



UNIVERSIDAD DE LEÓN
Dpto. Psicología, Sociología y Filosofía

**Papel de perfiles psicológicos,
experiencias vitales, prácticas cotidianas
y patrones de uso de internet sobre la
calidad de vida de adultos y mayores**

*Role of psychological profiles, life experiences,
daily practices and patterns of internet use on the
quality of life of adults and older adults*

Tesis doctoral
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León, 2017

A mi familia

Agradecimientos

Han pasado ya varios años desde que comenzó esta aventura. El camino hasta llegar aquí ha sido largo, ha habido momentos duros, en ocasiones, todo se volvía cuesta arriba, pero sin duda, las personas que me han acompañado en su recorrido han contribuido a allanar el trayecto y facilitar el que hoy esté aquí plasmando estas palabras. Por ello, considero que se merecen mis más sinceros agradecimientos, ya que parte de este trabajo les pertenece.

En primer lugar y de manera especial, me gustaría dedicar unas palabras a mi director de tesis, el catedrático Jesús Nicasio García Sánchez. Gracias por depositar tu confianza en mí, por enseñarme, por aconsejarme, por tu tiempo, por tu apoyo y comprensión, por ser un modelo de esfuerzo, constancia y rigurosidad y sobre todo, por haberme contagiado tu entusiasmo por el mundo de la investigación. Nunca tendré suficientes palabras para agradecer la oportunidad que me has dado.

Quisiera agradecer también a la Universidad de León y en particular, al Departamento de Psicología, Sociología y Filosofía por el apoyo recibido a lo largo de estos cuatro años, sin el cual, no hubiera sido posible llegar hasta aquí. Me gustaría reconocer especialmente, por su trabajo y amabilidad, a Eva María Álvarez Balbuena. Por supuesto, no puedo olvidarme de mis compañeros del equipo de investigación, en especial de Alejandro. Muchas gracias por vuestra ayuda, comprensión y aportaciones a este trabajo.

En estos momentos, no puedo evitar recordar también los buenos momentos vividos en mi estancia en McMaster University (Canadá), la cual me permitió crecer personal y profesionalmente. Me gustaría dar las gracias en general a todo el departamento de Salud, Envejecimiento y Sociedad y al *Gilbrea Centre for Studies in Aging*, y en particular, al doctor James Gillett y a Amanda Grenier por haberla hecho posible y a Graham por su asesoramiento, su implicación personal conmigo, por su apoyo y su interés en mi investigación.

No quisiera olvidarme de todas aquellas organizaciones, instituciones, asociaciones, universidades, centros y personas de todo el territorio nacional que, de forma totalmente desinteresada, han participado en los estudios incluidos en estas tesis. Sin lugar a dudas, ellos han sido el verdadero motor de este trabajo.

Mención especial para mis compañeros de risas y llantos, Camino y Diego. Gracias por vuestras constantes muestras de cariño, por vuestras palabras de aliento y ánimo, por vuestros consejos y aportaciones, por esos momentos de desconexión, por vuestra comprensión. Escribiendo estas palabras me vienen a la mente muchos de los buenos momentos vividos a vuestro lado, lo que me hace no poder evitar dibujar una sonrisa en mi rostro. Sin lugar a dudas, sois los mejores compañeros que he podido tener.

Finalmente, he reservado estas últimas líneas para los que siempre están ahí, en las buenas y en las malas, mi familia y en especial, mis padres, mis abuelos, mi tío Herminio y mi pareja Fernando. Sin duda, a todos ellos tengo mucho que agradecer.

A mis padres, por vuestro infinito amor y cariño, por vuestras sabias palabras, por vuestros consejos, por vuestras noches en vela, por haberme indicado siempre el norte y devolverme de nuevo a la tierra cuando me alejaba de ella, por vuestros sacrificios en mi beneficio, por animarme a conseguir mis metas y por ser para mí un espacio de tranquilidad y sosiego.

A mis abuelos, porque vosotros sois un ejemplo de valores, de lucha, de coraje y sacrificio. Mis segundos padres más que abuelos.

A mi tío y padrino, porque sé que siempre estarás cuando te necesite, por tu humor y tu forma de hacernos reír, por tu confianza en mí y en definitiva, porque sabes perfectamente que eres mi tío favorito.

A mi pareja, porque he tenido mucha suerte de que te cruzaras en mi camino, porque has hecho que mi mundo sea más bonito, pero sobre todo, por tu paciencia, apoyo y comprensión.

Todos vosotros me habéis enseñado que con esfuerzo y dedicación se puede conseguir todo lo que uno se proponga. Que las tormentas son pasajeras y al final siempre sale el sol. Sin duda sois los principales merecedores de estas palabras, ya que vosotros sois los verdaderos artífices de este proyecto. Os pido perdón por todas las horas que no he podido disfrutar a vuestro lado a lo largo de estos años, pero prometo recompensarlo con creces. Muchas gracias por mostrarme el verdadero significado de las palabras familia y amor, amor infinito e incondicional como el que siento yo por vosotros. Sois imprescindibles en mi vida.

A todos vosotros, mis más sinceros agradecimientos.

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Introducción

Introducción

Uno de los principales retos a los que se enfrentan las sociedades actuales es al progresivo y continuo envejecimiento poblacional que exige respuestas políticas, sociales y científicas urgentes como forma de garantizar la calidad de vida y el bienestar de adultos y mayores (Henchoz et al., 2016; Swift, Abrams, Lamont, & Drury, 2017). Un buen ejemplo de ello es España, en donde según los últimos datos oficiales del Instituto Nacional de Estadística, hay más de ocho millones y medio de personas mayores de 65 años (INE, 2017), siendo previsible que esa cifra aumente en las próximas décadas con la llegada de las cohortes del *baby-boom*, llegando a superar los catorce millones en el año 2066 (Bellá-García, Ayala-García, & Pujol-Rodríguez, 2017).

Estas circunstancias han propiciado un marcado interés desde diferentes campos del conocimiento por el envejecimiento activo y todo lo que este concepto implica, incluyendo el fomento del bienestar, de la calidad de vida y de la participación activa en la sociedad (Wilson & Saklofske, 2017), una sociedad marcada por importantes cambios derivados del imparable avance de la tecnología, y en especial, de internet y de las diferentes herramientas de la web 2.0.

Estas nuevas herramientas tecnológicas han llegado para convertirse en parte integral de las actividades cotidianas y canales de involucración activa de la población en la sociedad, permitiendo construir conjuntamente el conocimiento, intercambiar información, colaborar y favorecer las conexiones sociales y en definitiva, contribuyendo a favorecer la calidad de vida y el bienestar (Hill, Betts, & Gardner, 2015; Lissitsa & Chachashvili-Bolotin, 2016). Si bien, a pesar de que el número de “*Silver Surfers*” a nivel mundial sigue creciendo día a día, aún parece existir una importante brecha digital de tipo generacional (Hargittai & Dobransky, 2017).

Así pues, dentro de este marco, y desde el enfoque de la psicología, nuestro interés se centró en estudiar los patrones de uso de internet y de las diferentes

herramientas de la web 2.0 por parte de adultos y mayores, incluyendo las barreras de accesibilidad y uso y los beneficios percibidos. Todo ello se analizó en relación al constructo de calidad de vida y sus factores condicionantes, poniendo especial énfasis en el análisis de los perfiles psicológicos, especialmente en relación a los componentes psicosocial y emocional (inteligencia emocional, afrontamiento, autoeficacia, motivación de logro y competencia social), las experiencias vitales y las prácticas cotidianas.

Para dar respuesta a estas inquietudes, se llevaron a cabo diferentes estudios que responden a unos objetivos específicos y a las preguntas de investigación que fueron surgiendo conforme avanzaba la misma.

Obviamente, en primer lugar, el interés de la investigación se centró en revisar la literatura existente en relación a cada uno de los constructos abordados en esta tesis (Estudio 1). La consecución de este objetivo nos permitiría responder a la primera pregunta de investigación planteada: ¿Cuál es el corpus de conocimiento existente en relación a los constructos abordados en esta tesis, a saber: competencias psicosociales y emocionales, calidad de vida y herramientas de la web 2.0 en adultos y mayores?

