede entenderse también como un proceso psicológico vinculado a un estado no conceptual centrado en el aquí y el ahora, realizado sin juzgar, con intención, participando de la experiencia y con la cualidad de ser pre-verbal, exploratorio y liberador. En dicho estado uno observa el pasar de los pensamientos, emociones, deseos y sensaciones corporales momento a momento en el marco de la conciencia (Germer, 2005). Éstos procesos nos recuerdan a los descritos previamente en el hexaflex, principalmente la atención al momento presente, característica fundamental del mindfulness, pero también la aceptación, el yo como contexto y la defusión, todos ellos necesarios para cultivar la actitud de observación.

Aunque los estudios sobre la relación entre valores personales y mindfulness son escasos, algunos autores han identificado una relación positiva. La práctica de la meditación puede ayudar a conseguir una mayor conciencia que puede llevar a las personas a analizar objetivos, identificar sus más profundos valores e implicarse en acciones comprometidas (Campos y otros 2016; Linehan 2014; Williams y Penman 2011). De ésta manera la práctica de la meditación facilitaría el reconocimiento y la clarificación de valores. Éste aspecto se ha postulado como mecanismo potencial subyacente a los efectos beneficiosos del mindfulness (Kocovski y otros 2009).

Algunos estudios han investigado una relación entre mindfulness, meditación y valores.

Brown y Ryan (2003) encontraron que los individuos que puntuaron más alto en una escala de mindfulness eran más autónomos en su actividad y menos influenciables por

las demandas y presiones de otros. Estos individuos dedicaban más tiempo a hacer cosas que realmente valoraban y disfrutaban. Brown y Kasser (2005) también mostraron que un elevado mindfulness disposicional se relacionaba con conductas más responsables con el medio ambiente y que el mindfulness y los valores intrínsecos conjuntamente son variables relevantes implicadas en la covarianza entre bienestar y conducta ecológicamente responsable.

1.4. AYAHUASCA

La ayahuasca es una infusión de plantas originarias de la Amazonia. Ésta infusión contiene el psicodélico *N,N*-dimethyltryptamine (DMT) inactivo al ser consumido oralmente debido a la degradación por monoamino-oxidasa pero la infusión de ayahuasca contiene también harmala, un inhibidor de la monoamino-osidasa (IMAO) (Riba et al., 2003) que permite que éste preparado vegetal produzca un estado de introspección parecido al sueño. Bajo el efecto de la sustancia y con los ojos cerrados, aparecen imágenes a las que el individuo puede dar significado y recuerdos a menudo acompañados de emociones intensas; los usuarios describen su efecto como el de una psicoterapia.

Ésta infusión de plantas es usada como medicina tradicional en las comunidades indígenas de America, pero en los últimos años su uso se ha extendido en todo el mundo y está siendo objeto de investigación biomédica (Frood, 2015). La ayahuasca ha mostrado un impacto sobre la sintomatología ansiosa y depresiva y sobre el abuso de sustancias ((Domínguez-Clavé et al., 2016) pero los mecanismos de acción subyacentes están por el momento insuficientemente descritos.

Descripciones fenomenológicas sobre la experiencia con ayahuasca destacan el efecto de la sustancia sobre la forma desapegada de ver los pensamientos y las emociones (Shanon, 2002), muy similar al constructo de decentering. En esta tesis se explora el efecto de una única toma de ésta infusión sobre la capacidad de decentering y las habilidades mindfulness puesto que podrían explicar su efecto psicoterapéutico.

2. OBJETIVOS E HIPÓTESIS

2. OBJETIVOS E HIPÓTESIS

2.1 OBJETIVOS

- Validación al español de la escala EQ-D para la medida del decentering.
- Estudio de los cambios en los procesos psicológicos fruto del consumo de ayahuasca y comunes con la práctica meditativa.
- Estudio de la influencia en conciencia y regulación por valores de la práctica meditativa.
- Exploración del papel mediador de otros procesos psicológicos en la conciencia y regulación por valores.

2.2 HIPÓTESIS

2.2.1 Estudio 1. Validación de la EQ-D:

Hipótesis 1: La versión española de la EQ-D presentará buena fiabilidad temporal (correlación de Pearson superior a .70) y buena consistencia interna (alfa de Cronbach superior a .80).

Hipótesis 2: La versión española de la EQ-D presentará una estructura unifactorial.

Hipótesis 3: La puntuación de la versión española de la EQ-D correlacionará positiva y de forma elevada (.50-.80) con las puntuaciones en la MAAS y con las facetas de Actuación Consciente, Descripción, Observación, No juicio y No reactividad de la FFMQ.

Hipótesis 4: La puntuación de la versión española de la EQ-D correlacionará negativamente y de forma elevada (.50-.80) con sintomatología depresiva (medida con el CES-D y con la DASS-21 Depre), negativamente con ansiedad y estrés (medidas

con la STAI-S, la DAS-21 Anx y la DASS-21 Stress) y también negativa y de forma elevada con evitación experiencial (medida con la AAQ).

Hipótesis 5: La EQ-D detectará cambios en una muestra de TLP después de una intervención de mindfulness.

Hipótesis 6: Las puntuaciones en EQ-D de la muestra clínica serán inferiores que en las muestras no clínicas (con o sin experiencia meditativa).

Hipótesis 7: Las puntauciones en EQ-D de la muestra con experiencia meditativa serán superiores a las de la muestra sin experiencia meditativa.

2.2.2 Estudio 2. Procesos comunes entre la toma de ayahuasca y el mindfulness:

Hipótesis 8: Las puntuaciones en la EQ-D serás superiores 24 horas después de la toma de ayahuasca.

Hipótesis 9: Las puntuaciones en las distintas facetas de la FFMQ serán superiores 24 horas después de la toma de ayahuasca.

2.2.3 Estudio 3. Meditación, valores y procesos mediadores:

Hipótesis 10: Las puntuaciones en las escalas de valores VLQ y ELS serán superiores en meditadores que en no meditadores.

Hipótesis 11: Las puntuaciones en las escalas de valores VLQ y ELS serán superiores en meditadores a diario que en meditadores con menor frecuencia.

Hipótesis 12: Los grupos con mayor frecuencia de práctica meditativa mostraran mayores puntuaciones en EQ-D y en FFMQ.

Hipótesis 13: Las puntuaciones en EQ-D y en FFMQ setán variables mediadoras entre la práctica meditativa y las puntuaciones en escalas de valores (VLQ y ELS).

3. RESULTADOS

ARTICULO 1

Assessing decentering: validation, psychometric properties and clinical usefulness of the experiences questionnaire in a Spanish sample.

Available online at www.sciencedirect.com

ScienceDirect

Behavior Therapy 45 (2014) 863–871

Behavior Therapy

www.elsevier.com/locate/bt

Assessing Decentering: Validation, Psychometric Properties, and Clinical Usefulness of the Experiences Questionnaire in a Spanish Sample

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Decentering is defined as the ability to observe one's thoughts and feelings in a detached manner. The Experiences Questionnaire (EQ) is a self-report instrument that originally assessed decentering and rumination. The purpose of this study was to evaluate the psychometric properties of the Spanish version of EQ-Decentering and to explore its clinical usefulness. The 11-item EQ-Decentering subscale was translated into Spanish and psychometric properties were examined in a sample of 921 adult individuals, 231 with psychiatric disorders and 690 without. The subsample of nonpsychiatric participants was also split according to their previous meditative experience (meditative participants, $n = 341$; and nonmeditative participants, $n = 349$). Additionally, differences among these three subgroups were explored to determine clinical validity of the scale. Finally, EQ-Decentering was administered twice in a group of borderline personality disorder, before and after a 10-week mindfulness intervention. Confirmatory factor analysis indicated acceptable model fit, ${}_{sb}\chi^2 = 243.8836$ ($p < .001$), CFI = .939, GFI = .936, SRMR = .040, and RMSEA = .06 (.060–.077), and psychometric properties were found to be satisfactory (reliability: Cronbach's $\alpha = .893$; convergent validity: $r > .46$; and divergent validity: $r < -.35$). The scale detected changes in decentering after a 10-session intervention in mindfulness ($t = -4.692$, $p < .00001$). Differences among groups were significant ($F = 134.8$, $p < .000001$), where psychiatric participants showed the lowest scores compared to nonpsychiatric meditative and nonmeditative participants. The Spanish version of the EQ-Decentering is a valid and reliable instrument to assess decentering either in clinical and nonclinical samples. In addition, the findings show that EQ-Decentering seems an adequate outcome instrument to detect changes after mindfulness-based interventions.

Keywords: decentering; mindfulness; Experiences Questionnaire; metacognitive awareness

Increased metacognitive awareness has been suggested to underlie the beneficial effects of mindfulness trainings (Bieling et al., 2012; Hölzel et al., 2011). Metacognitive awareness is defined as the ability to be unentangled from the contents of awareness, observing elements of the experience as events and not as static entities (Olendzki, 2005). In a recent comprehensive review of the mechanisms of mindfulness, Hölzel and colleagues proposed that a deidentification from some parts of mental contents could be experienced even in the earliest stages of mindfulness training (Hölzel et al., 2011). Such an "observer perspective" is commonly referred to as decentering and is defined as "the ability to observe one's thoughts and feelings in a detached manner, as temporary events in the mind, as neither necessarily true nor reflections of the self" (Kerr, Josyula, & Littenberg, 2011; Safran & Segal, 1990). Enhancement of this ability with mindfulness practice may lead one to respond less emotionally to internal and external experiences (Shapiro, Carlson, Astin, & Freedman, 2006). In this sense, mindfulness effects may derive from changes in information processing, by cutting off repetitive styles seen in several disorders (Wells, 2002). However, decentering is not exclusive to mindfulness practice. Other therapies, such as Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) or Metacognitive-Based Therapy, utilize decentering as a key process contributing to beneficial effects, without involving meditation practices (Moritz et al., 2011; van der Heiden, Muris, & van der Molen, 2012; Wells et al., 2010). In this regard, some authors have already suggested that efficacy of cognitive behavior therapy (CBT) to treat depression may rely on metacognitive awareness rather than on cognitive-content modification (Teasdale, Segal, & Williams, 1995). In a posterior study, Teasdale et al. (2002) demonstrated that patients with major depression treated with CBT showed higher posttreatment metacognitive awareness compared to a group receiving standard clinical management. Furthermore, lower levels of metacognitive awareness at baseline predicted earlier relapse in subjects who had recently suffered from major depression.

Teasdale and co-authors initially designed a measure of metacognitive awareness, but it was so time-consuming that it precluded its application in more practice-oriented settings (Teasdale et al., 2002). Soon after, an alternative scale, the Experiences Questionnaire (EQ), was developed and designed to assess decentering so as to operationalize changes that occurred during metacognitive-based therapies. Some studies demonstrated that the EQ was able to detect decentering ability in both recovery and protection against relapse in a randomized clinical trial with patients suffering from major depressive disorder (MDD; Fresco, Segal, Buis, & Kennedy, 2007; Segal et al. 2006). Particularly, gains in decentering were greater in patients who responded to CBT than in those who responded to antidepressant medications; and responders to CBT with higher EQ-Decentering scores appeared to be more protected against further relapses. Higher decentering scores

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0005-7894/45/863-871/$1.00/0

observed in CBT responders but not in antidepressant medication responders may indicate that such capability is not only mediated by clinical improvement, as it normally happens with other psychological vulnerability markers (i.e., dysfunctional attitudes or attributional styles; see Ingram, 1990, for a revision). It is reasonable to think that improvements in decentering may be specific to psychotherapy. Surprisingly, only a few studies have addressed decentering changes, measured with EQ-Decentering, related to mindfulness interventions (Carmody, Baer, Lykins, & Olendzki, 2009; Fresco, Segal, et al., 2007; Tanay, Lotan, & Bernstein, 2012).

The EQ is a brief and easy-to-administer scale validated by Fresco and colleagues (Fresco, Moore, et al., 2007). Initial psychometric analyses did not confirm a two-factor structure of the original scale, but subsequent confirmatory analyses indicated a unifactorial decentering construct that fit the data well. The items of the decentering factor assess three facets: the ability to distinguish one's self from one's thoughts, the ability to not habitually react to one's negative experiences, and the capacity for self-compassion (Fresco, Moore, et al., 2007). As mentioned above, decentering seems to be an active element in both former cognitive therapies and more recent therapies such as mindfulness and acceptance. Therefore, translation and validation of the EQ-Decentering subscale is necessary to provide a measure that truly assesses this construct. However, the factor structure of the EQ-Decentering subscale has not yet been replicated, and other language versions are needed. The purpose of the current investigation is to study the unifactorial structure and the psychometric properties of the Spanish version of the EQ. Additionally, this study examines the ability of the EQ to measure decentering in meditators, and its use in other psychiatric disorders apart from depression.

Method

PARTICIPANTS

The study sample was composed of 921 individuals (66.8% women) who were invited to participate in the present study; they received no monetary compensation. The subsample of nonpsychiatric volunteers comprised 690 subjects (64.8 % women, mean age of 39.6 [*SD*: 11.8] ranging from 18 to 75) and was recruited from the Nursing and Psychology Schools via online recruitment and using an Internet-based commercial system (www.surveymonkey.com). After inclusion into the study, participants were asked about meditative experience in a closed question ("Have you ever practiced any kind of meditation?"). If they responded "yes," they were asked a series of follow-up questions: "What kind of meditation?"; "How long have you been practicing meditation?"; "How often do you practice per week?"; "How long do you practice in each session?" In the subsample of nonpsychiatric volunteers, 341 individuals reported meditative experience (average meditative experience was 7.15 years) and 349 reported no meditative experience.

The subsample of patients with psychiatric disorders was composed of 231 participants (72.7% women), with a mean age of 34.5 (*SD*: 11.3), ranging from 18 to 68. These patients were recruited from the psychiatric outpatient facilities of the Hospital de la Santa Creu i Sant Pau and the Althaia Foundation. Participants met DSM-IV criteria for borderline personality disorder (BPD; $n = 59$), MDD ($n = 44$), eating behavior disorder ($n = 70$), or cocaine dependence ($n = 58$). None of the patients reported previous meditative experience. Exclusion criteria for patients were: acute phase of the disease or psychotic disorder, mental retardation, sensory deficiencies, or linguistic difficulties that limit ability to fill out the questionnaires.

The study protocol was approved by the local Ethical Committee, and all participants signed a consent form indicating their willingness to participate. They were informed about the purpose of the study and they were told that their answers would be treated confidentially.

MEASURES

Decentering Questionnaire

The EQ (Fresco, Moore, et al., 2007) is a 20-item self-report scale in which participants rate items on a 7-point Likert-type scale (1 = *never* to 7 = *all the time*), assessing decentering and rumination. Based on the psychometric characteristics of the original scale—which showed poor loadings of other items placed on rumination factor and a robust structure for decentering factor (Fresco, Moore, et al., 2007)—only the EQ-Decentering is used for the present study. It is an 11-item self-report measure of decentering. Items are rated on a 5-point Likert scale (1 = *never* to 5 = *always*). Original scale of EQ showed high internal reliability; Cronbach's alpha = .90 (Fresco, Moore, et al., 2007).

Mindfulness Measurements

The Spanish version of the Five Facet Mindfulness Questionnaire (FFMQ; Cebolla et al., 2012) is an instrument based on five independently developed mindfulness questionnaires and consists of five subscales: observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience (Baer et al., 2008). This is

a 39-item scale rated on a 5-point Likert scale (1 = *never or very rarely true* to 5 = *very often or always true*). Cronbach's α for the Spanish version of FFMQ range from .8 to .91 (Cebolla et al., 2012). The Spanish version of the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003; Soler, Tejodor, et al., 2012) is a 15-item self-report measure that assesses frequency of mindfulness states in daily life. Items are rated on a 6-point Likert scale (1 = *never*, 6 = *always*). Reliability of the Spanish MAAS scale is high (α = .89; Soler, Tejedor, et al.).