Seguidamente, y debido a la escasa investigación existente en la materia, nuestro interés se centró en analizar la viabilidad de la evaluación e intervención psicoeducativa sobre variables de calidad de vida y envejecimiento activo en adultos y mayores en modalidad online (Estudio 2). Para ello, se analizaron los factores que condicionan la eficacia de las intervenciones, comparando las modalidades virtual y presencial. De este modo, se pretendía determinar si existían razones fundamentadas que justificasen la escasez de estudios al respecto. Esto nos permitió responder a la segunda pregunta de investigación: ¿Existe una eficacia diferencial de las intervenciones en función de la modalidad de implementación (presencial/virtual)?; ¿qué factores condicionan dicha eficacia?

En tercer lugar, se estudiaron las barreras de uso de las herramientas de la web 2.0 en personas adultas y mayores a través de dos vías: (i) análisis de las herramientas existentes actualmente en la red para el abordaje de variables

psicosociales y emocionales a través de un proceso de búsqueda de recursos en la web y su análisis (Estudio 3), y (ii) revisión de estudios sobre patrones de uso de las herramientas de la web 2.0 (Estudio 4). Los resultados de ambos estudios nos permitirían responder a la tercera pregunta de investigación: ¿Cuáles son las causas de la brecha digital existente: características intrínsecas de las herramientas y/o factores de tipo personal?

Posteriormente, se llevó a cabo un estudio descriptivo a través de una encuesta online (Estudio 5) centrado en el análisis de los patrones de uso de las herramientas de la web 2.0, así como su relación con diferentes perfiles psicológicos (Estudio 6). De este modo, se respondería a la siguiente pregunta de investigación: ¿Existe relación entre el uso de las herramientas de la web 2.0 y diferentes factores psicosociales, emocionales y de envejecimiento activo?

Finalmente, se estudió el impacto de las experiencias vitales sobre la calidad de vida percibida, los perfiles psicológicos y las prácticas cotidianas de adultos y mayores, incluyendo el uso de herramientas de la web 2.0 (Estudio 7), respondiendo así a la quinta pregunta de investigación: ¿Influyen las experiencias vitales favorables y estresantes sobre los perfiles psicológicos, prácticas cotidianas y la calidad de vida de adultos y mayores?

De manera complementaria al estudio anterior, se determinaron las prácticas cotidianas, entre las que se incluye en uso de las herramientas de la web 2.0, las experiencias vitales y perfiles psicológicos que subyacen a diferentes percepciones de calidad de vida y satisfacción personal (Estudio 8), lo cual nos permitió responder a la sexta y última pregunta de investigación: ¿Qué tipo de prácticas cotidianas, patrones de uso de las herramientas de la web 2.0, experiencias vitales y perfiles psicológicos se esconden tras diferentes percepciones de calidad de vida y satisfacción personal?

A continuación, se presenta el marco teórico que justifica la pertinencia de la presente tesis doctoral y otorga unidad a la misma.

Los componentes psicosociales y emocionales como focos emergentes de interés de la investigación gerontológica

A pesar de que tradicionalmente la investigación gerontológica se ha centrado sobre las dimensiones física y cognitiva del adulto mayor, en la actualidad, las variables psicosociales y emocionales referenciadas se han configurado como uno de los núcleos emergentes de análisis, dado su impacto sobre la calidad de vida, el bienestar y la satisfacción vital. Debido al reciente despertar del interés por este campo, son pocas las evidencias halladas al respecto (Wilson & Saklofske, 2017).

La *inteligencia emocional* podría conceptualizarse como un conjunto estable de rasgos personales y otros que pueden ser adquiridos o potenciados a través de la instrucción pertinente, entre los que se incluyen competencias socioemocionales y motivacionales, así como ciertas habilidades cognitivas (Goleman, 1995). Recientes estudios nacionales e internacionales constatan importantes beneficios de la inteligencia emocional sobre la salud física y mental (Wilson, 2016). De este modo, las personas emocionalmente inteligentes presentarían, entre otras características, menores niveles de sintomatología depresiva y de ansiedad, relaciones interpersonales más satisfactorias, y un mayor bienestar (Veytia, Fajardo, Guadarrama, & Escutia, 2016). Si bien, parece ser que con la edad se produce un descenso en las puntuaciones sobre este constructo (Cabello, Sorrel, Fernández-Pinto, Extremera, & Fernández-Berrocal, 2016), lo que se traduce en dificultades en la expresión y reconocimiento emocional, pasando por problemas de regulación emocional, sin perder de vista importantes dificultades a la hora de integrar cognición y emoción con los efectos negativos que esto acarrea a largo plazo sobre el control de las emociones, el funcionamiento interpersonal, la memoria y el bienestar.

Los enfoques tradicionales han asociado una serie de estereotipos al envejecimiento, definiéndolo con una etapa de decadencia marcada por el deterioro de todas las funciones del adulto mayor (Swift, Abrams, Lamont, & Drury, 2017). Los enfoques actuales de envejecimiento la consideran como una etapa más de crecimiento. Sea como fuere, lo cierto es que la inteligencia emocional tiene un

importante papel a la hora de mediar la relación entre edad, bienestar subjetivo y satisfacción vital, por lo que adultos y mayores podrían utilizarla como recurso a la hora de mejorar su bienestar (Chen, Peng, & Fang, 2016).

La inteligencia emocional implica a su vez la capacidad para *afrentar* los diferentes retos que plantea la vida y esta capacidad de afrontar los desafíos está estrechamente ligada a la calidad de vida de adultos y mayores (Preposi et al., 2017). El envejecimiento es una etapa plagada de cambios que pueden desembocar en diferentes problemas de tipo físico y psicológico, por lo que es precisamente en este momento cuando las habilidades de afrontamiento cobran especial relevancia. La mayoría de los estudios desarrollados a este respecto se han ocupado del análisis de las estrategias de afrontamiento (O'Connor et al, 2017), identificando una tendencia a la utilización preferente con la edad de estrategias centradas en las emociones con el fin de aminorar el impacto emocional de la situación en detrimento de la tentativa de solucionar el problema. Aun así, otras investigaciones apuntan a la variabilidad en la elección de unas u otras estrategias en función del tipo de problema (Wen & Miller, 2017).

Unas estrategias de afrontamiento eficaces unidas a una alta *autoeficacia* favorecen una adecuada adaptación a cualquier situación (Adams et al., 2016) y si a su vez, a todo ello unimos una alta *motivación*, el éxito está garantizado. Bandura (1997) definió la autoeficacia como las creencias en la propia habilidad o eficiencia para manejar los desafíos de la vida diaria. Algunos estudios han constatado que el incremento de la autoeficacia contribuye a favorecer el bienestar y la calidad de vida, pero no solo eso, sino que promueve la *capacidad de autodeterminación* de las personas mayores (Mudrak, Stochl, Slepicka, & Elavsky, 2016; Suchy, Williams, Kraybill, Franchow & Butner, 2010). La mayoría de estudios en relación a esta dimensión se han fundamentado en el potencial de la autoeficacia para la mejora del rendimiento físico y cognitivo, las habilidades de la vida diaria y la salud física y mental (Olson et al., 2017; O'Shea et al., 2016; Resnick, Luisi, & Vogel, 2008; Thornton et al., 2016).

Tan importante como poseer unas herramientas personales que nos permitan adaptarnos a las diferentes situaciones que plantea la vida y sentirse bien con uno

mismo es poseer ciertas estrategias que nos permitan vivir con otros en sociedad. En este sentido, las más recientes investigaciones internacionales en el campo de la gerontología se han enfocado hacia el estudio de las redes de apoyo social. Estas redes contribuyen a favorecer calidad de vida de esta población, no solo porque proveen apoyos materiales e instrumentales que mejoran las condiciones de vida y favorecen el bienestar, sino también por su importante impacto a nivel emocional. Diversos estudios han mostrado cómo la integración social y las relaciones sociales pueden lograr un efecto positivo sobre la salud física y mental (Windsor, Rioseco, Fiori, Curtis, & Booth, 2016). La red social, tanto presencial como virtual, puede constituir un factor de protección frente a la pérdida de funcionalidad propia del colectivo de personas mayores, al tiempo que tiene importantes beneficios de tipo psicológico y emocional (Coelho & Duarte, 2016; Myhre, Mehl, & Glisky, 2016).

Todos estos constructos a los que nos hemos referido conforman en buena parte el perfil psicológico de cualquier persona.

Por tanto, aunque existe información sobre el impacto de todos estos factores sobre la calidad de vida y el bienestar de adultos y mayores, apenas se han estudiado en relación a las herramientas de la web 2.0. De ahí que esta cuestión constituya uno de nuestros focos de interés (Estudio 1).

Las herramientas de la web 2.0 en adultos y mayores: viabilidad de su uso para la implementación de intervenciones de envejecimiento activo, características intrínsecas y patrones de uso

El imparable avance de la tecnología y en especial, de internet y de las herramientas de la web 2.0, plantea nuevos retos a adultos y mayores (Delello & McWhorter, 2017). Si tenemos en cuenta que estas herramientas han llegado para convertirse en una parte indispensable de nuestras actividades cotidianas y por lo tanto, constituyen un elemento de participación activa en la sociedad, no podemos dejar de adoptar esta tecnología (Keränen et al., 2017). Si bien, es innegable que, aunque el grupo de adultos y mayores está más conectado digitalmente que nunca,

aún sigue existiendo una importante brecha digital de tipo generacional (Anderson & Perrin, 2017). Así por ejemplo, en el caso de España, según datos del Instituto Nacional de Estadística (INE, 2016), a partir de los 55 años, se produce un brusco descenso en el uso de internet. Cuando se pregunta a los participantes si alguna vez han utilizado internet, casi el 100% de menores de 45 años responden “sí”, de 45 a 54 años el porcentaje se sitúa en el 87,7%, descendiendo al 68% en el grupo de 55-64 años, resultando el porcentaje preocupante en la franja de edad de 65-74 años (38,1%).

Para dar respuesta a estas nuevas necesidades, en los últimos años ha surgido un nuevo campo de interés dentro de la investigación con adultos mayores, la gerontecnología, la cual concibe la tecnología como medio para garantizar el bienestar físico y mental, la autonomía y la participación social (Teh et al., 2016). Recientemente, están proliferando los estudios que, utilizando internet y las herramientas de la web 2.0, persiguen la optimización de la salud física y mental, la calidad de vida y el bienestar, y en concreto, pretenden favorecer las dimensiones cognitiva, social, afectivo-emocional, física, de autorregulación y manejo de la conducta. Tradicionalmente, estos programas e intervenciones se implementaban de manera presencial, si bien, aunque no siendo lo más habitual por el momento, comienzan a emplearse estos nuevos medios (García-Casal et al., 2017; Garnefski et al., 2013; Lorenz, Freddolino, Comas-Herrera, Knapp, & Damant, 2017; O'Connor, Arizmendi, & Kaszniak, 2014). A pesar de ello, no existen evidencias claras que constaten la eficacia de estas intervenciones. Mientras que algunos estudios destacan sus beneficios, otros los cuestionan. De ahí la necesidad de llevar a cabo un estudio que clarifique los factores que garantizarían la eficacia de las intervenciones y la viabilidad de las mismas en comparación con las tradicionales (Estudio 2).

Teniendo en cuenta el potencial de estas herramientas para la mejora de la calidad de vida y el bienestar, surge una importante cuestión ¿cuáles son las causas de la ya mencionada brecha digital que impiden que adultos y mayores puedan beneficiarse en mayor medida del potencial de estas herramientas? En este sentido, se abren dos posibles vías explicativas. Por un lado, el que las causas se sitúen en las propias características intrínsecas de las herramientas, concretándose en cuestiones

relativas al diseño, a la falta de disponibilidad o a la escasa adaptación a los intereses, necesidades, capacidades y demandas del adulto mayor, y por otro lado, el que estas causas tengan más que ver con variables de tipo personal, entre ellas, la falta de formación, de interés o actitud u otro tipo de cuestiones personales.

Mientras que los patrones de uso de las herramientas de la web 2.0 por parte de adultos y mayores han sido frecuentemente estudiados (Nimrod, 2016), lo cierto es que pocos estudios se han ocupado de analizar los recursos existentes en la red para abordar una determinada temática. Los que lo han hecho se han centrado principalmente en el campo de la salud, no existiendo ningún estudio hasta el momento centrado en el campo del envejecimiento activo y todos los elementos que lo integran, y que atienda no solo a aspectos relativos a la calidad de la información contenida y a factores que afectan a la accesibilidad y uso de los recursos, sino también a otros factores que repercuten sobre el diseño o relativos a la evaluación funcional de estas herramientas y que podrían condicionar la eficacia de tales intervenciones (Peacock et al., 2017). Precisamente, esto se constituye como otro de nuestros focos de interés (Estudio 3).

Como decíamos, otra de las posibles causas de la brecha digital generacional podría asentarse sobre factores de tipo personal, de ahí que ciertos estudios se hayan ocupado de analizarlos, estudiando los patrones de uso de las herramientas de la web 2.0, especialmente en relación a barreras percibidas en la accesibilidad y uso, pero sin olvidar otros indicadores como la información y conocimientos disponibles, la formación recibida, beneficios percibidos y finalidad de uso (González, Fanjul, & Cabezuelo, 2015; Sinclair & Grieve, 2017)

Se sabe que, en los últimos años, la adopción de estas herramientas por parte de adultos y mayores va en aumento. Esto puede haberse visto influenciado por el gran impulso que de hace pocos años a la actualidad se está dando a la formación en estas herramientas para adultos y mayores, existiendo tres vías principales de aprendizaje: el autoaprendizaje, con apoyo familiar y mediante cursos de formación (Agudo, Pascual, & Fombona, 2012; Martínez-Pecino, Delerue, & Silva, 2013; González et al., 2015; Perrin, 2015). Para el uso de las herramientas de la web 2.0,

los adultos y mayores necesitan sentir que les resulta un recurso útil para algún fin, de ahí que tiendan a utilizar estas herramientas principalmente con finalidad informativa, comunicativa, de ocio y entretenimiento, formativa o como medio para llevar a cabo diferentes tipos de gestiones (Agudo et al., 2012; González et al., 2015; Kwong, 2015; Llorente, Viñarás, & Sánchez, 2015; Martínez-Pecino et al., 2013; Smith & Anderson, 2016). Entre las barreras de accesibilidad y uso percibidas por adultos y mayores destacan tres tipos principalmente: *Barreras de tipo intrapersonal* (falta de interés, escasa capacidad, ausencia de percepción de beneficios emocionales, psicológicos y funcionales, falta de percepción de utilidad, falta de experiencia, miedo, ansiedad, falta de tiempo, problemas físicos, entre otras); (ii) *Barreras de tipo contextual* (falta de apoyo técnico, tradición, riesgo, falta de formación; falta de medios o alto coste de los mismos); y finalmente, (iii) *Barreras dependientes de la propias herramientas* (aspectos de confidencialidad, privacidad, falta de aplicaciones específicas, factores relativos a accesibilidad y usabilidad, entre otras).

A pesar de existir estudios sobre los patrones de uso de las herramientas de la web 2.0 (Estudio 4), ningún estudio hasta el momento se ha ocupado de analizar los perfiles psicológicos de usuarios mayores de las diferentes herramientas de la web 2.0, lo que sin duda podría condicionar tanto los patrones de uso, como los beneficios percibidos derivados del mismo (Estudios 5 y 6). Es más, los que lo han hecho, se han enfocado sobre otros grupos de edad y en relación al uso patológico de internet (Zhou, Li, Li, Wang, & Zhao, 2017).

En resumen, apenas se ha estudiado la viabilidad de las intervenciones virtuales en comparación con las presenciales, ni se han identificado los factores que, basados en la evidencia empírica, garantizarían la eficacia de las intervenciones (Estudio 2). A pesar de existir algunos estudios que analizan los patrones de uso de las herramientas de la web 2.0 y las barreras que condicionarían el mismo en adultos y mayores (Estudio 4), ninguna investigación hasta el momento se ha ocupado de llevar a cabo un análisis sistemático de las dos principales posibles causas de la brecha digital de tipo generacional existente: (i) características intrínsecas de los propios recursos orientados al fomento de la calidad de vida y el envejecimiento activo (Estudio 3), y (ii) factores de tipo personal, relativos a determinados

indicadores de uso, perfiles psicológicos y en definitiva, las propias percepciones de los usuarios (Estudios 5 y 6).