Acceptance and Action Questionnaire

The Spanish version of Acceptance and Action Questionnaire (AAQ-II; Hayes et al., 2004; Ruiz, Langer Herrera, Luciano, Cangas, & Beltrán, 2013) is a 9-item self-report measure of experiential avoidance. Items are rated on a 7-point Likert scale (1 = *never true*, 7 = *always true*) with higher scores indicating greater experiential avoidance. The Spanish version of this scale has a Cronbach's α between .75 and .93 (Ruiz et al., 2013).

Clinical Severity Scales

The State subscale of the Spanish version of the Spielberger State Anxiety Inventory (STAI-S; Guillén-Riquelme & Buela-Casal, 2011) is composed by 20 items based on a 4-point Likert scale and it was designed to assess current anxiety level. Reliability for the State subscale of the STAI is .94. The Spanish version of the Center of Epidemiologic Studies–Depression scale (CES-D; Soler et al., 1997) is a self-administered instrument that evaluates depressive symptomatology in the previous week. It is a 20-item scale rated from 0 (*never or less than a day*) to 3 (*a lot, always or between 5 and 7 days*). Cronbach's α of the Spanish version is .90. Spanish version of Depression, Anxiety and Stress Scales short-form (DASS-21; Bados, Solanas, & Andrés, 2005; Lovibond & Lovibond, 1995) is a set of three self-report scales where respondents rate the extent to which they have experienced depression, anxiety, and stress using a 4-point severity/frequency scale over the past week. Cronbach's α values for Depression, Anxiety and Stress subscales are, respectively: .84, .70, and .82. The Borderline Symptom List–23 (BSL-23; Bohus et al., 2008; Soler et al., 2013) is a 23-item self-rating instrument used to assess the typical symptomatology and severity of BPD. The original instrument and the validated Spanish version have shown good psychometric properties, with high internal consistency and capacity to discriminate BPD from other Axis I diagnosis (Bohus et al., 2008) and levels of severity among patients with BPD. The scale shows high reliability (Cronbach's α = .95).

PROCEDURE

Nonpsychiatric participants (n = 690) filled out the questionnaires online (following an Internet protocol) or on paper in a university classroom. Subjects of the clinical subsample (n = 231) completed all the questionnaires during an outpatient clinic visit at the hospital. EQ-Decentering was translated from English into Spanish by two native bilingual English Spanish speakers. An English native speaker—with experience in translating scientific texts—back-translated the resulting Spanish version into English. Any discrepancies between the Spanish and English versions were resolved by agreement. The AAQ-II, MAAS, STAI-S, and CES-D were only obtained from the clinical sample. DASS was only administered to nonpsychiatric participants for an easy assessment of affective symptoms. A subsample of 42 BPD patients underwent a 10-session dialectical behavior therapy mindfulness module (Soler, Valdepérez, et al., 2012) and EQ-Decentering was administered before and after this module.

DATA ANALYSES

A Confirmatory Factor Analysis (CFA) was applied to test whether the data fit the unifactorial model of the EQ-Decentering using the whole sample (n = 921). Maximum likelihood CFA was conducted using the EQS 6.1 program (Bentler, 1985). Following Kline's (2010) recommendations, a combination of statistics was used to estimate the goodness of fit. Maximum likelihood with robust correction was used to avoid distributional problems of data set. Therefore, the following indexes were used: Satorra-Bentler chi-square ($_{sb}\chi^2$), which incorporates a scaling correction for the chi-square statistic when distributional assumptions are violated; comparative fit index (CFI) to assess the adequacy of each model, which compares the fit of the model to a null model and establishes the absence of relationships among the variables; goodness of fit index (GFI) was also used to measure the proportion of variance-covariance accounted for by the proposed model (CFI and GFI > .90); standardized root mean square residual (SRMS) and root mean squared error of approximation (RMSEA), which penalize models that are not parsimonious and are sensitive to misspecified factor covariance (RMSEA and SRMR < .08). These fit statistics and the chi-square were selected based on their performance and stability (Bentler & Bonet, 1980).

Internal reliability of the EQ-Decentering subscale was explored with Cronbach's α coefficient as well as with the method of two halves with Spearman-Brown correction. Test-retest reliability of the EQ-Decentering was studied by means of a

Pearson's correlation in a subsample of 33 subjects of the nonmeditative experienced group that were evaluated twice in a 1–2 week interval. Convergent construct validity of the EQ-Decentering was calculated using Pearson's correlations with subscales of the FFMQ and MAAS. Divergent validity was assessed by correlating EQ-Decentering with DASS-21, STAI-S, and AAQ scales. We hypothesized that decentering may demonstrate a significant positive correlation with mindfulness scales and significant negative correlations with experiential avoidance (AAQ-II) and clinical scales (i.e., DASS-21 and STAI-S).

The usefulness of the EQ-Decentering as an outcome measure was explored with a Student's *t* means comparison in the subsample that received 10 weeks of mindfulness intervention. To finally determine whether response to treatment entailed both gains in decentering and in psychiatric symptoms, patients were split into responders and nonresponders using the median score on BSL-23 (median = 1.57; BSL-23 < = 1.6 responders; BSL-23 > 1.6 nonresponders). Similar to Fresco, Moore, et al. (2007), clinical validity of the scale was also examined by comparing the EQ-Decentering scores of nonpsychiatric participants—with and without meditative experience—and patients. This analysis was performed by means of a one-way ANOVA. Post hoc *t*-test analyses were also performed in order to acknowledge differences among clinical and control groups. All data were analyzed using the PASW Statistics 19.0 software package for Windows.

Results

All demographics and clinical data of all participants are displayed in Table 1.

Following the criteria mentioned above, CFA revealed a unifactorial structure of the EQ-Decentering subscale, in which all goodness fit indexes fell within the cutoff range for acceptable fit: $_{sb}\chi^2$ = 243.8836 ($p < .001$), CFI = .939, GFI = .936, SRMR = .040, and RMSEA = .06 (.060–.077). The factor loadings of all EQ-Decentering items are shown in Table 2.

Table 1
Demographics of All Participating Subjects (n = 921)

	Psychiatric Sample (n = 231)	Nonpsychiatric Sample (n = 690)	p
Gender (% women)	72.7%	64.8%	.029
Age	34.49 ± 11.3	39.57 ± 11.8	<.001
Years of education	10.03 ± 3.6	15.95 ± 2.97	<.001

Note. Values represent means and *SD* (±) or percentages when appropriated.

Table 2
Item Factor Loadings

EQ items	M ± SD	λ	r_{tot}
1- Soy más capaz de aceptarme a mí mismo como soy.	3.69 ± 1.03	.759	.694
2- Puedo enlentecer mi pensamiento en momentos de estrés.	3.08 ± 0.95	.606	.575
3- Me doy cuenta de que no me tomo las dificultades de forma tan personal.	3.19 ± 1.01	.672	.631
4- Puedo separar mis pensamientos y sentimientos de mi mismo.	2.94 ± 1.03	.740	.708
5- Puedo tomarme tiempo para responder a las dificultades.	3.37 ± 0.92	.722	.675
6- Me puedo tratar de forma amable.	3.67 ± 0.96	.760	.697
7- Puedo observar sentimientos desagradables sin ser arrastrado hacia ellos.	3.29 ± 0.95	.722	.681
8- Tengo la sensación de que soy completamente consciente de lo que está sucediendo a mi alrededor y dentro de mí.	3.64 ± 0.85	.499	.482
9- Veo que, en realidad, no soy mis pensamientos.	3.22 ± 1.11	.485	.470
10- Soy consciente de sentir mi cuerpo como un todo.	3.42 ± 1.12	.587	.565
11- Veo las cosas desde una perspectiva más amplia.	3.59 ± 0.95	.770	.731

Note. Means (M), standard deviations (SD), standardized factor loadings (λ one-factor solution), and corrected item-total correlations (r_{tot}) for EQ items.

Two additional CFA models were performed for clinical and nonclinical participants, using the same criteria. Both CFA revealed a unifactorial structure of the EQ-Decentering subscale with acceptable goodness fit indexes: $sb\chi2$ = 67.1797 ($p < .001$), CFI =.971, GFI = .931, SRMR = .046, and RMSEA =.073 (.053–.092); $sb\chi2$ = 216.9789 ($p < .001$), CFI = .904, GFI = .919, SRMR = .052, and RMSEA = .077 (.067–.087), respectively.

The EQ-Decentering demonstrated good internal consistency in the whole sample (Cronbach's α = .893). Split-halves reliability coefficient with the Spearman-Brown correction confirmed reliability findings for the whole sample with a value of .868. Regarding test-retest reliability, a correlation of .876 ($p < .001$) was found between first and second assessment, providing good temporal stability.

The EQ-Decentering results correlated positively and significantly with measures of mindfulness with *r* values above .46 (individual *r* values for each measure are displayed in Table 3). Besides, statistically significant negative correlations were found between EQ-Decentering and measures of anxiety (STAI-S, DASS-21 anxiety), depression (CES-D,

Table 3
Correlations of the EQ With Clinical Measures and Mindfulness Measures

	EQ
Convergent Validity	
MAAS	.576**
FFMQ Observe	.463**
FFMQ Describe	.507**
FFMQ Act awareness	.540**
FFMQ Nonjudge	.586**
FFMQ Nonreact	.723**
Divergent Validity	
STAI-S	-.351*
CESD	-.497**
DASS-21 Depre.	-.538**
DASS-21 Anx.	-.468**
DASS-21 Stress	-.563**
AAQ	-.655**

Note. MAAS = Mindful Attention Awareness Scale; FFMQ = Five Facet Mindfulness Questionnaire; STAI-S = Spielberger State Anxiety Inventory; CESD = Center of Epidemiologic Studies–Depression scale; DASS-21 = Depression, Anxiety and Stress Scales short-form; AAQ = Acceptance and Action Questionnaire.
* $p < 0.005$, ** $p < 0.001$.

DASS-21 depression), stress (DASS-21 stress) and experiential avoidance (AAQ-II; see Table 3). Additionally, correlations with mindfulness scales were carried out by splitting the whole sample among psychiatric patients, nonmeditative experienced individuals, and meditative experienced participants. The results showed that EQ-Decentering correlated similarly with MAAS and four of the FFMQ facets ($r > .3$; $p < .005$), with the exception of the Observe facet, in which meditative experienced participants showed the highest correlation ($r = .5$, $p < .001$) while psychiatric participants showed the lowest ($r = .2$, $p < .05$).

Mean EQ-Decentering score at baseline was 25.59 (*SD*: 7.23) and 30.05 (*SD*: 7.46) posttreatment. These results showed that EQ-Decentering was able to detect improvements in decentering after the mindfulness intervention with significant mean differences between pre- and postintervention ($t = -4.692$; $df = 41$, $p < .00001$) with a medium effect size ($d = .60$). The scores on EQ-Decentering were significantly different between responders and nonresponders (mean = 33.1, $SD = 5.3$ and mean = 23.1, $SD = 6.7$, respectively; $F = 18.9$; $df = 1, 26$; $p = .0001$; Cohen's $d = 1.66$).

One-way ANOVA showed a significant main effect of group ($F = 134.8$; $df = 2, 902$; $p < .000001$). Post hoc Bonferroni analyses of group differences pointed that all groups differed significantly among them ($p < .001$), where the most significant difference was between patients and meditative participants (Table 4).

Discussion

The results reveal that the Spanish version of the EQ-Decentering has a confirmed one-factor structure with acceptable fit indexes and shows similar psychometric characteristics of the original measure (Fresco, Moore, et al., 2007). The 11-item scale has good internal and test-retest reliability and fine convergent and divergent validity with other scales of mindfulness and clinical screening, respectively. In addition, the EQ-Decentering subscale demonstrates a capability to distinguish between psychiatric and nonpsychiatric subjects. These findings bring about a useful and clinically relevant measure of decentering, a construct likely to underlie the effectiveness of meta-cognition-based therapies, mindfulness interventions, and even CBT (Leigh & Bowen, 2005; Mac Killop & Anderson, 2007).

Correlation results showed very satisfactory convergent and divergent validities. Indeed, scores on EQ-Decentering subscale were positively correlated with all measures of mindfulness: FFMQ subscales (observe, describe, act with awareness, nonjudge, nonreactivity to inner experience) and MAAS. By contrast, EQ-Decentering was negatively correlated with measures of anxiety, depression, stress, and avoidance (STAI-S, DASS, CES-D, and AAQ). These findings are in complete accordance with the original validation of the scale, where negative correlations with experiential avoidance, anxiety, and depression symptoms were reported, as well as positive correlations with reappraisal ability to emotion regulation (Fresco, Moore, et al., 2007). When exploring relations between EQ-Decentering and FFMQ facets separating

Table 4
EQ Scores Among Patients ($n = 216$), Participants With Meditative Experience (ME; $n = 341$) and Without Meditative Experience (NME; $n = 348$)

	Patients	ME	NME	ANOVA	Post hoc	*d*
EQ Mean ± SD	31.926 ± 7.85	41.196 ± 5.99	36.836 ± 6.12	F = 134.8	Clinical < ME*	−1.33
				p < .000001	Clinical < NME*	−0.7
					ME > NME*	0.72

Note. Means and SD are reported. ANOVA and Bonferroni post hoc analyses and effect sizes (Cohen's *d*) are represented. *$p < .001$.

subsamples, convergent validity was confirmed, with the exception of Observe facet, where the best correlations appeared in those participants with meditative experience. This seems to confirm some kind of specificity of observation in meditative experience but not in decentering itself. Accordingly, Baer and colleagues (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) found that only four of the FFMQ facets (i.e., all except Observe) were truly components of an overall mindfulness construct.

As previously mentioned, decentering is sensitive to meditation practice. However, EQ had not been previously used to compare this ability between individuals with and without meditation experience. Our findings showed that individuals with meditative experience had significantly higher decentering ability than the comparative groups (i.e., nonmeditative individuals and patients). Interestingly, EQ-Decentering scores showed the highest correlation with nonreactivity to inner experience of the FFMQ, suggesting that this mindfulness facet resembles one of the elements of decentering, that is, the ability not to habitually react to one's negative experience. Scores in other mindfulness facets and MAAS also showed significant correlations with EQ-Decentering, indicating again some overlap between mindfulness and decentering. In this regard, most of the contemporary psychological models describe mindfulness as a meta-cognitive process where a given subject approaches any mental experience independent of the content but as the experience itself (Teasdale, 1999). Indeed, any mindfulness-based intervention highlights the idea that "thoughts are not facts." And what is more, other mindfulness questionnaires (e.g., Toronto Mindfulness Scale) assess decentering, although not as a core aspect of mindfulness but a by-product of the training itself (Tanay, Lotan, & Bernstein, 2012).

Our findings also showed that the lowest scores in decentering corresponded to patients suffering from different psychiatric conditions (i.e., cocaine dependence, eating disorders, and borderline personality disorder) and not exclusively MDD, as reported by Teasdale and colleagues (Fresco, Moore, et al., 2007; Teasdale et al., 2002). Such low scores may be indicative of poor decentering as a transdiagnostic vulnerability factor, similar to self-focused attention, that could be shared among mental disorders (Ingram, 1990). Altogether, this is congruent with Fresco's conceptualization of decentering as a necessary capability for healthy cognitive, psychological, and social functioning. As Teasdale et al. suggested, increases in meta-awareness after standard CBT could underlie later clinical improvements associated with intervention. Remarkably, Bieling et al. (2012) found that depressed patients who received acute antidepressant medication experienced increased decentering, and the authors suggested that this increase may be a by-product of depressive improvement. By contrast, long-term decentering increases were only observed in remitted patients receiving a mindfulness-based cognitive therapy, but not in those remitted patients with medication alone. Such increases in decentering were predicitive of depressive symptoms after 6-month follow-up, and could, therefore, be useful in preventing relapses. Therefore, although low decentering appears to be a characteristic of clinical conditions, this capability might be trainable. In this regard, those patients who underwent a 10-week mindfulness intervention significantly improved decentering, for which EQ-Decentering showed a capacity to detect such changes. Finally, increments in decentering capability might underlie more durable treatment response, as indicated by Fresco, Segal, et al. (2007), and EQ-Decentering is the assessment instrument of choice.

There are some methodological issues that deserve comment. First, recruitment of the sample was heterogeneous as participants were enrolled from different pools by convenience sampling. In addition, measurement invariance was not tested and constitutes a limitation as it is not possible to know whether EQ behaves similarly across populations, raising questions about the appropriateness of using the scale in different samples. However, the advantage of this type of sampling is the ease with which data can be gathered, but the disadvantage is the lack of representativeness of the sample. Linked to this issue, recruiting part of the sample online might have biased the results. Second, alternative solutions were not tested with the CFA, although other factor solutions might have provided similar or enhanced model fits. However, 1-factor structure adhered to the theoretical model proposed by Fresco and colleagues. Third, it is not possible to assure that nonpsychiatric participants were completely healthy and not suffering from any mental illnesses. Finally, changes in EQ-Decentering after a mindfulness intervention were explored in the subsample of patients with BPD, providing a moderate effect size. However, the results still offered valuable information regarding the psychometric characteristics of the EQ-Decentering, as patients with BPD are seriously disturbed clients with difficulties engaging in meditation (Dimidjian & Linehan, 2003).

In summary, the Spanish version of the EQ-Decentering is a valid and reliable instrument to measure decentering either in clinical and nonclinical

samples (meditative naïve or not). In addition, the findings also show that EQ-Decentering is an adequate outcome instrument to detect changes after metacognition-based therapies and mindfulness-based interventions.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

Available online at www.sciencedirect.com

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Behavior Therapy 48 (2017) 139–140

Behavior Therapy

www.elsevier.com/locate/bt

Corrigendum

Corrigendum to "Assessing Decentering: Validation, Psychometric Properties, and Clinical Usefulness of the Experiences Questionnaire in a Spanish Sample" [Behavior Therapy 45 (2014) 863- 871]

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DOI of original article: http://dx.doi.org/10.1016/j.beth.2014.05.004.

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ARTICULO 2

Exploring the therapeutic potential of Ayahuasca: acute intake increases mindfulness-related capacities.

Psychopharmacology
DOI 10.1007/s00213-015-4162-0

ORIGINAL INVESTIGATION

Exploring the therapeutic potential of Ayahuasca: acute intake increases mindfulness-related capacities

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Received: 21 September 2015 / Accepted: 15 November 2015

Abstract
Background Ayahuasca is a psychotropic plant tea used for ritual purposes by the indigenous populations of the Amazon. In the last two decades, its use has expanded worldwide. The tea contains the psychedelic 5-HT_{2A} receptor agonist *N*,*N*-dimethyltryptamine (DMT), plus β-carboline alkaloids with monoamine-oxidase-inhibiting properties. Acute administration induces an introspective dream-like experience characterized by visions and autobiographic and emotional memories. Studies of long-term users have suggested its therapeutic potential, reporting that its use has helped individuals abandon the consumption of addictive drugs. Furthermore, recent open-label studies in patients with treatment-resistant depression found that a single ayahuasca dose induced a rapid antidepressant effect that was maintained weeks after administration. Here, we conducted an exploratory study of the psychological mechanisms that could underlie the beneficial effects of ayahuasca.

Methods We assessed a group of 25 individuals before and 24 h after an ayahuasca session using two instruments designed to measure mindfulness capacities: The Five Facets Mindfulness Questionnaire (FFMQ) and the Experiences Questionnaire (EQ).
Results Ayahuasca intake led to significant increases in two facets of the FFMQ indicating a reduction in judgmental processing of experiences and in inner reactivity. It also led to a significant increase in decentering ability as measured by the EQ. These changes are classic goals of conventional mindfulness training, and the scores obtained are in the range of those observed after extensive mindfulness practice.
Conclusions The present findings support the claim that ayahuasca has therapeutic potential and suggest that this potential is due to an increase in mindfulness capacities.

Keywords Ayahuasca · Therapeutic potential · Mindfulness · Decentering · Human

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Published online: 27 November 2015

Introduction

Ayahuasca is a psychotropic beverage prepared by infusing in water the stalk of *Banisteriopsis caapi* together with the leaves of *Psychotria viridis* (Rubiaceae) or *Diplopterys cabrerana* (Malpighiaceae). This tea has been used for centuries in Amazonian traditions for ritual and medical purposes (Schultes 1980), and more recently, its use has extended to North American and European countries (Tupper 2008). *B. caapi* contains β-carboline alkaloids, mainly harmine, tetrahydroharmine (THH), and to a lesser extent, harmaline (Rivier and Lindgren 1972; McKenna et al. 1984). These alkaloids show monoamine-oxidase (MAO) inhibiting properties (Buckholtz and Boggan 1977a), while THH is also a serotonin reuptake inhibitor (Buckholtz and Boggan 1977b). The leaves of *P. viridis* and *D. cabrerana*, the most common admixtures used in ayahuasca preparation, contain the psychedelic indole *N,N*-dimethyltryptamine or DMT (Rivier and Lindgren 1972; Schultes 1980).

DMT is structurally related to the neurotransmitter serotonin (5-hydroxytryptamine; 5-HT) and shows agonist activity at the 5-HT_{2A} and 5-HT_{1A} receptors. More recently, it has been shown that DMT also interacts with the sigma-1 receptor (Fontanilla et al. 2009). DMT induces intense modifications of the ordinary state of awareness when administered parenterally, but it is devoid of psychoactivity when ingested (Riba et al. 2015) due to degradation by MAO (Suzuki et al. 1981) and cytochrome-dependent mechanisms (Riba et al. 2015). Ayahuasca is a remarkable ethnopharmacologic combination in which the presence of the MAO-inhibiting β-carbolines prevents the gastrointestinal degradation of DMT, allowing its access to systemic circulation and the CNS (Riba 2003).

Ayahuasca is receiving increased attention from the general public and biomedical researchers for its therapeutic potential (Frood 2015). Acute administration induces an introspective dream-like experience characterized by visions and autobiographic and emotional memories (Riba et al. 2001). Studies of long-term users have suggested that ayahuasca may have beneficial effects for individuals with substance use disorders. Reports of decreased consumption of alcohol, cocaine, and other addictive drugs are common in regular ayahuasca users (Fábregas et al. 2010; Thomas et al. 2013). Ayahuasca may also have potential to treat other psychiatric conditions. In a recent pilot study conducted in patients with treatment-resistant depression, the authors reported a rapid-onset antidepressant effect that was maintained weeks after administration of the single dose (Osório et al. 2015). These results have been replicated using a larger patient sample (Sanches et al. 2015).

Despite these initial reports of beneficial psychological effects and of amelioration of some forms of psychopathology, little is know with regard to the psychological mechanisms that may underlie these effects. Several aspects of the ayahuasca-induced subjective experience are analogous to the experience of mindfulness practice as understood by contemporary Western psychological conceptualizations. Although mindfulness is a complex construct difficult to define (Grossman 2008, 2011), from a secular perspective, being "mindful" entails a particular quality of awareness, that is present-centered, non-reactive, characterized by openness, acceptance, and by a non-judgmental stance towards the experience (Kabat-Zinn 1990; Bishop et al. 2004; Baer et al. 2006). Another construct, closely related to mindfulness is the notion of "decentering". Decentering or "defusion" is the ability to take a detached view of one's own thoughts and emotions considering them as impermanent events of the mind (Fresco et al. 2007b). The analogy is based on the following: First, studies on the phenomenology of the ayahuasca experience emphasize the detached view of one's own thoughts and emotions that the substance elicits (Shanon 2002). Increasing this capacity is the goal of mindfulness interventions (Brown and Ryan 2003; Shapiro et al. 2006; Holzel et al. 2011). The recollection of highly emotional events simultaneous with a detached view of these events, as induced by ayahuasca (Riba et al. 2001, 2006), may help the reprocessing of emotional experiences. Second, both ayahuasca and mindfulness practice seem to induce similar effects on other domains including increased awareness, changes in self-perspective, decreased hopelessness, and positive impact on general well-being (Santos et al. 2007).

Based on the common aspects of the ayahuasca experience and mindfulness practice, the present study aimed to further understand the psychological experience induced by ayahuasca and to explore if an enhancement of mindfulness-related capabilities could be achieved through ayahuasca use. To this end, we assessed the effects of the intake of a single dose of ayahuasca on several mindfulness-related measures.

Experimental procedures

Participants and study procedure

The investigators contacted circles of individuals involved in ayahuasca use and explained to them the goals and methods of the study. Contacts were asked to pass the information to their acquaintances and a sample of 25 individuals (14 females) was recruited. Exclusion criteria included current psychiatric disorder and alcohol or other substance use disorders and evidence of current significant medical illness. Their mean±SD age was 43.6±12 years, and were relatively well-educated, with an average 15±4 years of education. They all have an interest in psychoactive drugs for personal experimentation. Twenty-three had prior experience with ayahuasca, having taken it on average 79 times (range 1–500). The other two took it for the first time in the course of the study. All

participants had abstained from ayahuasca for at least 15 days before assessment and neither consumed alcohol, medications, or any other drugs in the day prior to ayahuasca intake nor in the 24 h thereafter.

Ayahuasca was taken in a non-religious setting, and participants were not affiliated to any ayahuasca religion. The main motivation of the participants was to use ayahuasca as a tool for self-knowledge and introspection. Ayahuasca was taken in a dimly lit room, with participants sitting or lying down on mattresses. Recorded music was played throughout the session, and participants could freely leave the room to go to the bathroom or to a room next door if they wished to stay on their own for some time. Experimenters were present before, during, and after the ayahuasca session and directly administered the questionnaires to the participants.

The study was conducted in accordance with the Declaration of Helsinki and subsequent amendments concerning research in humans and was approved by the Sant Pau Hospital Ethics Committee. All volunteers gave their written informed consent to participate.

Participants were requested to first respond to the questionnaires described below during the 24 h prior to the ayahuasca session they had planned to attend. They were instructed to respond to the pre-intake questions indicating how they normally felt and acted in the absence of any psychoactive substance. Following the ayahuasca session, they were again asked to respond to the questions indicating how they have felt and acted in the 24 h thereafter.

Participants recorded the total volume of ayahuasca ingested by each individual during the session and facilitated samples for analysis. Alkaloid concentrations were determined using a previously described method implementing liquid cromatography-electrospray ionization-tandem mass spectrometry (McIlhenny et al. 2009). Based on the analysis, participants ingested on average 43.6-mg DMT (range 28.82–69.81), a moderate dose as compared to the dosages used in a laboratory by our group (Riba et al. 2001).

Measures

Mindfulness facets were assessed using the following psychometric instruments:

The Five Facet Mindfulness Questionnaire (Baer et al. 2006; Cebolla et al. 2012). The FFMQ measures five different factors: (1) Observe: noticing external and internal experiences, e.g., body sensations, thoughts, or emotions; (2) Describe: putting words to, or labeling the internal experience; (3) Acting with awareness: focusing on the present activity instead of behaving mechanically; (4) Non-judging the inner experience: taking a non-evaluative stance towards the present experience, thoughts, or emotions; and (5) Non-reacting to the inner experience: allowing thoughts and feelings to come, without getting caught up in, or carried away, by them. Sample items for each sub-scale include the following: Observe "When I take a shower or bath, I stay alert to the sensations of water on my body"; Describe "I'm good at finding words to describe my feelings"; Acting with awareness "I am easily distracted"; Non-judging "I tell myself I should not be feeling the way I am feeling"; and Non-reacting "I watch my feelings without getting lost in them". Participants were asked to rate the degree of concordance with each statement on a 5-point Likert scale that ranges from 1 (never or very rarely, true) to 5 (very often or always, true). The FFMQ has shown adequate psychometric properties in both non-clinical and clinical samples. Cronbach's α for the Spanish version of FFMQ range from 0.8 to 0.91 (Cebolla et al. 2012), and the internal consistency of the scale in our sample was of 0.83 and 0.86 (pre- and post-intake, respectively).

The Experiences Questionnaire or EQ (Fresco et al. 2007a; Soler et al. 2014b). This instrument comprises 11 items and measures "decentering", defined as the capacity to observe one's thoughts and emotions as temporary events of the mind. The EQ items are scored in a 5-point-Likert-type scale, ranging from *never* to *all the time,* with higher scores indicating more decentering. Sample items include the following: "I can observe unpleasant feelings without being drawn into them" or "I can separate myself from my thoughts and feelings". The Spanish version of the EQ has demonstrated good psychometric properties, including internal consistency in clinical and non-clinical samples. Internal consistency in our sample was 0.88 at pre-intake and 0.94 at post-intake).

To explore if the changes induced by ayahuasca could be comparable to those induced by meditation practice, the MINDSENS Composite Index was also calculated (Soler et al. 2014a). This index includes those FFMQ and EQ items that have proven to be the most sensitive to meditation practice and to discriminate accurately between meditators and no-meditators (Soler et al. 2014a).

Data analysis

Scores on the composite MINDSENS index, the five FFMQ subscales, and the EQ questionnaire were analyzed using repeated-measures analyses of variance (ANOVAs) with ayahuasca session (before vs. after) as factor. Additionally, in view of the high variability in the degree of previous experience with ayahuasca (from 0 to 500 times), a second analysis was conducted introducing this value as a covariate in the repeated-measures ANOVA.

Given the exploratory nature of the present study, no formal correction for multiple comparisons was carried out. Results were considered significant for p values <0.05.

Results

Figure 1 shows the scores obtained for the study variables before and 24 h after the ayahuasca session. The MINDSENS composite index showed a statistically significant increase following the ayahuasca session ($F(1,24)=6.78$, $p=0.016$).

The analysis of the individual questionnaires showed a significant effect of ayahuasca session on the EQ score ($F(1,24)=8.55$, $p=0.007$). Two of the five subscales of the FFMQ also showed significant increases in the 24 h following ayahuasca: Non-Judge ($F(1,24)=7.86$, $p=0.010$) and Non-React ($F(1,24)=5.06$, $p=0.034$).

The introduction of the prior experience with ayahuasca as a covariate in the analysis did not greatly modify the results for the MINDSENS composite index ($F(1,23)=5.26$, $p=0.031$). However, it decreased significance of changes on the EQ questionnaire score ($F(1,23)=6.45$, $p=0.018$) and increased significance of the pre- vs. post-comparison of scores on the FFMQ Non-Judge ($F(1,24)=8.39$, $p=0.008$) and Non-React ($F(1,24)=5.06$, $p=0.009$) subscales.

Despite the changes in F and p values, the overall pattern of results remained unchanged.