El papel de la historia personal: Relación entre perfiles psicológicos, experiencias vitales, prácticas cotidianas, patrones de uso de la web 2.0 y calidad de vida en adultos y mayores

Otro de los focos de interés de esta tesis doctoral lo constituye el estudio del impacto de las experiencias vitales sobre los perfiles psicológicos, las prácticas cotidianas y los patrones de uso de las herramientas de la web 2.0 (Estudio 7).

Es evidente que las experiencias vitales determinan en gran medida todo cuanto somos. Nuestra personalidad, nuestros intereses, nuestro estilo de vida, todo ello está parcialmente modelado por nuestra historia personal. Sin lugar a dudas, uno de los acontecimientos actuales más importantes que han repercutido sobre nuestras sociedades es el de la revolución tecnológica, especialmente marcada por la llegada de internet y de las herramientas de la web 2.0, lo que ha supuesto cambios sustanciales que afectan a nuestras vidas (El Haj & Antoine, 2017).

Tradicionalmente se ha recurrido a técnicas de reminiscencia y evocación de acontecimientos significativos a la hora de estudiar las experiencias vitales. Algunos estudios sugieren que el recuerdo de esas experiencias vividas incide positivamente sobre diferentes problemas afectivo-emocionales (ej. depresión, ansiedad), sociales, de tipo cognitivo y en general, sobre la salud física y mental, la satisfacción vital, el bienestar y la calidad de vida en diferentes tipos de población (El Haj & Antoine, 2017; Hyams & Scogin, 2015; Latorre et al., 2015; Lopes, Afonso, & Ribeiro, 2016; Wren, 2017). Otros estudios, sin embargo, sugieren que, un uso desadaptativo de este tipo de estrategias, podría desencadenar toda una serie de consecuencias negativas que socavarían el bienestar y la satisfacción vital. Por tanto, no existen evidencias claras que apoyen irrefutablemente que el recuerdo de estas experiencias pasadas tenga efectos positivos sobre la calidad de vida y el bienestar (Istvandity, 2017). Además, buena parte de estas investigaciones se han centrado en el análisis de

las experiencias vitales estresantes, sus consecuencias y el estilo de afrontamiento, especialmente, en población mayor, identificando toda una serie de acontecimientos que afectarían negativamente a la salud mental, al bienestar y a la calidad de vida (Chukwuorji, Nwoke, & Ebere, 2017; Donoghue, Traviss-Turner, House, Lewis, & Gilbody, 2016; Lasgaard, Armour, Holm, & Goossens, 2016; Latorre et al., 2015; Lee, Holst, Martin, & Poon, 2017; Randall, Baldwin, McKenzie-Mohr, McKim, & Furlong, 2015). Si bien, apenas se ha partido de un enfoque en positivo a la hora de estudiar estas relaciones.

Concretando, se podría decir que, aunque existe abundante investigación que probaría la repercusión de las experiencias vitales estresantes sobre el plano psicosocial y emocional de la persona, y en general, sobre su calidad de vida, hasta el momento los estudios no han puesto el acento sobre el papel de las experiencias vitales favorables.

Actualmente, existen estudios que han identificado toda una serie de *prácticas* basadas en la evidencia empírica que contribuirían a mejorar la calidad de vida. Entre ellas se encuentran el ejercicio físico, la actividad mental, las prácticas de autocuidado y el propio uso de internet. Si bien, no existen datos que determinen el modo en que las experiencias vitales definen las prácticas cotidianas de adultos y mayores, incluyendo el uso de internet y de las diferentes herramientas de la web 2.0.

En cuanto a la influencia de las experiencias vitales sobre los patrones de uso de las herramientas de la web 2.0, la investigación se ha volcado hacia el estudio del impacto de los eventos vitales estresantes sobre el uso patológico de internet, demostrando cómo este medio a menudo sirve como vía de afrontamiento, refugio o escape, favoreciendo la desconexión mental, la búsqueda de información en relación al problema y el apoyo social y emocional (Chan, 2015; Li, Zhang, Li, Zhen, & Wang, 2010; van Ingen, Utz, & Toepoel, 2016).

En definitiva, aunque existen datos sobre la incidencia de las experiencias vitales sobre los perfiles psicológicos, las prácticas cotidianas, y en general, sobre la satisfacción vital, el bienestar y la calidad de vida de adultos y mayores (Thomsen,

Steiner, & Pillemer, 2016), hasta el momento, poco se conoce sobre el impacto de las experiencias vitales de una persona sobre el uso cotidiano de las herramientas de la web 2.0.

Finalmente, nuestro último foco de interés se centró en el estudio de los perfiles psicológicos, las experiencias vitales y las prácticas cotidianas (incluido el uso de las herramientas de la web 2.0) que subyacen a diferentes percepciones de calidad de vida y satisfacción personal (Estudio 8).

A este respecto, las investigaciones más recientes en el campo sugieren la existencia de una serie de experiencias vitales y prácticas cotidianas que modularían la percepción de calidad de vida. Así, por ejemplo, la muerte de un ser querido, problemas en las relaciones interpersonales, los sentimientos de soledad, entre otros, inevitablemente afectarían negativamente a la salud mental (Chukwuorji et al., 2017; ; Donoghue et al., 2016). Entre las prácticas cotidianas, algunas como por ejemplo la práctica de ejercicio físico o el entrenamiento de la memoria, tendrían importantes efectos favorables sobre la salud física y mental, el plano social y favorecerían la calidad de vida y el bienestar (Lok, Lok, & Canbaz, 2017). A ellas se unen ciertas herramientas personales que definen en parte el perfil psicológico del individuo, entre las que se incluyen la inteligencia emocional, el apoyo social o ciertos estilos de afrontamiento, entre otros, que contribuirían a definir la percepción de bienestar (Krabbenborg et al. 2016; Zeidner et al. 2016).

Si bien existen datos generales que apuntan hacia la incidencia de determinadas prácticas cotidianas, experiencias vitales y rasgos psicológicos sobre la calidad de vida (Dardas and Ahmad 2015; Thomsen et al. 2016; Marcus-Varwijk et al. 2016), lo cierto es que ninguno de los estudios revisados se ha ocupado de analizar minuciosamente los tipos de prácticas cotidianas, experiencias vitales y perfiles psicológicos que se esconden tras diferentes percepciones de calidad de vida y satisfacción personal, lo que sin duda contribuiría a la identificación de factores que, por su papel protector, favorecerían la calidad de vida y el bienestar (Anagnostis et al. 2014).

Destino final: la calidad de vida y la satisfacción personal

La calidad de vida percibida envuelve las valoraciones o apreciaciones personales en relación a todas las facetas que integran nuestras vidas, atendiendo entre otras al plano físico, psicológico y social, al entorno y la autonomía. La satisfacción personal se puede considerar como un dominio de dicha calidad de vida e implica la satisfacción global con uno mismo. Ambos constructos, a pesar de caer en el plano de lo subjetivo, son tan o incluso más importantes que los indicadores estrictamente objetivos a la hora de definir el bienestar (Cardona and Agudelo 2007; Chaves et al. 2016).

He ahí que esta tesis doctoral esté principalmente enfocada hacia la identificación de aquellos predictores, indicadores y factores que promueven y/o condicionan dicha calidad de vida en el marco de la era digital en la que estamos envueltos. Todo ello sin perder de vista la promoción de un envejecimiento activo, saludable y exitoso y la idea clara de que *envejecer no consiste en sumar años a la vida, sino vida a los años.*

Publicaciones incluidas en la tesis doctoral

Estudios de revisión de antecedentes empíricos

Estudio 1

Díaz-Prieto, C. & García-Sánchez, J. N. (2013). Posibilidades de la web para el despliegue de intervenciones integrales con personas mayores. *International Journal of Developmental and Educational Psychology*, 2(1), 721-728. url: http://infad.eu/RevistaINFAD/2013/n1/volumen2/INFAD_010225_721-728.pdf

Estudio 2

Díaz-Prieto, C., & García-Sánchez, J. N. (2016). Identification of relevant elements for promoting efficient interventions in older people. *Journal of Psychodidactics*, 21(1), 157-173. doi: <http://dx.doi.org/10.1387/RevPsicodidact.13854>

Estudio 3

Díaz-Prieto, C., & García-Sánchez, J. N. (in press). Analysis of online gerontechnology resources for active ageing. *Research on Ageing and Social Policy*