Discussion

By exploring the effects of ayahuasca intake on mindfulness capacities, the present study aimed to better understand the psychological mechanisms underlying the therapeutic potential of ayahuasca. Our findings indicate that ayahuasca intake leads to a rapid increase in several mindfulness-related parameters. Two FFMQ facets changed after ayahuasca, suggesting a decrease in the judgmental processing of personal experiences, along with a reduction in inner reactivity. Additionally, decentering ability was also increased after ayahuasca intake. These combined modifications provide an explanatory mechanism that could contribute to the beneficial effects reported for ayahuasca in the treatment of addiction and depression (Thomas et al. 2013; Osório et al. 2015). It is worth mentioning that prior studies showing benefits associated with long-term ayahuasca use have the confounding factor of participants being members of a religious group (Fábregas et al. 2010; Bouso et al. 2012). The present results obtained in a lay setting support the notion that ayahuasca may have therapeutic potential per se in the absence of the religion confound.

The scores in some mindfulness capacities observed after ayahuasca are analogous to those of experienced meditators (Soler et al. 2014a). Thus, Soler and colleagues report the following average scores in their experienced meditator sample: "Non-react", 24.84; "Non-judge", 30.61; EQ, 41.07; and MINDSENS, 3.70. These values are very close and in some cases lower than those obtained here in the post-ayahuasca assessment: "Non-react", 25.56; "Non-judge", 33.16; EQ, 41.41; MINDSENS, 3.66. The similar values obtained in the MINDSENS are a relevant finding. The MINDSENS index was created with those FFMQ and EQ items that were more sensitive

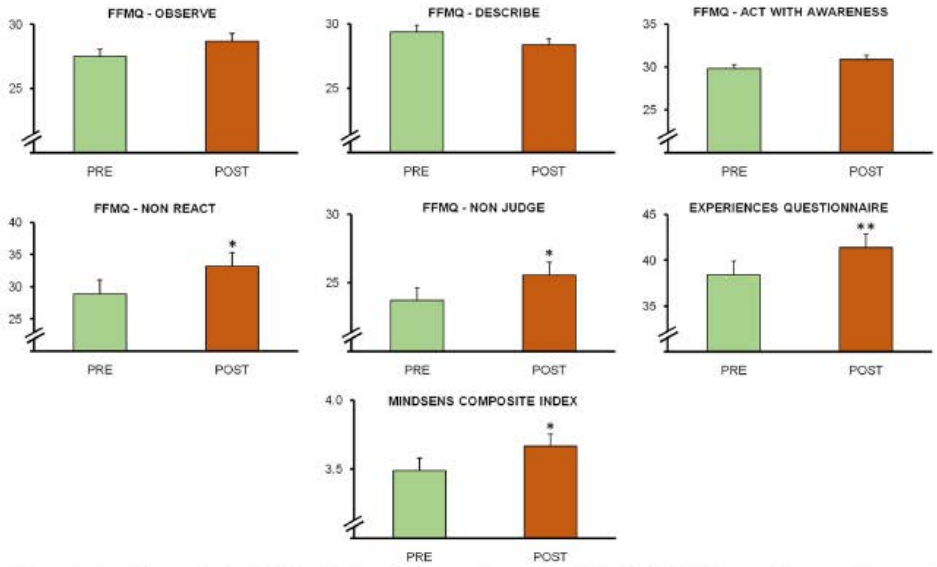

Fig. 1 Ayahuasca-induced changes in the FFMQ subscales, the Decentering score, and the MINDSENS composite score. The *error bars* denote 1 standard error of mean. *$p<0.05$, **$p<0.01$

to meditation practice. This index is sensitive to several aspects of meditation practice, i.e., to the overall years of practice and to the frequency and length of meditative sessions (Soler et al. 2014a). Our study indicates that improvements in mindfulness capacities are not exclusive of mindfulness meditation practice, as they can also be obtained by a pharmacological intervention.

Our results showed that not all mindfulness facets are equally affected by ayahuasca. Analogously, previous studies comparing meditators vs. non-meditators suggested that not all mindfulness facets are equally modified by practice. For example, in a study comparing a large sample of meditators (n=384) to individuals without meditative experience (n=286), the first group scored significantly higher in all FFMQ facets and decentering. However, certain facets such as "Observe", "Non-react", and "Decentering" appear to be more sensitive than the others to formal meditation practice (Soler et al. 2014a, b). Increased ability to "Observe" has been pointed out as essential capacity of meditating individuals (Lilja et al. 2012). Out of the five facets of the FFMQ, significant changes were observed in the "Non-judge" and "Non-react" facets.

Mindfulness is considered a two-factor construct comprising both attentional and attitudinal elements (Bishop et al. 2004). The "Non-judge" and "Non-react" subscales are considered to measure acceptance (Baer et al. 2006). Thus, ayahuasca would particularly foster acceptance of the thoughts and feelings experienced by the individual. This increased self-acceptance could contribute to the therapeutic effects of ayahuasca, as suggested by Thomas (Thomas et al. 2013). Indeed, a state of increased self-acceptance would be clinically useful, since the attitudinal component of mindfulness, rather than the attentional, appears to be particularly impaired in patients with psychopathology (Coffey et al. 2010; Tejedor et al. 2014).

The ayahuasca experience may induce an introspective exposure to emotional memories (Riba et al. 2001, 2006), similar to that used in emotional reprocessing interventions (Foa et al. 1995). As intended in such interventions, the use of ayahuasca may promote a detached relationship with one's own emotions. This detached manner of approaching the inner experience has been defined as "decentering" or "defusion", understood as the metacognitive ability to take a detached view of one's own thoughts and emotions. It allows patients to consider thoughts and emotions as objective temporary events of the mind, rather than statements that are necessarily true (Fresco et al. 2007a).

Deficits in decentering have been postulated as a transdiagnostic index of psychopathology. Compared to healthy controls, it is diminished in individuals with cocaine use disorders, eating disorders, major depression, and borderline personality disorder (Soler et al. 2014a). Increases in decentering have been observed after cognitive behavioral therapy for depression and also after mindfulness-based interventions (Bliss and McCardle 2013; Hayes-skelton et al. 2014). Similar to a study in which increases in decentering were reported in a group of patients responding to antidepressant treatment (Fresco et al. 2007b), our data show that psychotropic substances, in our case ayahuasca, can also enhance this ability. Increases in this capacity would explain findings suggesting that ayahuasca has therapeutic effects in depression (Sanches et al. 2015; Osório et al. 2015), a disorder in which the decentering capacity is impaired (Teasdale et al. 2002; Segal et al. 2006; Carmody et al. 2009).

Our results are in line with the recent research exploring the therapeutic potential of other psychedelic 5-HT_{2A} agonists, substances which in recent years are receiving renewed attention in psychiatry (Sessa and Johnson 2015). For instance, psilocybin was safely administered to advanced-stage cancer patients and proved effective in reducing anxiety and depressive symptoms related to illness (Grob et al. 2011). Promising results have also been reported for lysergic acid diethylamide (LSD), another classic psychedelic (Gasser et al. 2014). From a mechanistic perspective, these drugs show modulatory activity on the amygdala and the anterior cingulate cortex following acute administration (Vollenweider and Kometer 2010; Kraehenmann et al. 2014). These areas are key structures of the emotional brain and their function is deregulated in affective disorders (Pezawas et al. 2005). Regular use of psychedelics has also been associated with differences in brain structure relative to non-users. In a study assessing long-term ayahuasca users, the authors found thinning in the posterior cingulate cortex (PCC), a key hub of the default mode network (Raichle et al. 2001). Thinning in the PCC inversely correlated with prior use of ayahuasca and with scores on self-transcendence (Bouso et al. 2015). This personality trait, which comprises religiousness, spirituality, and transpersonal feelings, was higher in ayahuasca-using subjects. No differences were found with controls with regard to neuropsychological functioning or indicators of psychopathology. This finding suggested that regular ayahuasca use may lead to default mode network deactivation, which is overactive in depression (Sheline et al. 2010). Analogously, conventional mindfulness practice also has an impact on the default mode network (Taylor et al. 2013), indicating further commonalities between the ayahuasca experience and mindfulness training. Although to our knowledge, studies with other psychedelics have not specifically examined modifications in mindfulness capacities, it is possible that psilocybin and LSD also show these facilitating effects. Future studies with these substances should explore this possibility.

The current findings should be taken as preliminary, as the study was intended as exploratory and has some limitations

that need to be considered. First, the characteristics of the participant sample and its relatively limited size could be biasing our results. Prior exposure to ayahuasca may have led to a ceiling effect, as suggested by the increases in significance obtained in the repeated measures ANCOVA for "Non-Judge" and "Non-react" subscales. On the other hand, it can be argued that the fact that a single ayahuasca dose increases mindfulness capacities in experienced users who were already more "mindful" than the general population (as shown for instance by the EQ pre-administration values), underscores the power of ayahuasca to enhance these abilities even when the baseline level is high. Although participants manifested being free of any current psychiatric or medical condition, no rigorous criteria were applied to exclude subjects with past diagnoses of mental disorders. The absence of a control group also limits the generalization of the present findings. However, FFMQ facets and decentering appear to be stable over time (Veehof et al. 2011; Soler et al. 2014b). This makes it unlikely that our results are due to natural fluctuations of these variables, rather than the consequence of ayahuasca intake. Lastly, only one dose of ayahuasca was ingested, although the subjective effects of ayahuasca are dose-dependent (Riba et al. 2001). Future studies should explore the impact of different doses and be conducted using randomized controlled designs.

In summary, the present study provides evidence supporting the claim that ayahuasca has therapeutic potential. The present findings additionally suggest that this is due to increases in mindfulness-related capacities. Further research is warranted to corroborate these results, to test whether the benefits induced by ayahuasca on mindfulness capacities are maintained over time. Positive results would argue strongly in favor of conducting studies involving psychiatric populations.

ARTICULO 3

Meditation practice is associated with a values-oriented life: the mediating role of decentering and mindfulness.

Mindfulness
DOI 10.1007/s12671-017-0702-5

ORIGINAL PAPER

Meditation Practice Is Associated with a Values-Oriented Life: the Mediating Role of Decentering and Mindfulness

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Abstract Clarification of personal values and meditation practice has been associated in most meditation traditions and in academic texts. Both values-related behavior and meditation practice increases well-being, but their relationship has not been well studied. It has been suggested that values, together with self-regulation, psychological flexibility, and exposure, are key mechanisms of action in mindfulness. The aims of this study were to explore the association between meditation and values and to examine the processes involved in this relation. A sample of 235 meditation-naïve participants and 274 subjects with varying levels of experience in meditation practice completed an online assessment protocol composed of Five Facets of Mindfulness Questionnaire (FFMQ), Decentering Questionnaire (EQ), Valued Living Questionnaire (VLQ), and Engagement with Life Scale (ELS). Results revealed that daily meditators were more consistent, aware, and life-fulfilled about their values; moreover, these measures correlated with the mindfulness process and decentering. The relation between meditation practice and values-related behavior (assessed by the VLQ) was mediated by decentering. The association between meditation practice and Valued Living and Life Fulfillment (measured by the ELS) was mediated by the decentering, describing, and non-judging dimensions of mindfulness. The findings in this study support the relation between meditation and personal values, mediated by the decentering, describing, and non-judging facets of mindfulness.

Keywords Meditation · Mindfulness · Values · Decentering

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Published online: 01 April 2017

Introduction

The role of personal values in modern psychotherapy has become increasingly important in recent years. Schwartz and Bilsky (1987) defined values as follows: "Values (a) are concepts or beliefs, (b) pertain to desirable end states or behaviors, (c) transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance."

Among contemporary models of psychotherapy, acceptance and commitment therapy (ACT) is probably the model that has most emphasized the relevance of applying values work to psychotherapy (Hayes et al. 1999). ACT considers valued-oriented behavior to be a primary therapeutic goal, and values are used to facilitate change (Hayes et al. 2001).

Based on the ACT framework, other third-generation therapies (i.e., mindfulness and acceptance-based therapies) such as dialectical behavior therapy (DBT; Linehan 2014) and behavioral activation for depression (Jacobson et al. 2001) have also included values-oriented interventions. The notion of "wise mind" proposed in DBT (Linehan 1993, 2014) can be also considered an example of the link between mindfulness and values. Wise mind refers to the inner wisdom that we all have, and by practicing mindfulness, we are able to access to it in order to identify and use skillful means for attaining valued ends (Linehan 1993). Similar to the proposal from self-determination theory (Deci and Ryan 1985a, b; Sheldon and Krieger 2014)—which argues that an open awareness is necessary for behaviors that are consistent with one's needs, values, and interests—the first step in the process is to identify those values. Other approaches, such as the humanistic model (Maslow 1962; Rogers 1971) and motivational interviewing (Miller and Rollnick 1991), have also emphasized the importance of values in human psychology. For a more detailed discussion of the differences in the conceptualization of values among these various approaches, see Yadavaia and Hayes (2009) and Páez-Blarrina et al. (2006).

The beneficial effects of acting in accordance with personal values have been demonstrated in both clinical and non-clinical samples. In a sample of students, Brunstein (1993) show that commitment, attainability, and progress in goal achievement linked to personal values play important roles in subjective well-being. In fact, data from several other studies have confirmed that values-focused psychological interventions improve several aspects related to well-being, including pain tolerance (Branstetter-Rost et al. 2009), stress response (Crocker et al. 2008; Gregg et al. 2014), and quality of life and physical and emotional functioning (McCracken 2013; Michelson et al. 2011; Vowles et al. 2011).

Mindfulness can be defined as the self-regulation of attention to one's experiences in the present moment with curiosity, openness, and acceptance (Bishop et al. 2004). Mindfulness is also effective for several mental health conditions (Khoury et al. 2013) and in generating improvements in well-being (Carmody and Baer 2008; Shapiro et al. 2008). Although data are scant with regard to the relationship between values and mindfulness, some authors have identified an expected positive link: Meditation is believed to help in fostering a deeper awareness that may allow people to analyze goals to identify their deepest values and thus engage in wiser actions (Campos et al. 2016; Linehan 2014; Williams and Penman 2011).

The practice of meditation may facilitate recognition and clarification of values, and this has been suggested as a potential mechanism for the beneficial effects of mindfulness (Kocovski et al. 2009). Meditation could exert this beneficial effect by diminishing an individual's tendency to be on "automatic pilot" in which quick decisions influenced by external factors (e.g., pushes and pulls) are prioritized over internal values, thus narrowing consideration of the full range of options and responses; consequently, decisions and behaviors may not be directed towards an individual's true needs and values.

In one study involving mindfulness-based cognitive therapy for chronically depressed participants with a history of suicidality, many of the patients reported more clarity about their important goals, and this perceived clarity increased their confidence in their capacity to move in valued life directions (Crane et al. 2012). Shapiro et al. (2006) suggested that mindfulness practice produces certain shifts in the perception of internal experiences, usually referred to as the capacity for reperceiving or decentering. This capacity to separate oneself from one's thoughts allows the person to observe his or her experiences with greater clarity and therefore to choose more wisely in accordance with personal values (Kocovski et al. 2009; Shapiro et al. 2006). Decentering is believed to facilitate many health-related processes such as self-regulation, psychological flexibility, exposure, and values clarification. Supporting this notion, Carmody et al. (2009) showed that the association between mindfulness decentering and a reduction in physiological symptoms is mediated by values clarification and flexibility.

Few studies have investigated the relation between mindfulness, meditation, and values. Brown and Ryan (2003) found that individuals who scored higher on a mindfulness scale were more autonomous in their activity and less likely to be influenced by the demands and pressure of others. These individuals spend more time doing things that they truly value and enjoy. Brown and Kasser (2005) also showed that high dispositional mindfulness was related to more environmentally responsible behavior and that mindfulness and intrinsic values (together, but not separately) were relevant variables implicated in the covariance between self well-being and ecologically responsible behavior.