Estudio 4

Díaz-Prieto, C., & García-Sánchez, J. N. (in press). Patrones de uso de las herramientas de la web 2.0 en mayores. *International Journal of Developmental and Educational Psychology*

Estudios sobre patrones de uso de las herramientas de la web 2.0 y perfiles psicológicos asociados

Estudio 5

Díaz-Prieto, C., & García-Sánchez, J. N. (2015). Internet en mayores (INMA). *International Journal of Developmental and Educational Psychology*, 2(1), 35-42. doi: <http://dx.doi.org/10.17060/ijodaep.2015.n1.v2.41>

Estudio 6

Díaz-Prieto, C. & García-Sánchez, J. N. (2016). Psychological profiles of older adult Web 2.0 tool users. *Computers in Human Behavior*, 64, 673-681. <http://dx.doi.org/10.1016/j.chb.2016.07.007>

Estudios sobre la relación entre experiencias vitales, prácticas cotidianas, perfiles psicológicos, uso de herramientas de la web 2.0, calidad de vida y satisfacción personal

Estudio 7

Díaz-Prieto, C. & García-Sánchez, J. N. (under review). The influence of life experiences on perceived quality of life, practices, psychological profiles and use of web 2.0 tools in adults and older adults. *Computers in Human Behavior*

Estudio 8

Díaz-Prieto, C. & García-Sánchez, J. N. (under review). Practices, life experiences and psychological profiles according to quality of life and personal satisfaction in adults and the elderly in Spain. *Applied Research in Quality of Life*

Estudios de revisión de antecedentes empíricos

Estudio 1

Posibilidades de la web para el despliegue de intervenciones integrales con personas mayores

International Journal of Developmental and Educational Psychology, 25, (1, 2), 2013, págs. 721-728. ISSN: 0214-9877

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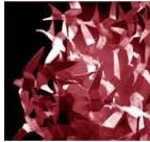
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Referencia:

Díaz-Prieto, C. & García-Sánchez, J. N. (2013). Posibilidades de la web para el despliegue de intervenciones integrales con personas mayores. *International Journal of Developmental and Educational Psychology*, 25, (1, 2), 721-728. url: http://infad.eu/RevistaINFAD/2013/n1/volumen2/INFAD_010225_721-728.pdf



POSIBILIDADES DE LA WEB PARA EL DESPLIEGUE DE INTERVENCIONES INTEGRALES CON PERSONAS MAYORES

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Fecha de recepción: 4 de octubre de 2012

Fecha de admisión: 15 de marzo de 2013

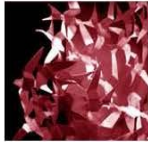
ABSTRACT

The psychosocial, emotional and technological adaptation needs of the elderly have been increasing for several reasons. The objective of this study is to carry out a review about the main results of the research on these issues, with the long term goal of designing, implementing and perform a differential evaluation of a comprehensive program for the development of these competences in older people through the tools of Web 2.0. The study was divided into two parts. In the first, we present evidence from the review process on emotional and psychosocial variables. The second shows the results obtained in relation to the tools of Web 2.0. Finally, we discuss the relevance of developing interventions in this line. During this research study, we received competitive funds from the Spanish Ministry of Education, Science and Innovation (MICINN) (EDU2010-19250 / EDUC) for 2010-2013, awarded to the Director/Main Researcher (J. N. García). C. Díaz-Prieto received funds from the FPU MECD for 2013-2017.

Keywords: emotion, coping, self-efficacy, social-communicative competence, web 2.0.

RESUMEN

Las necesidades psicosociales, emocionales y de adaptación tecnológica del adulto mayor han ido en incremento en los últimos años por diversas razones. Lo que se pretende con este estudio es llevar a cabo una revisión en torno a los principales resultados de la investigación sobre estas temáticas, con el objetivo a largo plazo de diseñar, implementar y llevar a cabo una evaluación diferencial de un programa integral para el desarrollo de estas competencias en personas mayores a través de las herramientas de la web 2.0. El estudio se divide en dos partes. En la primera, se presen-



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tan las evidencias obtenidas del proceso de revisión sobre variables psicosociales y emocionales. En la segunda, se muestran los resultados obtenidos en relación a las herramientas de la web 2.0. Finalmente, se discute la pertinencia de desarrollar intervenciones en esta línea. Durante la realización de este estudio se recibieron ayudas competitivas del proyecto del MICINN (EDU2010-19250/EDUC) para el trienio 2010-2013; concedido al IP (J. N. García) así como una beca predoctoral (FPU-MECD) para el cuatrienio 2013-2017 concedida a C. Díaz-Prieto.

Palabras clave: emociones, coping, autoeficacia, competencias sociocomunicativas, web 2.0.

INTRODUCCIÓN

En el momento actual, el número de personas mayores a nivel internacional se ha incrementado considerablemente debido al aumento de la esperanza de vida y la mejora de la calidad de vida y la sanidad. Concretamente, según las últimas estimaciones de Naciones Unidas (2011), la población mundial mayor de 65 años ronda los 537 millones de personas, lo que representa el 7,7 % de la población mundial, augurando un envejecimiento drástico de la población en los próximos años. Inmersos en este nuevo contexto, las necesidades de estas personas son cada vez más complejas; entre ellas, todo lo relacionado con los factores y variables psicosociales (autoeficacia, competencia social, competencia comunicativa oral y escrita y habilidades de afrontamiento o *coping*) y emocionales, las cuales se encuentran en la base y contribuyen a la optimización de la calidad y la satisfacción vital, del bienestar personal y al “envejecimiento exitoso” de nuestros mayores.

Debido al acelerado progreso y expansión de las innovaciones tecnológicas que se ha ido produciendo en las últimas décadas, junto a esas necesidades psicosociales y emocionales, surgen otras necesidades y oportunidades para el colectivo de personas mayores; entre ellas, las relacionadas con el acceso y manejo de las diferentes herramientas que la web 2.0. pone a su disposición, lo que en el caso de las personas mayores puede contribuir al tiempo a la mejora de su calidad de vida; al establecimiento, mantenimiento y mejora de las relaciones sociales y a mantenerse más activos y saludables, así como a la superación de prejuicios demostrando a la sociedad que tercera edad no es sinónimo de pasado (González, 2010).

Por ello, lo que se persigue con este estudio es revisar los estudios más recientes en relación a estas temáticas, discutiendo las posibilidades de trabajar estas dimensiones del adulto mayor a través de las oportunidades que nos ofrecen las nuevas herramientas de la web 2.0. El estudio se divide en dos partes. En la primera, se presentan las evidencias obtenidas del proceso de revisión sobre variables psicosociales y emocionales. En la segunda, se muestran los resultados obtenidos en relación a las herramientas de la web 2.0 y otras herramientas tecnológicas. Finalmente, se plasman las principales conclusiones obtenidas en este proceso de revisión.

LAS COMPETENCIAS PSICOSOCIALES Y EMOCIONALES COMO COMPONENTES NECESARIOS DE UN ENFOQUE INTEGRAL

Son diversas las razones que justifican la integración de competencias psicosociales y emocionales en un enfoque integral de intervención.

A pesar de ser uno de los núcleos de interés de la investigación gerontológica en los últimos años, las pocas evidencias existentes en relación a las *variables emocionales* apuntan hacia la aparición de un efecto de positividad en la expresión y el reconocimiento emocional con la edad, produciéndose dificultades de reconocimiento de las emociones de signo negativo, a la vez que disminuye la experimentación de emociones negativas como la ira. Al tiempo, los ancianos, aun utilizando más estrategias de regulación emocional que las personas más jóvenes, éstas son pasivas, a la vez que con la edad disminuye la habilidad para integrar cognición y emoción, con los efectos negati-



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vos que esto acarrea a largo plazo sobre el control de las emociones, el funcionamiento interpersonal, la memoria, el bienestar y los síntomas depresivos. Asimismo, parecen existir una serie de factores cuya presencia o ausencia incide sobre el estado de ánimo y las emociones experimentadas por las personas mayores en dirección positiva o negativa. Entre estos factores se incluyen la institucionalización, los déficits sensoriales y la práctica de actividad física, constituyéndose las propias emociones positivas en un factor protector frente a determinadas "dolencias" que atacan al estado de ánimo como la depresión.