In this context, the aim of the present was to explore the relation between meditation practice and values-related behavior comparing subjects with meditative experience and without meditative experience and also explore decentering and mindfulness as mediational variables. We expected that meditation would have a positive effect on values-influenced conduct. We also expected that greater mindfulness practice would be positively associated with decentering and mindfulness capacities and that these capacities would, in turn, promote values-related behavior.

Method

Participants

We obtained data from 698 individuals. However, due to incomplete information about meditation practice, 189 of these were excluded from analysis. Thus, a total of 509 individuals

completed the survey and were therefore included in the final study sample; of these, 235 did not practice meditation (non-meditation practitioners (NMP)). In a previous study of our group, we found that the frequency of the practice was the parameter most related to measures of mindfulness and decentering (Soler et al. 2014a). Therefore, the subsample of meditators was divided considering how frequently they practiced: daily meditation practitioners (DMP; n = 143), those that practice three to four times a week (3-4MP; n = 92), and those that practice ≤2 times per week (2-LESSMP; n = 39). Demographic data are displayed in Table 1.

Most participants practiced more than one type of meditation. The most common practices included body scan (14.2%), vipassana (18.6%), concentrative practices (19.3%), informal practices (27%), imagination practices (38.3%), mantras (44.5%), and compassion-based practices (49.6%).

Procedure

Participants completed an assessment protocol via a commercial online survey system (www.surveymonkey.com). A link to this protocol was posted on several Spanish websites about mindfulness, meditation, and psychology (scientific associations, mindfulness associations, monasteries, etc.), as well as on non-professional social networks (i.e., Facebook).

The study protocol was approved by the hospital's Ethics Committee, and all participants signed a consent form indicating their willingness to participate. Participants were informed about the purpose of the study and told that their answers would be treated confidentially.

Measures

Sociodemographic and meditation practice information: Sociodemographic data, including age, sex, education, and meditation practice, were obtained. Frequency of meditation practice was assessed with a brief, purpose-designed questionnaire: Participants were asked to indicate the frequency of their meditation practice (daily, three to four times/week, ≤2 times/week, or never).

The *Valued Living Questionnaire* (VLQ) (Wilson et al. 2011) is a two-part instrument to assess values-related behavior. First, participants rate the importance of 10 life domains (importance scores) on a 10-point Likert-style scale (1 = not at all important; 10 = extremely important), as follows: (1) family (other than parenting and intimate relations), (2) marriage/couples/intimate relations, (3) parenting, (4) friendship, (5) work, (6) education, (7) recreation, (8) spirituality, (9) citizenship, and (10) physical self-care. In the second part of the questionnaire, subjects rate the extent to which their behavior over the last week reflected their values (1 = not at all consistent; 10 = extremely consistent; consistency scores). Responses from both of these domains (i.e., importance and consistency) were used to calculate a composite index (i.e., "Valued Living composite"), which helps to quantify the extent to which a participant is living congruently with his/her values in everyday life. The Valued Living composite index was calculated by multiplying the importance and consistency responses for each domain and then calculating the mean of those scores. The resulting Valued Living composite scores range from 10 to 100. In our sample, the internal consistency for this composite index was considered adequate (α = 0.65).

The *Engagement with Life Scale* (ELS; Trompetter et al. 2013) is a 16-item scale, with each item rated on a five-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). Results provide a general underlying factor and two subscales: Valued Living (10 items) and Life Fulfillment (6 items). The scores on *Valued Living* reflect the recognition and knowledge of personal values and the underlying behavioral actions congruent with these values. The *Life Fulfillment* subscale is composed of items measuring the sense of fulfillment in life as a consequence of recognizing and living in accordance with personal values. In our sample, the

Table 1 Sociodemographic characteristics by group

Frequency of meditation practice	Daily n = 143	3 or 4 times a week n = 92	≤2 times a week n = 39	No meditation practice n = 235	
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	F (p)
Age	45.42 (9.97)	42.04 (10.40)	42.85 (11.75)	39.26 (11.62)	9.23 (<0.0001)
	N (%)	N (%)	N (%)	N (%)	χ^2 (p)
Sex					2.47 (0.48)
Male	51 (35.7)	29 (31.5)	13 (33.3)	66 (28.1)	
Female	92 (64.3)	63 (68.5)	26 (66.7)	169 (71.9)	
Education					8.24 (0.22)
Primary	1 (.7)	0	0	4 (1.7)	
Secondary	18 (12.6)	6 (6.5)	1 (2.6)	18 (7.7)	
University	124 (86.7)	86 (93.5)	38 (97.4)	213 (90.6)	

Cronbach's alpha for both subscales and the total scale of the ELS revealed excellent internal consistencies: 0.93 for the total scale, 0.90 for Valued Living, and 0.89 for Life Fulfillment.

The *Five Facet Mindfulness Questionnaire* (FFMQ; Baer et al. 2008) is an instrument based on five independently developed mindfulness questionnaires and consists of a 39-item scale rated on a five-point Likert scale (1 = never or very rarely true to 5 = very often or always true) with five subscales: observe, describe, act with awareness, non-judge of inner experience, and non-react to inner experience. Observe refers to noticing or attending to internal and external experiences such as sensations, thoughts, or emotions. Describe refers to labeling internal experiences with words. Act with awareness describes focusing on activities in the moment as opposed to behaving mechanically. Non-judge of inner experience refers to taking a non-evaluative stance towards thoughts and feelings. Non-react to inner experience is defined as allowing thoughts and feelings to come and go, without getting caught up in or carried away by them. Cronbach's α for the Spanish version of the FFMQ range from 0.8 to 0.91 (Cebolla et al. 2012). In our sample, the Cronbach's α for the subscales ranged from 0.84 to 0.93.

The *Experiences Questionnaire-Decentering* (EQ-D; Fresco et al. 2007) is an 11-item self-report measure of decentering. Items are rated on a five-point Likert scale (1 = never to 5 = always). Spanish validation of the EQ-D scale showed high internal reliability (Cronbach's $\alpha = 0.89$) (Soler et al. 2014b). In our sample, Cronbach's α was also 0.89.

Data Analyses

To explore sociodemographic differences between groups, we used ANOVAs and chi-squared tests. Differences between groups in terms of VLQ, ELS, FFMQ, and EQ scores were examined by means of a multivariate ANOVA; in all cases, age was entered as a co-variable.

To examine the association between decentering and mindfulness (EQ and FFMQ) and values (VLQ and ELS), partial correlation analysis was carried out, controlling for the effect of age. Finally, to test if mindfulness mediates the relation between meditative practice and valued living, we conducted a hierarchical regression analysis for values-related tests (i.e., VLQ composite, Valued Living, and Life Fulfillment), including the following as predictors: age in the first step, meditation practice in the second step, and EQ-D and FFMQ subscales in the third step. Then, using Preacher and Hayes' (2004) approach for SPSS, multiple mediation analysis, adjusted for age, was applied to the values-related measures, including meditative practice as an independent variable, the values-related measures as dependent variables, and the EQ-D and FFMQ subscales that were significant in the previous regression model as mediators. To test the hypothesis that EQ-D and FFMQ subscales mediate the meditation-values relationship, a bootstrap regression analysis was carried out.

Results

Differences in Sociodemographic Variables Between Groups with Different Meditation Frequency

Analysis of sociodemographic variables revealed significant differences between groups for age, indicating that this variable should be controlled in the subsequent analyses. No differences were found for level of education or sex. Table 1 shows the sociodemographic characteristics of each group.

Between-Group Differences in Values-Related Measures, Mindfulness, and Decentering

Results of the MANCOVA show significant differences between groups on the VLQ composite, the Valued Living subscale, and the Life Fulfillment subscale. Post hoc analyses showed that daily meditators had significantly higher scores on all values-related measures. However, no significant differences between non-meditators and the other two groups (i.e., meditative practice twice a week or less and meditative practice three or four times a week) were observed. Effect sizes for significant differences in the VLQ composite, Valued Living, and Life Fulfillment between groups were small or medium (ranging from 0.40 to 0.60) (Table 2).

Significant between-group differences were also observed for EQ-D and all FFMQ scores. Effect sizes between daily meditators and non-meditators on the EQ-D and FFMQ scores were medium or large. Significant differences were also observed between the groups of meditators on several variables: EQ-D, FFMQ observe, FFMQ act with awareness, and FFMQ non-react to inner experience. (Table 2 shows post hoc analyses and effect sizes).

Correlation Between Decentering, Mindfulness, and Values

Correlational analyses (Table 3) showed significant associations between decentering (EQ-D), mindfulness (FFMQ), and values-related measures. Correlations between Valued Living, Life Fulfillment, and mindfulness measures were moderate, while associations between VLQ and mindfulness were small.

Predictive Effect of Meditation Practice, Decentering, and Mindfulness Facets on Values-Related Behavior

Given the association between age and meditation practice, we included age in the regression models. Since our primary interest was to study the effects of meditation practice on

Table 2 Differences between groups on the mean scores of values-related measures, EQ-D, and FFMQ controlled by age

	Mean (SD)				MANCOVA *F*	Significant post hoc differences	Cohen's *d*
	NMP	2-LESSMP	3-4MP	DMP			
VLQ composite	59.72 (13.65)	60.25 (14.52)	61.217 (13.966)	67.048 (12.462)	6.62**	DMP > 3-4MP	0.44
						DMP > 2-LESSMP	0.50
						DMP > NMP	0.56
Valued Living	40.058 (5.918)	40.743 (5.838)	41.141 (5.244)	53.088 (4.696)	8.421**	DMP > 3-4MP	0.39
						DMP > 2-LESSMP	0.44
						DMP > NMP	0.57
Life Fulfillment	21.447 (4.604)	22.514 (3.752)	22.411 (4.338)	24.056 (4.045)	9.044**	DMP > 3-4MP	0.39
						DMP > NMP	0.60
EQ-D	36.774 (6.429)	39.833 (5.964)	40.716 (6.067)	43.320 (4.956)	27.379**	DMP > 3-4MP	0.47
						DMP > 2-LESSMP	0.64
						DMP > NMP	1.14
						3-4MP > NMP	0.63
						2-LESSMP > NMP	0.49
FFMQ observe	25.165 (5.626)	27.622 (5.659)	30.067 (5.165)	31.053 (4.176)	29.002**	DMP > 2-LESSMP	0.69
						DMP > NMP	1.19
						3–4 > 2-LESSMP	0.45
						3–4 > NMP	0.91
						2-LESSMP > NMP	0.43
FFMQ describe	29.767 (5.573)	31.243 (4.304)	31.292 (6.049)	32.056 (4.937)	3.553*	DMP > NMP	0.44
						3-4MP > NMP	0.26
FFMQ act with awareness	27.470 (5.960)	26.027 (5.833)	27.595 (5.738)	29.962 (5.092)	5.578**	DMP > 3-4MP	0.4
						DMP > 2-LESSMP	0.72
						DMP > NMP	0.45
FFMQ non-judge	28.262 (6.692)	31.918 (6.139)	31.820 (7.204)	33.106 (5.695)	13.847**	DMP > NMP	0.78
						3-4MP > NMP	0.51
						2-LESSMP > NMP	0.57
FFMQ non-react	21.379 (4.606)	23.135 (3.875)	24.101 (4.131)	26.045 (3.673)	24.034**	DMP > 3-4MP	0.50
						DMP > 2-LESSMP	0.77
						DMP > NMP	1.12
						3-4MP > NMP	0.62
						2-LESSMP > NMP	0.41

NMP not meditative practice, *2-LESSMP* meditative practice twice a week or less, *3-4MP* meditative practice two or four times a week, *DMP* daily meditative practice

*$p \leq 0.05$; **$p \leq 0.005$

values-related behaviors, the first model included only age and meditation practice. In a second step, we examined whether meditation practice, decentering, and mindfulness facets contribute independently to the prediction of values-

Table 3 Partial correlations, controlled by age

	EQ	FFMQ observe	FFMQ describe	FFMQ act aware	FFMQ non-judge	FFMQ non-react	VLQ composite	Valued Living
VLQ composite	0.305**	0.191**	0.188**	0.107*	0.176**	0.212**	–	–
Valued Living	0.528**	0.284**	0.438**	0.349**	0.379**	0.446**	0.494**	–
Life Fulfillment	0.552**	0.348**	0.371**	0.335**	0.391**	0.434**	0.475**	0.692**

*$p \leq 0.05$; **$p \leq 0.005$

related behavior (as assessed by the VLQ composite, Valued Living, and Life Fulfillment). Models included VLQ composite, Valued Living, and Life Fulfillment as dependent variables. In the first step, meditation practice was a significant predictor of all values-related behavioral measures: The models explained 4% of VLQ composite, 7% of Valued Living, and 8% of Life Fulfillment. In the second step, when EQ-D and FFMQ subscales were included as independent variables, meditation practice was no longer statistically significant in the three models. EQ-D was the only significant predictor of VLQ composite, with the model explaining 10% of the variance. EQ-D, FFMQ describe, and FFMQ non-judge were significant predictors of Valued Living and Life Fulfillment, explaining 37% of the variance for Valued Living and 35% of Life Fulfillment.

Mediational Role of Decentering and Mindfulness Between Meditation and Values

In our proposed mediation models, we included meditation practice as the independent variable, while EQ-D and the significant FFMQ facets in the previous regression models (describe and non-judge) were included as mediation variables, with VLQ composite, Valued Living, and Life Fulfillment as dependent variables. Because of the significant relationship shown earlier between age and meditation practice, age was included as a co-variable.

According to Baron and Kenny (1986), several conditions are necessary to support a mediational hypothesis. First, if the data were collected at a single time point, there must be a theoretical basis to justify the role for each variable in the model. We tested the idea that meditation practice increases mindfulness skills and decentering, which, in turn, led to improved awareness of values and values-related behavior. In addition, the independent, mediator, and dependent variables must be significantly inter-correlated. This condition was confirmed in a previous correlational and regression analysis and in several previous publications (Baer et al. 2008; Soler et al. 2014a). Finally, when the independent variable and mediator variables are entered simultaneously in the model to predict the dependent variables (VLQ composite, Valued Living, and Life Fulfillment), the relationship between the independent variable and the dependent variables must be reduced. This condition was confirmed in the second step of the regression model (Table 4).

Mediational analysis (Fig. 1a–c) shows that meditation practice has an effect on VLQ composite, Valued Living, and Life Fulfillment; however, the direct effect of meditation practice on values was not significant when mediational variables were included in the analysis; otherwise, indirect effects remain significant. The indirect effect of meditative practice on decentering was shown to be significant on the VLQ composite, and other indirect effects of meditative practice (decentering, FFMQ describe, and FFMQ non-judge) remain significant on Valued Living and Life Fulfillment.

Bootstrapping analysis shows a significant indirect effect of *meditation practice* (by decentering) on the VLQ composite (95% bootstrap confidence interval of 0.06–0.17). For Valued Living, indirect effect of meditation practice was significant, as follows: decentering (95% bootstrap confidence interval of 0.10–0.22), describe (95% bootstrap confidence interval of 0.02–0.08), and non-judge (95% bootstrap confidence interval of 0.01–0.08). For Life Fulfillment, the bootstrapping analysis also showed significant indirect effects of meditative practice as follows: decentering (95% bootstrap confidence interval of 0.12–0.23), describe (95% bootstrap confidence interval of 0.01–0.06), and non-judge (95% bootstrap confidence interval of 0.02–0.69). In summary, bootstrap regression analysis supports the model of decentering as a partial mediator between meditation practice and VLQ composite scores and also for decentering, describe, and non-judge as independent partial mediators on the effect of meditation practice on Valued Living and Life Fulfillment.