Tal y como señalan González y Padilla (2006), la calidad del vida del adulto mayor va asociada a su forma de afrontar los problemas, de ahí que este elemento deba formar parte de un futuro enfoque integral de intervención. En líneas generales, parece ser que las personas mayores tienden a utilizar preferentemente estrategias de *afrontamiento* centradas en las emociones con el fin de aminorar el impacto emocional que la situación provoca en su persona, en detrimento de la tentativa de solucionar el problema. No obstante, algunos estudios sostienen que la elección de una u otras estrategias por parte de las personas mayores varía en función del tipo de problema.

En lo que se refiere a la *autoeficacia*, ha sido estudiada en relación a diferentes focos. Así por ejemplo, Cooper, Huisman, Kuh & Deeg (2011) constataron la existencia de una asociación entre la disminución general de la autoeficacia y la disminución funcional. A pesar de que como señalan Del Refugio & González (2011) con la edad se produce inevitablemente una disminución de la capacidad funcional, es posible que los adultos mayores optimicen sus capacidades y recursos actuales para lograr una mejor re-apreciación de su eficacia para realizar actividades de la vida cotidiana y con ello logren un envejecimiento exitoso. En resumen, y siguiendo a Mullen, McAuley, Satariano, Kealey & Prohaska (2012), podemos decir que las creencias de autoeficacia pueden ayudar a reducir o posiblemente retrasar la aparición de limitaciones funcionales. De igual forma, otros estudios apuntan hacia el papel de la autoeficacia como predictora de los índices de participación y mantenimiento de actividades físicas y sociales, mientras que las menores puntuaciones en actividad física y autoeficacia conducen a mayores limitaciones funcionales y baja autoestima.

Por su parte, Navarro, Bueno, Buz & Mayoral (2006) constataron como la mayoría de las personas mayores de 75 años tienen buenas expectativas de autoeficacia para el manejo de los problemas actuales y futuros. Si bien, existen diferencias en función de la edad y el género. De este modo, las personas mayores de 85 años y mujeres presentarían niveles más bajos de autoeficacia. Asimismo, llegaron a la conclusión de que la percepción de autoeficacia futura predice la satisfacción vital de las personas muy mayores.

Carrasco, Herrera, Fernández y Barros (2012), encontraron que la baja autoeficacia puede estar relacionada con la aparición de síntomas depresivos en adultos de 60 y más años. En definitiva, la autoeficacia puede actuar como estrategia de afrontamiento y prevención de problemas de salud y de participación social (Rueda & Pérez, 2004), pero no solo eso, sino que puede servir como recurso de resiliencia y de *coping* (Schneller & Vandsburger, 2008). A juzgar por estos datos, parece inevitable su integración como parte de un enfoque integral.

Por lo que respecta a la *competencia social*, los diferentes estudios apuntan en dos direcciones. La primera de ellas es la que se refiere a las *redes de apoyo social*. La mayoría de estudios en esta línea se centran en determinar los beneficios de estas redes de apoyo. Así, algunos estudios coinciden en remarcar la importante influencia protectora que desempeñan las redes sociales sobre el deterioro cognitivo, la dependencia, la percepción de la salud, la depresión, el deterioro funcional, el bienestar; la soledad; la ansiedad y la felicidad, de ahí nuestro interés por su integración en un enfoque integral de intervención.

Por lo que respecta al segundo grupo de interés dentro de estos estudios, el compromiso social o altruismo, ya desde la corriente de la psicología positiva, Csikszentmihalyi (1996) señala como el nivel de felicidad aumenta a medida que una persona es más altruista. En este sentido, los datos



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revelan cómo las personas mayores con alto compromiso social, entendido éste como voluntariado y desempeño de actividades altruistas, presentan alta satisfacción con la vida, mayor afecto positivo, más altos niveles de intercambios sociales positivos y una mayor disponibilidad de apoyo social de amigos y familiares, en relación con los no voluntarios. Al mismo tiempo, parece ser que los adultos mayores que muestran mayor participación en diferentes tipos de actividades sociales reportan mayores puntuaciones cognitivas, de atención, y en autoeficacia. A la vez, este compromiso social favorece la salud física y mental; el bienestar psicológico y previene el declive funcional y los síntomas depresivos.

Finalmente, en cuanto a la competencia comunicativa, los únicos estudios hallados se centran en el uso de ésta, tanto en su modalidad oral como escrita, como medio para aminorar diversas “dolencias emocionales” como el estrés, la ansiedad y la depresión, así como mejorar la autoestima, el estado anímico, la regulación emocional, la inteligencia emocional y la calidad de vida, utilizando en la mayoría de las ocasiones historias de vida y terapias de reminiscencia.

Dada la relevancia de todos estos factores, entendemos de suma importancia integrarlos dentro de un enfoque de intervención integral que contribuya en un sentido amplio a mejorar la calidad de vida, el bienestar y garantizar el envejecimiento activo y exitoso de nuestros mayores, más aún, favoreciendo su acercamiento a las nuevas herramientas de la web 2.0.

ENFOQUE PSICOSOCIAL Y EMOCIONAL INTEGRAL A TRAVÉS DE LAS HERRAMIENTAS DE LA WEB 2.0.

No debemos olvidar que inmersos en la Sociedad del Conocimiento y de la Información, y teniendo en cuenta dos acontecimientos que están marcando nuestro presente: el creciente envejecimiento de la población y la rápida difusión de las innovaciones tecnológicas; debemos acercarnos al adulto mayor a las nuevas oportunidades derivadas de éstas, de otra manera, correríamos el riesgo de acrecentar la brecha digital, lo que llevaría a las personas mayores a una situación de aislamiento dentro de un mundo global.

Según Torrelló (2008), en un estudio donde evaluaba las necesidades de formación en personas mayores a partir de los 50 años, las TIC se configuraban como una de ellas. De igual modo, el Libro Blanco sobre Envejecimiento Activo (2010) incluye un apartado dedicado a la formación de las personas mayores, donde las nuevas tecnologías tienen un importante papel en pro de mantener una actividad física, psíquica y social de las personas durante todas las etapas de su vida, desde su niñez temprana hasta su madurez tardía.

Siguiendo a Czaja, Charness, Fisk, Hertzog, Nair, Rogers & Sharit (2006), no tener acceso y poder utilizar la tecnología cada vez más pondrá a los adultos mayores en desventaja en términos de su capacidad para vivir y funcionar de manera independiente y negociar con éxito en el entorno construido. Además, añaden que la tecnología tiene el potencial de aumentar la calidad de vida, puede mitigar los problemas de aislamiento social, fomentar los vínculos con la familia y los amigos, y facilitar la realización de actividades esenciales.

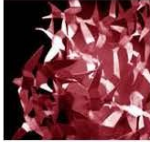
La proliferación de *herramientas de la web 2.0* para este colectivo no es nueva y va en aumento. Si bien, la investigación científica no sigue esta tendencia a juzgar por el escaso número de publicaciones en relación a esta temática en personas mayores. En la tabla 1 se muestran algunos programas implementados a través de estas herramientas y otras herramientas tecnológicas que ya han demostrado su eficacia.