Discussion

As expected—and previously described in many meditation traditions—our findings indicate that there is a relation between meditation practice and values. Interestingly, compared to the less frequent meditators, the daily meditation group showed a greater capacity for behaving according to values and also higher scores on Life Fulfillment. Importantly, no significant differences on any of the values-related variables were found between subjects who practiced meditation less frequently and the mediation-naïve subjects. These results suggest that daily meditation is necessary to significantly influence values.

We also found that, in most cases, meditation practice had a significant impact on decentering and on all mindfulness indexes—even when practice was less than daily— particularly on decentering scores and on the observing and non-react facets of the FFMQ. These results are congruent with previous studies which have reported a relation between mindfulness practice and improvements on these facets (Soler et al. 2014a).

Decentering and all mindfulness facets (describe, non-react, act with awareness, non-judge, and observe) also correlated with values-related measures. Although meditative practice has an impact on values-related behavior (recognition, behavior congruence, and life fulfillment), when decentering and mindfulness facets are considered as a whole, they have the greatest influence on values-related measures; this is particularly true for decentering, describe, and non-judge, which are the three facets that determine a large part of values identification, committed behavior, and life fulfillment, regardless of the direct influence of meditative practice.

Table 4 Three hierarchical regression analysis

	R^2	Age Beta	Medit prac. Beta	EQ-D Beta	FFMQ obs. Beta	FFMQ desc. Beta	FFMQ act. Beta	FFMQ non-jud. Beta	FFMQ non-re. Beta
Step 2									
VLQ	0.05	0.07	0.21**						
Val. Liv.	0.07**	0.14**	0.20**						
Life Ful.	0.08**	0.13**	0.22**						
Step 3									
VLQ	0.10**	0.05	0.09	0.28**	−0.01	0.07	−0.05	0.05	−0.05
Val. Liv.	0.37**	0.09*	−0.03	0.34**	−0.06	0.22**	0.07	0.12*	0.07
Life Ful.	0.35**	0.08	−0.03	0.40**	0.02	0.13**	0.05	0.18**	−0.01

Medit prac. meditative practice, *FFMQ obs*. FFMQ observe, *FFMQ desc*. FFMQ describe, *FFMQ act*. FFMQ act with awareness, *FFMQ non-jud*. FFMQ non-judge of inner experience, *FFMQ non-re*. FFMQ non-react to inner experience, *VLQ* VLQ composite, *Val. Liv*. Valued Living, *Life Ful*. Life Fulfillment

*$p \leq 0.05$; **$p \leq 0.005$

Interestingly, while meditative practice does not show a direct relation with values when mindfulness facets and decentering are included as independent variables, meditative practice improves all of these process variables. Mediational analysis supports this finding, since the direct effects of meditative practice on values disappear when mediational variables (decentering, describe, and non-judge) are considered. It is important to note that mediational variables are influenced by meditative practice in all cases and that the indirect effects of mediational variables from meditative practice are high. At the same time, mediational variables also have a direct impact, regardless of meditative practice, which leads us to believe that other therapies or practices that increase decentering, describing, and non-judging, such as meta-cognition-based therapies, CBT (Teasdale et al. 2002) or even dispositional mindfulness (Brown and Ryan 2003; Nitzan-Assayag et al. 2015), or education (Soler et al. 2014a) can influence values.

The theoretical model proposed by Shapiro et al. (2006) hypothesized that changes in reperceiving (decentering) mediate changes in values clarification, flexibility, self-regulation, and exposure, which, in turn, contribute to well-being. Our results confirm the relationship between meditation practice and values mediated not only by the decentering process but also by other processes involved in mindfulness, such as describe and non-judge.

Our findings were similar to those observed by Baer et al. (2008), who found that describe, non-judge, and non-react were significant mediators between meditation experience and well-being. Three mediational processes appear again, and two of these coincide: acceptance operationalized by non-judge and verbal labeling operationalized by describe. Both of these are well-established processes involved in emotion regulation and well-being (Creswell et al. 2007; Kashdan et al. 2006).

The ability of being non-judgmental might be associated with the pursue of one's real interest, regardless of cognitive assessments (in terms of what is "right or wrong"). The concept of "judging" is embedded in behaviors that are guided for "what it should be done" rather than "what I would like to do," called language traps in ACT (Dahl et al. 2009). Differentiating between both types of behaviors is a common and fundamental issue for interventions that aimed at value clarification (Harris 2011). Additionally, judging has an important effect on emotions. By judging one's primary emotion—usually a natural and evolution-tailored reaction to a given situation—switches to a secondary emotional response, frequently related to the individual's learning experiences, rather than to the current context (the one that elicited the emotional response). These secondary responses are less likely to be adaptive (Fruzzetti and Iverson 2006; Greenberg and Johonson 1990), for example, feeling anger for having felt rejection on a given social interaction or feeling shame for having felt fear. These changes in the emotional response entail changes in the expression, motivation, and aims, easily leading to a confusion on our inner interests (Fuzzeti and Iverson 2006; Greenberg and Johnson 1990). The capacity of non-judging and being able to skillfully describe the experience is crucial for a balanced self (Fruzzeti and Iverson 2006).

Describe refers to labeling the internal experience with words; this process tends to dampen affective responses (Lieberman et al. 2011; Linehan 1993) and would facilitate a more flexible response to address the intrinsic motivations of the individual. Description has the power to defuse the interference of judgments, secondary emotions, and misunderstandings (Fruzzetti and Iverson 2006; Linehan 2014).

The third element in Baer's study (2008) was non-react, decentering in our study, but both of these facets highly overlap (Soler et al. 2014b). Decentering allows the person to observe his or her experiences with greater clarity and therefore to choose wisely in accordance with personal values. The

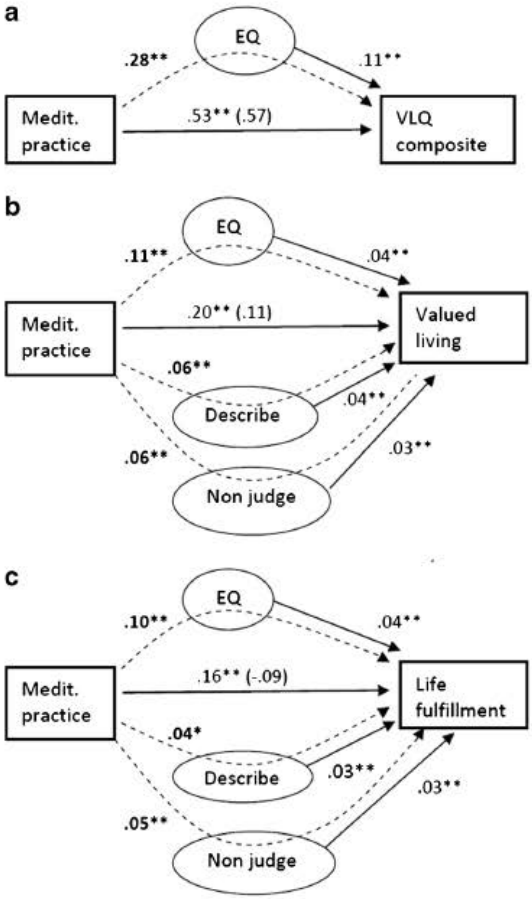

Fig. 1 a, b, c Three mediational analyses. All values are beta-standardized coefficients. The *values in parentheses* show the relationship between meditative practice and values when indirect effect of EQ, FFMQ describe, and FFMQ non-judge are excluded. Signification of indirect effects was calculated by the Sobel test. $*p \leq 0.05$; $**p \leq 0.005$. *Medit. practice* meditative practice

main limitation of this study is the design: Strictly speaking, mediation/moderation studies require at least two consecutive measures, which our study did not have. Mediation analysis with only one measure should be considered tentative and analyzed with caution (Judd et al. 2001). In addition, in our analysis, we did not consider the type of meditative practice and the duration of each practice session, both of which could have influenced our findings. Also, this is a cross-sectional study and characteristics of the sample, including the ability of maintaining a daily meditation routine, personality characteristics, or types and context of practice, could also be affecting these results. Although most participants were recruited in lay meditation centers, we do not know if the daily meditator group included individuals with religious formal training as for example monks. This might have impacted our study, and therefore, we consider this lack of information as a limitation. Moreover, considering the fundamentally experiential and temporal nature of values, the use of self-report questionnaires could easily be influenced by the desirability or preconceived ideas about oneself, especially in individuals with less awareness of the experience. In this sense, it would be desirable in future studies to find alternative methods of assessing values, such as implicit behavioral assessments, that may be more sensitive to experience and less influenced by judgments or social expectations. Finally, although some studies suggest that there are gender-related differences in values on some life domains (Bookwala et al. 2001), we did not perform a separate analysis based on gender.

Values have a high priority in mindfulness and acceptance-based psychotherapy (Germer et al. 2013; Roemer and Orsillo 2009). For some people, recognizing values is not easy, and therefore, at least part of therapeutic work needs to focus on identifying personal values. ACT and DBT, for example, both include exercises to help patients discover their values and to identify obstacles to achieving their values-related goals (Linehan 2014; Roemer and Orsillo 2009). In ACT, values and committed action are two out of the six core process that serve to increase psychological flexibility. All handbooks and protocols include techniques to clarify values and increase behavior regulation by it (Hayes 1999; Páez 2006). With regard to DBT, working with values is especially relevant for the fourth stage of individual therapy in which the work is focused in attaining a sense of connectedness, joy, and freedom (Linehan 1993). Clarifying the client's values is a core aspect to achieve this. In fact, to this end, the last version of DBTs' skills training includes several skills to help clients to work towards valued actions (Linehan 2014). The present study demonstrates that the association between meditative practice and values is primarily a question of improving mediational variables; as a result, any other practices or interventions that increase these capacities may also positively influence values. Other studies will be necessary to clarify the association between mediational variables and values and also the interaction between mediational variables and interventions specifically designed to clarify values and regulate behavior.

Acknowledgements We would like to thank all participants of the study. JS, AC, and JGC were supported by PROMOSAM: Investigación en procesos, mecanismos y tratamientos psicológicos para la promoción de la salud mental (Red de Excelencia PSI2014-56303-REDT) founded by Ministerio de Economía y Competitividad (2014). The authors thank Bradley Londres for his assistance in editing and improving the text.

Author Contributions AF: designed the study, analyzed the data, and wrote the first draft of the paper. AC: collaborated in the design of the study, the data collection, and the data analyses. JGC: collaborated in the design of the study, the data collection, and the data analyses. MD: collaborated in the design of the study, the data collection, and writing of the final manuscript. ME: collaborated in the writing of the manuscript. JCP: collaborated in the writing of the final manuscript. JS: collaborated in the design, data analyses, and the writing of the final manuscript.

4. DISCUSIÓN GENERAL

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Esta tesis confirma la relevancia del decentering como variable clave en términos de salud mental. Decentering resulta una variable transdiagnostica informativa tan relacionada con la patología como con el bienestar y la salud; además es una variable susceptible de modificación mediante intervenciones tanto psicológicas como farmacológicas. En los trabajos presentados previamente y que forman ésta tesis se ha observado menor capacidad de decentering en sujetos con patología y también una mejora en la capacidad de decentering tras prácticas terapéuticas como un entrenamiento en mindfulness y también tras una toma de ayahuasca. También se ha podido observar que la capacidad de decentering media en otros procesos como son la conciencia y regulación por valores.

Los individuos con patología psiquiátrica como el trastorno depresivo mayor, la dependencia a la cocaína, el trastorno alimentario o el trastorno límite de la personalidad mostraron en cada caso puntuaciones menores en decentering, de manera que podemos pensar que bajas puntuaciones en decentering pueden ser indicativas de un factor de vulnerabilidad transdiagnóstico.

Sabíamos que la capacidad de decentering es sensible a la práctica meditativa (Carmody y otros, 2009), pero la EQ no se había usado antes para comparar ésta habilidad entre individuos con y sin experiencia meditativa. Los datos del primer estudio de ésta tesis confirman cambios en la capacidad de decentering en un grupo de personas diagnosticadas de TLP tras un entrenamiento en mindfulness y también diferencias significativas entre sujetos practicantes de meditación y no practicantes. En el mismo sentido, Elices y colaboradores confirmaron mejorías en la capacidad de decentering posteriores a una intervención en mindfulness, paralelas a la disminución de la sintomatología característica de sujetos con TLP (Elices, Carmona, Martín-Blanco, Pascual y Soler 2016). Otro tipo de intervenciones no necesariamente centradas en la práctica meditativa también podrían tener como proceso activo la capacidad de decentering. Algunos autores sugieren que la eficacia de la Terapia Cognitivo Conductual (TCC) para el tratamiento de la depresión puede basarse más en la

conciencia metacognitiva que en la modificación del contenido cognitivo (Teasdale, Segal, y Williams, 1995). La Terapia de Aceptación y Compromiso (ACT) (Hayes y otros, 1999) o la Terapia Basada en la Metacognición (Wells, 2002), no se centran en la práctica meditativa pero también contemplan la capacidad de decentering como un proceso central (Moritz y otros, 2011; van der Heiden, Muris, y van der Molen, 2012; Wells y otros, 2010). Fresco (Fresco et al. 2007b) observó incrementos en decentering en un grupo de pacientes respondedores a tratamiento antidepresivo y en mayor grado en sujetos respondedores a tratamiento cognitivo conductual. El resultado indicaría que ésta capacidad no está únicamente mediada por la mejora clínica como pasa con otros marcadores de vulnerabilidad, como pueden ser las actitudes o estilos atribucionales (ver Ingram 1990 para una revisión), sino que podría ser un indicador de cambio funcional.

En esta tesis también se ha podido observar un incremento en la capacidad de decenterig con una intervención farmacológica, 24 horas después de una toma de ayahuasca. Los resultados muestran como la capacidad de decentering, así como las habilidades de no juicio y no reactividad incrementaron tras una toma de ayahuasca, confirmando así que éstos procesos pueden ser la base también de intervenciones farmacológicas. Éstos podrían ser los mecanismos explicativos de los efectos beneficiosos de la ayahuasca en el tratamiento de las adicciones o de la depresión (Thomas y otros, 2013; Osório y otros, 2015), patologías en las que la capacidad de decentering está afectada (Teasdale y otros, 2002; Segal y otros, 2006; Carmody y otros, 2009; Soler y otros, 2015). Bishop (Bishop y otros, 2004) describió dos componentes básicos del constructo del midfulness, el elemento atencional y el actitudinal. Aunque esta propuesta teórica por parte de la autora de la FFMA no se ha sustentado empíricamente (Tran y otros 2013) las subescalas de no juicio y no reactividad reflejan, teóricamente, el componente actitudinal (Baer y otros 2008), puesto que miden aceptación de los pensamientos y sensaciones experimentados por el individuo.

Thomas (Thomas y otros 2013) ya sugirió, usando una escala bifactorial de mindfulness, que el incremento en la auto-aceptación contribuiría al efecto

terapéutico de la ayahuasca. Así, el incremento de auto-aceptación sería clínicamente útil en la medida que el componente actitudinal del mindfulness, mas que el componente atencional parece estar particularmente afectado en pacientes con patología (Coffey, Hartman y Fredrickson, 2010; Tejedor y otros, 2014). En un estudio posterior (Sampedro y otros 2017) se confirmaron los cambios en los mecanismos de no juicio y autocompasión y se observaron correlatos neurometabólicos a nivel de la conectividad de la "default mode network" también asociada a los beneficios de la práctica del mindfulness (Doll y otros 2015; Brewer y otros 2011) y relacionada con la rumiación propia de la sintomatología depresiva (Hamilton y otros 2011)

El incremento en la capacidad de decentering tras diferentes intervenciones terapéuticas, confirma la capacidad de decentering como un factor común en las psicoterapias que mejoran el bienestar (Bliss y McCardle 2014; Hayes-Skelton, Calloway, Roemer y Orsillo, 2015) además de ser una medida de salud mental transdiagnóstica.

Algunos autores plantean que la capacidad de decentering puede ser funcionalmente adaptativa o no según la capacidad de adaptación a las circunstancias y demandas del entorno, por ejemplo, no sería adaptativa la disminución de la reactividad ante una buena idea o ante la respuesta de miedo producida por una situación de peligro (Bernstein y otros 2015). Desde éste punto de vista el decentering sería saludable solamente en la medida que favorece la adaptación flexible a las circunstancias del entorno. Los datos apoian la conceptualización de Fresco del decentering como favorecedora del funcionamiento cognitivo, psicológico y social saludable. Es clave para entender el papel del decentering en la adaptación diferenciar la relación que el sujeto establece con los estímulos internos y externos. El decentering favorecería la adaptación al permitir la toma de perspectiva del mundo interno del individuo (pensamientos y emociones) para poder dedicar recursos atencionales hacia el mundo externo. La diferenciación entre la atención al mundo interno y externo ya había sido descrita en doctrinas hinduistas como el vedanta y también en la psicología positiva con la descripción del estado de flow. El concepto de flow descrito en la psicología positiva se caracteriza, entre otras cosas, por la atención focalizada en el presente y la

pérdida de autoconciencia reflexiva (Nakamura y Csikszentmihalyi 2009). Es interesante señalar también la diferencia entre el decentering y la disociación puesto que ésta también conlleva una disminución de la reactividad. En el caso de la disociación se da una negación o bloqueo del estímulo interno en cambio en el decentering pensamientos y emociones están presentes sin que el individuo se focalice en ellos, evitando así la proliferación de emociones secundarias.

La relación de la capacidad de decentering con otros procesos relevantes en psicoterapia como son los valores no había sido estudiada hasta el momento. Los resultados muestran mayores puntuaciones en conducta regulada por valores (su reconocimiento, congruencia conductual y plenitud vital) en sujetos meditadores a diario que en sujetos meditadores con menor frecuencia y sujetos no meditadores. También se evidencia el papel mediador del decentering y las facetas de descripción y no juicio del mindfulness en ésta relación. La visión global que nos da el análisis mediacional muestra como la práctica meditativa influye en las capacidades de decentering, descripción y no juicio y a su vez éstas influyen en la conciencia, regulación por valores y plenitud vital. Estos resultados aclaran la relación entre procesos y ponen de manifiesto que en una situación terapéutica el trabajo previo sobre decentering, descripción y no juicio favorece el abordaje posterior de la aclaración de valores e incremento de la regulación conductual por éstos. También vemos que intervenciones que incidan sobre éstos procesos tendrán un efecto sobre valores aunque no tengan por objetivo trabajar sobre éstos directamente. Recuperando la clasificación de Hayes y otros (2014) un estilo de respuesta abierto favorecería un estilo de respuesta comprometido.

5. CONCLUSIONES

5. CONCLUSIONES

Estas son las conclusiones finales de la tesis presentada que responden a las hipótesis planteadas de cada estudio.

5.1 ESTUDIO 1

La versión española de la escala EQ-Decentering:

- Muestra buenas características psicométricas, similares a la versión original, buena fiabilidad test-retest y validez convergente y divergente con otras escalas de mindfulness y clínicas respectivamente.
- Se confirma la estructura unifactorial.
- Correlaciona positivamente con las puntuaciones de las escalas MAAS y FFMQ.
- Correlaciona negativamente con las puntuaciones en las escalas CES-D y DASS-21.
- Es sensible al cambio tras un entrenamiento en mindfulness.
- Discrimina entre sujetos con patología psiquiátrica y sin patología.
- Los sujetos practicantes de meditación obtienen mayores puntuaciones.

5.2 ESTUDIO 2

- Las capacidades de decentering, no juicio y no reacción se ven incrementadas 24 horas después de una toma de ayahuasca. Este efecto podría ser el mecanismo subyacente al efecto terapéutico común con el mindfulness de ésta sustancia.

5.3 ESTUDIO 3

- Un grupo de individuos practicantes de meditación a diario consiguen mayor conciencia de los valores personales, mayor regulación conductual por éstos y mayor

satisfacción que un grupo de sujetos no practicantes o practicantes con menor frecuencia.

- En sujetos meditadores se observa mayor capacidad de decentering, observación, descripción, actuación consciente, no juicio y no reacción.
- El proceso de decentering tiene un papel mediador entre la práctica meditativa y la congruencia conductual con los valores personales.
- Los procesos de decentering, descripción y no juicio tienen un papel mediador entre la práctica meditativa y el reconocimiento de valores personales y la plenitud vital.

6. LÍNEAS DE INVESTIGACIÓN FUTURAS

6. LINEAS DE INVESTIGACIÓN FUTURAS

Los resultados de ésta tesis confirman la EQ-Decentering como un instrumento de medida válido para este constructo y aportan nuevos datos en la dirección de considerarla una variable de salud transdiagnóstica y transterapéutica. En futuras investigaciones sería interesante continuar investigando sobre esta hipótesis y ver la relación entre la capacidad de decentering y la gravedad o la limitación funcional de los trastornos.

También se obtiene evidencia sobre los posibles mecanismos psicológicos implicados en el potencial terapéutico de la ayahuasca. La psicoterapia con sustancias psicoactivas está siendo un foco de interés en los últimos años, los resultados por el momento son esperanzadores pero hay mucho desconocimiento sobre su mecanismo de acción y las condiciones para garantizar la seguridad de este tipo de intervenciones. La capacidad de decentering, no juicio y no reacción podrían ser mecanismos para explicar su efecto. Sería interesante investigar si a la vez que una medida de cambio, la capacidad de decentering podría ser un criterio de selección de los sujetos con capacidad para sostener la intensidad emocional y elaborar la experiencia con la sustancia. Los resultados del trabajo presentado en el anexo 2 (todavía por publicar) muestran mayor capacidad de decentering en sujetos con más de 15 tomas de experiencia que en sujetos sin experiencia o con menor experiencia. Será necesario en estudios futuros confirmar la estabilidad de los cambios tras la toma y su relación con la frecuencia en el consumo de la sustancia. Otra línea de investigación consistiría en replicar el efecto de la sustancia sobre los mecanismos psicológicos observado en población sana en población clínica.

Por último hemos visto que la práctica meditativa incide en la regulación por valores gracias al efecto mediador del incremento en las capacidades de decentering, descripción y no juicio. Estos resultados tienen una gran relevancia clínica puesto que confirman que en un contexto terapéutico será necesario el entrenamiento en estas

habilidades para poder abordar la conciencia de valores personales y orientar la acción en función de éstos. Para futuras investigaciones que tengan que ver con valores personales será necesario mejorar las medidas sobre la conciencia de éstos diferenciando entre motivaciones intrínsecas y extrínsecas y valorar el uso de medidas implícitas para evitar el sesgo de la deseabilidad. Para próximos estudios sería interesante aclarar la relación del estilo de respuesta centrado (yo contexto y momento presente), con el estilo de respuesta comprometido (valores) y con el estilo de respuesta abierto (aceptación y defusión)

Será necesario continuar investigando sobre los mecanismos de acción de las psicoterapias y trasladar éstos resultados a la práctica clínica para mejorar la eficiencia de las intervenciones.

6. BIBLIOGRAFíA

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8. ANEXOS

ANEXO A. ESCALA EQ-DECENTERING

EQ

Instrucciones: A continuación, tienes una recopilación de afirmaciones sobre tu experiencia diaria durante los últimos _____ días. Utilizando la escala de 1-5, por favor indica con que frecuencia tienes estas experiencias. Contesta de acuerdo a lo que realmente refleje tu experiencia, más que lo que tú pienses que debería ser tu experiencia.

1- Soy más capaz de aceptarme a mí mismo como soy.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

2- Puedo enlentecer mi pensamiento en momentos de estrés.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

3- Me doy cuenta de que no me tomo las dificultades de forma tan personal.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

4- Puedo separar mis pensamientos y sentimientos de mi mismo.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

5- Puedo tomarme tiempo para responder a las dificultades.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

6- Me puedo tratar de forma amable.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

7- Puedo observar sentimientos desagradables sin ser arrastrado hacia ellos.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

8- Tengo la sensación de que soy completamente consciente de lo que està sucediendo a mí alrededor y dentro de mí.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

9- Veo que, en realidad, no soy mis pensamientos.

1	2	3	4	5
Nunca	Raramente	Algunas veces	A menudo	Siempre

ANEXO B. ARTÍCULO PENDIENTE DE PUBLICACIÓN

Title: Psychological variables implied in the therapeutic effect of ayahuasca: a contextual approach.

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Conflict of interest: The authors declare that they have no conflict of interests.

Funding: This study was not funded.

Abstract

Rationale: Ayahuasca is a psychedelic decoction originating from Amazonia. The ayahuasca-induced introspective experience has been shown to have potential benefits to treat several pathologies, to protect mental health and to improve neuropsychological functions and creativity, and boost mindfulness. The underlying psychological processes related to the use of ayahuasca in a psychotherapeutic context are not yet well described in the scientific literature, but there is some evidence to suggest that psychological variables described in psychotherapies could be useful to explain the therapeutic effects of the brew.

Objectives: In this study we explore the link between ayahuasca use and Decentering, Values and Self, comparing subjects without experience of ayahuasca (n=41) with subjects with experience (n=81).

Results: Results confirm that ayahuasca users scored higher than non-users in Decentering and Positive self, but not in Valued living, Life fulfilment, Self in social relations, Self in close relations and General self. Scores in Decentering were higher in the more experienced subjects (more than 15 occasions) than in the less experienced ones (less than 15 occasions).

Conclusions: Our results show that psychological process variables may explain the outcomes in ayahuasca psychotherapy. The introduction of these variables is warranted in future ayahuasca therapeutic studies.

Key words: Ayahuasca, Decentering, Values, Self, Psychotherapy, Contextual therapy.

1. Introduction

Ayahuasca is the name assigned to both the Amazonian liana *Banisteriopsis caapi* and any type of decoction containing it (Sánchez & Bouso, 2015). In some Amazonian regions where the use of ayahuasca is considered a tradition, decoctions also include leaves from *Psychotrotria viridis* (Rubiaceae) or from *Diplopterys cabrerana* (Malpighiaceae). *B. caapi* contains harmala alkaloids (harmine, harmaline and tetrahydroharmine), which act as IMAO's and *P. viridis* and *D. cabrerana* contain the alkaloid DMT (N,N-Dimethyltryptamine) associated with visionary effects. The combination of both plants results in MAO inhibition due to beta-carboline activity, blocking DMT degradation in the gastrointestinal tract, which allows for uptake by the brain (Riba, McIlhenny, Bouso, & Barker, 2015)

Ayahuasca is used by Amazonian native people for ritualistic, religious and ethnomedical purposes (Schultes & Farnsworth, 1980). During the last decade its use has reached an international sphere, it being use for religious, therapeutic and personal growth purposes (Labate & Feeney, 2012). Ayahuasca induces an altered state of consciousness with introspective effects and oneiric-like visions including autobiographic and emotional memories and transpersonal experiences (Bouso & Riba, 2011).

The ayahuasca-induced introspective experience has been shown to have potential benefits for improvement of several pathologies such as addiction (Nunes et al., 2016; Thomas, Lucas, Capler, Tupper, & Martin, 2013; Fernández et al., 2014), treatment-resistant depression (Osório et al., 2015; Sanches et al., 2016) and suicidal and aggressive behavior (Frecska, 2008; Grob et al., 1996). Ayahuasca also displays potential mental health protection (Bouso et al., 2012; Grob et al., 1996; Halpern, Sherwood, Passie, Blackwell, & Ruttenber, 2008), improved neuropsychological functions (Bouso et al., 2012, 2015; Bouso, Fábregas, Antonijoan, Rodríguez-Fornells, & Riba, 2013) and improved creativity (Frecska, Móré, Vargha, & Luna, 2012; Kuypers et al., 2016). Also, cortical thickness in long-term ayahuasca users has been correlated with cognitive capacities and personality traits (Bouso et al., 2015).

The underlying psychological processes related to the use of ayahuasca are not well described yet in the scientific literature, but there is some evidence suggesting that variables such as *Decentering*, *Values* and those related to the *Self* could be useful to explain the therapeutic effects of the decoction (Fernández et al., 2014; Soler et al., 2016; Thomas et al., 2013). Stories about subjective perception of ayahuasca benefits usually include references to "ego dissolution", "higher consciousness of important things", "contact with oneself", "improved ability to understand others", "greater acceptance of oneself and life events", "capacity of self-observation", and other similar processes related to personal growth (Bresnick & Levin, 2006).

Decentering is defined as "the ability to observe one's thoughts and feelings in a detached manner, as temporary events in the mind, as neither necessarily true nor reflections of the self" (Kerr, Josyula, & Littenberg, 2011; Safran & Segal, 1990). Decentering is a relevant construct since it has been pointed out as

necessary for healthy cognitive, psychological, and social functioning (Fresco et al., 2007) and could be considered as a transdiagnostic vulnerability factor shared among several mental disorders (Soler et al., 2014). Indeed, high levels of cognitive fusion at baseline predicted earlier relapse in subjects who had recently suffered from major depression (Teasdale et al., 2002) and, along with depression, low levels of Decentering has been observed in subjects suffering from borderline personality disorder, eating behaviour disorder and cocaine dependence (Soler et al., 2014).

Regarding *Values*, interventions focused on the work of personal values demonstrated improved response to stressors (Branstetter-Rost, Cushing, & Douleh, 2009; Gregg, Namekata, Louie, & Chancellor-Freeland, 2014) and quality of life (McCracken, 2013; Michelson, Lee, Orsillo, & Roemer, 2011). Shanon (2003) described the attribution of meaning as an effect of ayahuasca on consciousness, particularly aesthetic and transcendent value and transcendent experiences, which are hypothesized by Liester & Prickett (2012) as an important mechanism in the treatment of addictions. Bouso et al. (2012) found higher scores for spiritual orientation and purpose in life in ayahuasca users and Fernández et al. (2014) found positive changes in life attitudes and values in people who received ayahuasca together with psychotherapy in treatment of drug addiction.

Related to the *Self*, there is a relationship between the public control of the self and variables such as low self-esteem or high dissociation (Kanter, Parker, & Kohlenberg, 2001). Also, clinical samples show higher public control of the self than control samples (Kanter et al., 2001; Valero-Aguayo, Ferro-García, López-Bermúdez, & Selva-López de Huralde, 2014). Past literature has described the effects of ayahuasca on self. Shanon (2003) described phenomenological increases in self-consciousness, changes in the locus of consciousness, in the perceived boundaries of the self and in personal identity. Also Thomas et al. (2013) described a correlation between ayahuasca-assisted therapy for drug addiction treatment and subjective feelings of connection with self. In fact, hallucinogens induce a robust effect on self-structure (Lebedev et al., 2015) that may be basis for the reported long-term benefits (Griffiths et al., 2011; Griffiths, Richards, Johnson, McCann, & Jesse, 2008).

In this study we explore the link between ayahuasca use and Decentering, Values, and the Public control of self with the aim of characterizing the eventual factors that may explain the therapeutic potential of ayahuasca. For achieving that objective, we compared ayahuasca users with non-users in the mentioned variables. We hypothesize higher scores in Decentering and Values among ayahuasca users and lower scores in Public control of self. We also explored whether eventual changes in psychological processes are related to the frequency of ayahuasca use.