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FOCO	HERRAMIENTAS	DESCRIPCIÓN	RESULTADOS	ESTUDIOS
Internet	Curso presencial	Curso sobre el uso de internet	El uso de internet favorece el autocontrol, el bienestar, la satisfacción con la vida, reduce la depresión y la soledad	Shapira, Baraka & Gala (2007)
Comunicación, estimulación cognitiva, interacción	Youtube	Sitio web en el cual los usuarios pueden subir y compartir videos	Herramienta útil para llevar a cabo terapia de reminiscencia, mejorar el bienestar, el estado de ánimo, mayor participación en el grupo y comunicativa.	O'Rourke, Tobin, O'Callaghan, Sowman1 & Collins (2011)
Actividad física	Videojuego	Juegos "Wii Fit"	Mejora de la independencia funcional y el movimiento de los brazos	Ching, Chan, Fung, Yee, Ka & Hon (2012)
Autoeficacia	Videojuegos	Juegos realidad virtual	Aumentan la confianza para el equilibrio y disminuyen el riesgo de caídas entre las mujeres que viven en la comunidad.	Singh, Rajaratnam, Palaniswamy, Raman, & Bong, (2012)
Envejecimiento activo	Recurso multimedia	Módulos de programa: - «Promoción de la salud y de la forma física y la prevención de las capacidades físicas» - «Optimización y compensación cognitiva» - «Desarrollo de la afectividad y la personalidad» - «Maximización de la implicación social»	Mejora en todos los módulos utilizados, excepto relaciones sociales y salud. Mayor efectividad de la modalidad multimedia en calidad y control de la alimentación, en la frecuencia e intensidad de ejercicio físico y, sobre todo, en la satisfacción con la vida.	Fernández-Ballesteros, Caprara, Iñiguez & García (2005)
Relaciones intergeneracionales	Videojuego 3D	Videojuego "Age Invaders"	Favorece las relaciones intergeneracionales, físicamente y a través de internet.	Cheok, Lee, Kodağoda, Eng & Thang (2005)
Actividad física	Videojuego	Virtual fitness: Videojuego que permite practicar ejercicio físico con dos niveles de dificultad y dos modalidades de entrenamiento.	Incremento de la motivación intrínseca para la actividad física	Ijsselstein, de Kort, Westerkamp, de Jager & Bonants (2006)
Autonomía	Hardware	Personal Digital Assistants (PDAs): Hardware como herramienta para recordar la toma de la medicación.	Los adultos mayores pueden beneficiarse de PDAs como ayudas a la memoria prospectiva durante la adherencia a la medicación, aun tardando más que los jóvenes en aprender su funcionamiento.	Mayhorn, & Sterns (2006)
Bienestar (ansiedad y tristeza)	Videojuego	Dos entornos virtuales utilizados como procedimientos de inducción del estado de ánimo para personas mayores	Incremento significativo de alegría y relajación y disminución significativa en la tristeza y la ansiedad, mejorando el bienestar de las personas mayores.	Baños, Etchenedy, Castilla, García-Palacios, Quero & Botella (2012)
Actividad física	Videojuego	Sony PlayStation II EyeToy VR system orientado a la mejora de la aptitud física.	Mejora de los niveles de aptitud física en personas mayores con discapacidad intelectual y dificultades del desarrollo.	Lotan, Yalon-Chamowitz & Weiss (2009)
Memoria a largo plazo, comunicación	Recurso multimedia	Proyecto CIRCA: Incluye audio, video, animación y ambientes QuickTime VR junto a la terapia de reminiscencia para estimular la memoria a largo plazo para impulsar la comunicación verbal y no verbal en personas mayores con Alzheimer con la colaboración de sus cuidadores.	Mejora de la comunicación y la calidad de vida percibida	Gowans, Campbell, Alm, Dye, Astell & Ellis (2004)
Actividad física	Videojuego	Juegos interactivos de fisioterapia	Mejora en la prueba Timed Up and Go en comparación con la fisioterapia convencional.	Laver, George, Ratcliffe, Quinn, Whitehead, Davies & Crotty (2012)

Tabla 1. Estudios que emplean herramientas virtuales para personas mayores



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Como es posible comprobar, la mayoría de estos estudios se centran en focos diferentes a los de nuestro interés y además, en ninguno de ellos se adopta un enfoque integral de intervención. Por todas estas razones, nuestro propósito para el futuro será diseñar, implementar y evaluar programas orientados a la optimización de variables psicosociales y emocionales desde una perspectiva integral en personas mayores, comprobando la eficacia y eficiencia diferencial de cada uno de ellos en función de variables como el tipo de población o las características de la misma, siendo esta información muy valiosa con fines de intervención social y educativa.

DISCUSIÓN Y CONCLUSIONES

El propósito de nuestro estudio era revisar la literatura existente en relación a variables psicosociales (autoeficacia, competencia social, competencia comunicativa oral y escrita y *coping*) y emocionales en personas mayores, analizando a su vez, las posibilidades de trabajar estas dimensiones del adulto mayor a través de las oportunidades que nos ofrecen las nuevas herramientas de la web 2.0. en base a los estudios ya existentes.

Tras esta revisión, podemos señalar que las personas mayores presentan importantes carencias en las dimensiones psicosociales y emocionales de su persona. Si bien, teniendo en cuenta los beneficios que del aprendizaje y del correcto uso de estas competencias se pueden obtener, entendemos de gran relevancia implementar futuras intervenciones en esta línea.

Por otro lado, y en relación a la revisión de estudios sobre herramientas de la web 2.0. hemos constatado el escaso interés que por esta temática ha tenido la investigación gerontológica en los últimos años, a pesar de ser un foco de interés en auge en la mayoría de campos del conocimiento. Si bien, sí se han realizado bastante estudios empleando otras herramientas tecnológicas. Ante esta situación, nos planteamos para futuros estudios la implementación de programas psicosociales y emocionales integrales a través de estas herramientas. Dado que las variables abordadas se consideran fundamentales para la promoción de la salud, el bienestar y la calidad de vida de las personas de cualquier rango de edad, estaríamos aportando un importante instrumento para favorecer el bienestar y la adaptación personal y social, dotando a las personas mayores de una serie de herramientas que les permitirán conocer, comprender y actuar de manera eficaz en sus vidas, lo que indudablemente, y tal y como demuestran otras investigaciones en este campo, contribuirá a la prevención de diversas enfermedades de índole física y mental (depresión, ansiedad, problemas funcionales...) a la satisfacción con la vida y lo que es más importante, a un envejecimiento exitoso.

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Estudio 2

Identification of Relevant Elements for Promoting Effective Interventions in Old Age

Journal of Psychodidactics (vol. 21, N° 1, 2016, págs. 157-173). ISSN: 1136-1034

Factor de impacto (FI)

JCR (2.237)- Psychology, Educational-Q2- Rank 15/58
FI-5 años (1.758)
SJR (0.771). Education- Q1. Developmental and Educational Psychology - Q2
H Index (12)
Sello de calidad FECYT
Cited Half-Life (4.4)
Immediacy index (0.350)
Eigenfactor score (0.00032)
Article influence score (0.231)
ICDS (8.8)
CARHUS Plus+ 2014 (GRUPO A)
Indexada en: SSCI (ISI), Francis, Zeitschriften-datenbank, Cindoc (ISOC), Cirbic, Psicodoc, Psedisoc, Ccuc, Redalyc, Latindex, Rebiun, Compludoc, Google Scholar, Cbuc, Scopus, IRESIE.

Referencia:

Díaz-Prieto, C., & García-Sánchez, J. N. (2016). Identification of relevant elements for promoting effective interventions in old age. *Journal of Psychodidactics*, 21(1), 157-173. doi: <http://dx.doi.org/10.1387/RevPsicodidact.13854>

Identification of Relevant Elements for Promoting Effective Interventions in Old Age

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Abstract

The aim of this review is to identify relevant elements that ensure the effectiveness and efficiency of empirically based interventions (EBI), contrasting virtual and face-to-face intervention on active aging variables based on these indicators. We selected and encoded the 38 intervention studies (24 face-to-face, 12 virtual and 2 both modalities). These studies focus on six dimensions of quality of life, were published in the last decade and provide us data that allow the calculation of effect size and other comparative analysis. Descriptive and multivariate analyses show that the effectiveness of virtual empirically based interventions is comparable with face-to-face intervention depending on EBI indicators. We discuss the contributions and perspectives of such interventions. In conclusion, we advocate the need to increase the requirement of compliance with EBI indicators in interventions of this type.

Keywords: virtual interventions, face-to-face interventions, active aging, empirically based interventions.

Resumen

El objetivo de esta revisión es identificar los elementos relevantes que garantizan la eficacia y eficiencia de las intervenciones basadas empíricamente (IBE) contrastando la modalidad virtual y presencial sobre variables de envejecimiento activo en función de estos indicadores. Se seleccionaron y codificaron los 38 estudios de intervención (24 presenciales, 12 virtuales y 2 ambas modalidades) centrados en las 6 dimensiones de calidad de vida, publicados en la última década y que aportaban datos que permitían el cálculo del tamaño del efecto, así como otros análisis comparativos. Los análisis descriptivos y multivariados practicados muestran una eficacia de las intervenciones virtuales basadas empíricamente comparable con las presenciales dependiendo de los controles practicados. Se discuten las aportaciones y perspectivas de dichas intervenciones a la luz de los resultados y se concluye en la necesidad de aumentar la exigencia de cumplimiento de indicadores IBE en las intervenciones de este tipo.