2. Methods

2.1. Participants and study procedure

122 participants completed the assessment scales. From the total participants, 41 had never used ayahuasca (non-users) and 81 had used ayahuasca

between 1 and over a 100 times. The ayahuasca group was recruited from associations and collectives of ayahuasca users linked to therapeutic, religious or personal growth purposes.

The study was conducted in accordance with the Declaration of Helsinki and subsequent amendments concerning research in humans and was approved by the Unió Catalana d'Hospitals Ethics Committee. All volunteers provided their written informed consent to participate.

2.2. Questionnaires

2.2.1. Descriptive variables:

- Sociodemographic variables: Age, gender, education level, ayahuasca use history, drug history and psychiatric medication.

- Brief Symptom Inventory 18 (BSI-18) (Derogatis, 2001) is a self-report scale that measures psychological distress. Items are rated with a Likert-type scale from 0 (nothing) to 4 (completely). Items are referred to symptoms experienced during the last 7 days. This scale is scored by adding the 18 items to a global severity index and also scores three subscales with six items each: somatization, depression and anxiety. For this study we used the Spanish version by Derogatis (2014).

- Psychoticism scale of the Symptoms Assessment-45 (SA-45-psychoticism) (Davison et al., 1997): has five items related to the last seven days experience measured with a Likert-type scale rated from 0 (nothing) to 4 (completely). For this study we used the Spanish version by Sandín, Valiente, Chorot, Santed, & Lostao (2008).

2.2.2. Psychological processes variables:

- Experiences Questionnaire (EQ) (Fresco et al., 2007) was designed to measure Decentering and rumination. It has 11 items measured with a Likert scale rating from 1 to 5. For this study we used the Spanish version by Soler et al. (2014).

- Engaged Living Scale (ELS) (Trompetter et al., 2013) is a self-report measure with 16 items in a Likert-type scale scoring from 1 to 5. It has two subscales: Valued Living (10 items) and Life Fulfilment (6 items). The scores on Valued Living reflect the recognition and knowledge of personal values and the undertaking of behavioural actions congruent with these values. The Life Fulfilment subscale is composed of items measuring the sense of fulfilment in life as a consequence of recognizing and living in accordance with personal values. For this study we used the Spanish version by Domínguez, Miragall, García-Campayo, Soler, & Cebolla (2014).

- The Experiencing of Self Scale (EOSS) (Kanter et al., 2001) is a measurement of the public control of the experience of the self and measures to what degree other people influence it. It has 37 items rated in a Likert-type scale rating from 1 to 7. It has four dimensions: Self in general, Self in social relations, Self in close relations and Positive self. For this study we used the

Spanish version by Valero-Aguayo, Ferro-García, López-Bermúdez, & Selva-López de Huralde (2014).

2.3. Statistical analysis

First, we compared the sociodemographic and descriptive variables between the non-ayahuasca users group and the ayahuasca users group. For categorical variables we used chi square test and t-test for quantitative variables. We also compared the two groups in history of substance use with a chi square test and psychopathology indexes with a t-test. Decentering, Values and Public control of the experience of self were compared between groups using a t-test for independent samples.

Subsequently, to study differences between subjects with low and high ayahuasca use experience, we reorganized subjects in three groups: non-users, subjects with more than 1 ayahuasca experience but less than 15 (AYA 1-15), and subjects with more than 15 ayahuasca experiences (AYA>15). Then we compared sociodemographic and descriptive variables between these new groups with chi square test and ANOVA with Bonferroni post hoc test correction. We compared the groups in Decentering, Values and Public control of the experience of self with an ANOVA with Bonferroni post hoc test correction.

Finally a correlation analysis between the number of ayahuasca experiences and process variables was made.

3. Results

The analysis in sociodemographic variables showed no differences in age, gender and education between ayahuasca users and non-users (Table 1).

---Please, insert Table 1---

Related to other substance use, we found that ayahuasca users had a higher ratio of use in the last six months of MDMA (χ^2=5.56; p=.018), but there were no differences in the use of cocaine (χ^2=3.13; p=.077), cannabis (χ^2=3.34; p=.068), amphetamines (χ^2=9.66; p=.326), ketamine (χ^2=.05; p=.824), opiates (χ^2=.97; p=.326), LSD or other hallucinogens (χ^2=2.47; p=.116) in the last six months. There were no differences between the groups in somatisation (t=.71; p=.479), depression (t=.48; p=.635), anxiety (t=1.118; p=.226) or the general index of BSI (t=60; p=.550) and in psychoticism (t=.48; p=.633).

Regarding the process variables, the group of ayahuasca users scored higher in Decentering and Positive self. There were no differences in Valued living, Life fulfilment, Self in general, Self in social relations or Self in close relations (Table 2).

---Please, insert Table 2---

After separating subjects who had experience with ayahuasca into two groups (subjects with less than 15 experiences and subjects with more than 15 experiences), both groups were compared again with the non-users group. The analysis in sociodemographic variables showed differences in age with higher

mean age in the group with more experience but there were no differences in gender or education level between groups (Table 3). There were no differences between groups in Somatisation, Anxiety, Depression or Psychoticism. When comparing the three groups examining the consumption of other substances in the last six months, significant differences were observed only in the consumption of MDMA, with a higher consumption among the subjects with less than 15 experiences of ayahuasca (χ^2=8.80; p=.012).

---Please, insert Table 3---

Comparing the three groups we observed significant differences in Decentering between the non-user group and AYA>15, and between AYA 1-15 and AYA>15. AYA 1-15 scored lower than AYA>15 in Valued living and higher in Self in social relations. AYA 1-15 scored higher also than both non-users and AYA>15 in Self in general.

---Please, insert Table 4---

Correlations between the number of experiences with ayahuasca and Decentering, Valued living, Life fulfilment, Self in general, Self in social relations, Self in close relations and Positive self were not significant (Table 5).

---Please, insert Table 5---

4. Discussion

Although ayahuasca has been internationally popularized as a personal growth enhancing spiritual tool (Kjellgren, Eriksson, & Norlander, 2009), and there is some evidence confirming its psychotherapeutic potential (dos Santos et al. 2016; Sanches et al., 2016), little research has been conducted trying to understand the psychological processes, or factors, that may explain its outcome effects (Soler et al., 2016; Thomas et al., 2013). In this study, we compared non-ayahuasca users with ayahuasca users in Decentering, Values and Public control of the experience of self, aswell in classical psychopathological measures.

As an initial result, there were no differences in psychopathology indexes of Somatisation, Depression, Anxiety and Psychoticism between users and non-users. These results are in consonance with previous studies conducted in different culture settings and countries where ayahuasca users did not show differences in psychopathology measurements compared to non-users (Barbosa et al., 2016; Bouso et al., 2012, 2015).

Regarding the process variables, ayahuasca users scored higher than non-users in Decentering, but when ayahuasca users are separated into two subsamples, only the users that had taken ayahuasca on more than 15 occasions scored higher than non-users and subjects with less experience. This result is in consonance with the only previous study using a measurement of Decentering where an improvement was found 24 hours after an ayahuasca experience compared with baseline (Soler et al., 2016). In that study the average number of ayahuasca experiences of the sample was 79. In contrast to these data, a previous study comparing a sample of cocaine users with a non-

clinical sample, showed significantly lower scores in the group of consumers (Soler et al., 2014, data not shown).

The increases on the ability to observe thoughts and feelings as temporary events in the mind, instead of seeing them as being true, has been pointed out as an underlying mechanism that partially explains the beneficial effects of therapies such Mindfulness Based Cognitive Therapy (MBCT) (Bieling et al., 2012) or Cognitive Behavioral Therapy (CBT) (Teasdale et al., 2002). Some data suggest that increases in Decentering may be particularly useful in preventing relapse on those receiving MBCT, and it is interesting to note that those patients treated only with antidepressant medications were also protected but changes in Decentering were observed (Bieling et al., 2012). In the same direction, with disorders such as Borderline Personality Disorder (BPD), both increases in Decentering and a reduction of BPD symptoms following Mindfulness intervention have been observed (Elices et al., 2016).

Regarding Values, the other psychological process variable studied here, there are many personal reports from ayahuasca users referring to the ayahuasca experiences as transformative ones that can be manifested as changes in personal values (Kavenská & Simonová, 2015). Previous studies found self-reported changes in life attitudes and changes in personal values and life meaning after the administration of different doses of psilocybin (Griffiths et al., 2011; Griffiths et al., 2008), and differences in life purpose and related variables in long-term ayahuasca users (Barbosa et al., 2016; Bouso et al., 2012). According to those studies, although we did not observe differences between ayahuasca users and non-users in Valued living and Life fulfilment, we found that subjects with more experience in ayahuasca use scored higher than subjects with less experience in Valued Living.

At last, differences between ayahuasca users and non-users in Public control of the experience of self was confirmed only for Positive self, but not for Self in social relations, Self in close relations or Self in general. Scores in Positive self refer to creativity and spontaneity and reflect the experience of wellbeing in solitude and a positive concept about one's self. Past literature has shown higher scores of positive self in a non-clinical sample compared to a clinical sample (Valero-Aguayo, Ferro-García, López-Bermúdez, & Selva-López de Huralde, 2014), and recent research has found changes in the personality trait Openness to experience months after the administration of psilocibyn (MacLean, Johnson, & Griffiths, 2011) and few weeks after an LSD (Lysergic Acid Diethylamide) experience (Carhart-Harris et al., 2016), as well as in a recent study comparing personality traits between regular ayahuasca users and non-users (Barbosa et al., 2016). Another study comparing personality traits between long-term ayahuasca users and non-users showed higher scores in the formers in "Sel-transcendence" (Bouso et al., 2012), a personality trait highly related with Openes to experience (De Fruyt, Van De Wieleb, & Van Heeringenb, 2000). In our study, after comparing our three groups we observed that subjects with less than 15 experiences with ayahuasca indicated a self more dependent on others in Social relations than subjects with more than 15 experiences, and also a self more dependent of others in General than subjects with more than 15 experiences and naïve subjects.

The lower results obtained by the less experienced ayahuasca users in Valued living and in some variables of Public control of self can reflect the state that motivates the search for solutions to issues via the consumption of ayahuasca, or it can reflect the crises described in the beginning of the psychedelic therapy process that lead subjects to question their previous functioning in a context with low ego defense mechanisms (Twemlow & Bowen, 1979). The higher scores in Decentering in experienced subjects would support this long-term therapeutic effect.

According to this, the ayahuasca-induced experience would not only be related to a cathartic reaction, but it would be integrated as part of a positive self, allowing these benefits to be integrated as part of daily life. Regarding this, another phenomena related to the research of the self that should be investigated in the future is the possible adverse effect of psychedelics known as "ego inflation" (Nour, Evans, Nutt, & Carhart-Harris, 2016) in order to have more knowledge regarding the practical consequences of the transformation in the self that can be observed in ayahuasca and/or other psychedelic users.

One of the limitations of this study is that the evaluation was performed solely with self-report questionnaires. We think that it would be very interesting to explore more specific measurements to evaluate changes in consciousness in the daily life and behavioural regulation through values as it could be changes in diet, conception of spiritual world, family, job, etc., that are contributing to changes. Another limitation of the study is the lack of information about the context, dosage and acute effects of ayahuasca use. Altought none of our subjects took ayahuasca just for recreastional purposes or in recreational settings. One last limitation is the retrospective approach of this study in which it is impossible to know if some of the differences are because of ayahuasca use or previous trait features such as personality traits or other substance use. Future prospective studies should be conducted to investigate this issue.

To summarize, these results confirm that ayahuasca use is related to a basic process linked to therapeutic change: Decentering. Given these results we may assume that more sessions would result in a better outcome on the target processes, but this is not confirmed since we did not find any correlation between the number of sessions and measurements of decentering, values or self. It is likely that variables such as individual differences, context of use, and the post session integration work are very important for the optimization of the therapeutic effects of ayahuasca. Other authors have emphasized the importance of the setting where ayahuasca is used in order to produce a therapeutic effect (Frecska, Bokor, & Winkelman, 2016). We think that previous work focusing on the openness to the experience, ability of observation, a low interventionist but attentive guide and a post session integration process with a metacognitive and validation approach could improve the therapeutic effect of the substance. It is necessary to continue studying the implicated factors in the therapeutic efficiency of ayahuasca use, both related to the drug itself and the inner and outer context of the subject.

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Tables

Table 1: Sociodemographic data.

	Non-users n=41	Ayahuasca users n=81	χ^2
Gender			3.256
Male	34.9%	51.9%	
Female	65.1%	48.1%	
Studies			5.932
Basic	2.4%	16.3%	
Bachelor or equivalent	12.2%	8.7%	
Professional training	17.1%	10%	
University	68.3%	65%	
	Mean (s.d.)	Mean (s.d.)	t
Age	42.4 (12.3)	41.7 (9.3)	.325

Table 2: Mean comparisons between ayahuasca users and non-users in psychological measures.

	Non-users n=41	Ayahuasca users n=81	
	$\bar{X}$ (s.d.)	$\bar{X}$ (s.d.)	t
EQ (decentering)	40.29 (5.73)	42.82 (6.30)	2.280*
Valued living	38.86 (6.40)	38.89 (6.55)	.103
Life fulfilment	21.11 (5.44)	21.85 (4.83)	.809
Self in social relations	16.70 (6.99)	17.94 (10.10)	.699
Self in close relations	26.74 (12.14)	24.44 (11.33)	1.156
Self in general	24.00 (6.79)	26.00 (9.56)	1.266
Positive self	26.00 (7.57)	28.78 (7.02)	2.272*

*p≤ .05

Table 3. Sociodemographic characteristics in the three groups.

	Non-users n=44	AYA 1-15 times n=44	AYA >15 times n=37	χ^2
Gender				4.84
Male	34.9%	45.5%	59.5%	
Female	65.1%	54.5%	40.5%	
Studies				9.43
Basic	2.4%	11.6%	21.6%	
Bachelor or equivalent	12.2%	11.6%	5.4%	
Professional training	17.1%	7%	13.5%	
University	68.3%	69.8%	59.5%	
	Mean (s.d)	Mean (s.d)	Mean (s.d)	F
Age	42.39 (12.32)	38.89 (7.48)	45.14 (10.22)	3.87*

*p≤ .05

Table 4: ANOVA between the three groups.

	Non-users $\bar{x}$(s.d.)	AYA 1-15 times $\bar{x}$(s.d.)	AYA>15 times $\bar{x}$(s.d.)	**F**	**Post hoc with Bonferroni**
EQ (Decenter-ing)	40.29 (5.73)	40.88 (6.20)	45.08 (5.71)	7.59**	0< +15** 1-15 <+15*
Valued Living	38.86 (6.36)	36.73 (6.62)	41.46 (5.54)	5.81**	1-15 <+15*
Life fulfilment	21.12 (5.44)	21.36 (4.99)	22.43 (4.64)	.747	
Self in social relations	16.71 (6.99)	20.25 (11.75)	15.19 (6.90)	3.44*	
Self in close relations	26.74 (12.14)	26.40 (12.64)	22.11 (9.18)	1.96	
Self in general	24.00 (6.77)	28.48 (10.16)	23.05 (7.95)	4.89*	1-15 >+15* 0<1-15*
Positive self	26.00 (7.57)	28.68 (6.28)	28.89 (7.89)	2.07	

*p≤ .05; **p≤.005

Table 5. Pearson correlations between the number of ayahuasca experiences and the psychological measures.

	EQ (Decentering)	Valued living	Life fulfilment	Self social	Self close	Self general
Number of experiences	.175	.151	.107	-.004	-.056	-.098