Palabras clave: intervenciones virtuales, intervenciones presenciales, envejecimiento activo, intervenciones basadas empíricamente.

Acknowledgements: C. Díaz-Prieto received funds through a PhD Fellowship (FPU-MECD REF. 12/04517) for the four-year period 2013-2017.

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Introduction

Recent studies have focused on improving the quality of life, the life satisfaction and the well-being of elderly people, at the same time as emphasizing the importance of optimizing physical, psychological and social components to achieve an active and healthy aging (Brown, Thompson, Zack, Arnold, & Barile, 2015). Such efforts are due to several factors, which include the increasing aging of the population; numerous scientific, social and medical advances; and the success of recent active-aging policies. Active aging's ultimate goal is quality of life, understood as the result of complex relationships between personal characteristics, objective living conditions in different areas, the individual's satisfaction with those conditions, and the evaluation made of these relationships, which is mediated by his or her own cognitive processes and values. Accomplishing healthy aging at a more personal level therefore means achieving well-being and quality of life in dimensions such as emotional and physical factors, mechanisms for self-control, self-regulation and self-image (hereafter SC-SR-SI), and cognitive, socio-communicative and functional aspects— all of this based on the uniqueness and heterogeneity of the elderly adult, not to mention the influencing effects that the environment and each individual's internal mechanisms

of subjective perception exert on these dimensions.

Traditionally, programmes and face-to-face interventions have been implemented for the improvement and optimization of these dimensions (Garnefski et al., 2013; Purath, Keller, McPherson, & Ainsworth, 2013). Recently, virtual tools have begun to be used (Morris et al., 2014; Siriaraya, Siang, & Bobrowicz, 2014). Owing to the recent development of these, there are few studies that use them with a older population. Their use has principally been reactive and medical, and also focused on dysfunctional aspects.

Although some studies extol the comparable efficacy of virtual and face-to-face interventions (Lappalainen et al., 2014), the majority of them do so for other age groups and in other fields. At the same time, others have identified a number of limitations in the design and implementation of virtual interventions that could have an impact on their efficacy (Andersson & Titov, 2014; Axpe & Uralde, 2008). These relate to factors such as the recruitment of the sample, online evaluation and diagnosis, the role of the researcher during the course of the intervention, or simply the ineffectiveness of such interventions in certain areas. As a result, they conclude by proposing the use of face-to-face interventions or, where appropriate, a combination of both modalities. However, none of these stud-

ies pays attention to compliance with empirically based interventions (EBI) indicators, which guarantee the efficacy and efficiency of interventions and which could influence the results, an aspect that will very much be taken into consideration in this investigation.

The aim of this review is to identify relevant elements that ensure the efficacy and efficiency of empirically based interventions (EBI), contrasting virtual and face-to-face intervention on active aging variables based on these indicators. This can serve as a basis for the design of future interventions that overcome the limitations found in the studies carried out so far.

We hypothesize that: (i) there are no differences in the efficacy of interventions based on the modality of intervention; (ii) differential efficiency and efficacy depends on the maximum compliance with EBI indicators; and (iii) the efficacy of interventions must be modulated by other variables such as age.

Method

Search for studies and selection criteria

We carried out a *systematic search* for different articles on intervention using virtual or face-to-face modalities for elderly people carried out between August 2014 and January 2015 through different *da-*

tabases (Medline, Web of Knowledge, Psicodoc, Pubmed and ERIC) using the following *keywords* (and their translations into Spanish): *active aging; emotion; self-efficacy, self-control; physical functioning, coping, social network; communication; social competence; cognition, memory; basic and instrumental activities; older people*. We identified 38 studies (two of which used both modalities of intervention; each modality will be analysed as if it were from an independent study) that met the following *selection criteria*: (1) are studies with elderly people implemented with effective strategies; (2) are for the years 2004-2014; (3) focus on one or more of the following dimensions of quality of life: emotional-affective; physical; SC-SR-SI mechanisms; cognitive; socio-communicative and functional; and (4) provide the data necessary for the calculation of effect size according to Cohen's formula (*d*).

Variables

We used three types of variables:

1. *Quality of life dimensions*, namely: emotional-affective (depression, anxiety, life satisfaction, emotional intelligence, positive and negative emotions, state of mind, stress); physical (physical functioning, balance, stamina, mobility, strength); SC-SR-SI (self-efficacy, self-control, coping,

self-esteem); cognitive (memory, attention, cognitive and mental functioning); socio-communicative (social networks, social role, loneliness); and functional (basic and instrumental activities of daily life). In total, we took into consideration 178 specific variables addressed in the different studies that fit within one of these dimensions;

2. *Characteristics of the studies reviewed*, including: general characteristics of the studies and of the intervention (country, year, scientific field, specific focus, type, context of intervention, duration, type of evaluation tool); characteristics of participants (sample, gender, average age, disorder of the participants, educational and socio-economic level, inclusion criteria); and effect size of the studies; and
3. *EBI Controls*, namely: recording of sessions, type of recording, training of instructors, intervention protocol, modality of intervention contrast, generalization, follow-up, total indicators.

Procedure

After identifying the 38 studies that met the selection criteria, these were analysed according to a recording protocol codified through *Excel* matrices that included the previous variables, calculating effect sizes at the same time. Finally, we performed descriptive and multivariate analyses (GLM).

Data analysis

As a first step, we calculated the studies' effect sizes by applying Cohen's formula or, for cases in which there was no control group, a formula taking the form of subtracting the mean of the pre- from that of the post-, with everything divided by the standard deviation of the control group. Subsequently, we conducted descriptive and multivariate analysis through the general linear model (GLM), using the program SPSS 22.0, around five grouping variables: *effect size; modality of intervention; total of EBI indicators; classification by ages; and quality of life dimension.*

Results

Description of the studies included in the review

Characteristics of participants

Half of studies have a design involving two groups (control and experimental). Samples are usually quite small and there is a largely female participation. Table 1 shows a summary of the main characteristics of the samples participating in the studies.

Characteristics of the interventions and EBI controls

The duration of these ranges between 4 and 24 weeks, with a

Table 1
Groups, Sample, Participants per Group, Average Age, Age Range and Gender of the Participants in the Studies Included in the Review

Study	Groups	Sample	Participants per group			Age (M y SD)	Age range	Gender (%)	
			CG	EG1	EG2			EG3	Men
<i>Face-to-face</i>									
Afonso and Bueno (2010)	3	90	30	30	30	76 (6.67)	65-94	78.89	21.11
Avia, Martínez, Rey, Ruiz, and Carrasco (2012a)	1	19	—	19	—	85.7 (9.25)	57-100	74	26
Avia, Martínez, King, Ruiz, and Carrasco (2012b)	2	45	7	38	—	71 (5.15)	57-100	97.5	2.5
Brawley, Rejeski, Gaukster, and Ambrosius (2012)	3	288	93	97	98	67.07 (4.83)	60-79	67.03	32.97
Clark et al. (2012)	2	360	173	187	—	74.9 (7.7)	60-95	65.8	34.2
Contreras et al. (2006)	2	38	19	19	—	—	63-77	92.2	7.8
Garnefski et al. (2013)	2	82	41	41	—	48.37 (11.25)	—	91.5	8.5
Gritlin et al. (2006)	2	319	159	160	—	79 (5.9)	70 and above	81.8	18.2
Gratz and Gundersen (2006)	2	22	10	12	—	33.32 (9.98)	19-58	—	—
Heckman et al. (2010)	3	295	86	104	105	55.3	50-76	33	67
Hui, Chui, and Woo (2009)	2	111	54	57	—	68.55 (4.35)	60-75	97	3
Kimura et al. (2013)	2	94	37	57	—	74.3 (5.45)	65-90	80.65	19.35
Korte, Bohlmeijer, Cappeliez, Smit, and Westerhof (2012)	2	202	102	100	—	63 (6.5)	55-83	76.7	23.3
Logghe et al. (2009)	2	269	131	138	—	77.15 (4.65)	69-93	71.05	28.95
Logsdon et al. (2010)	2	142	46	96	—	73.75 (8.5)	—	49.3	50.7
Lu, Zheng, Young, Kagawa-Singer, and Loh (2012)	1	19	—	19	—	54 (11)	31-83	—	—
Nuevo and Montorio (2005)	2	41	24	17	—	65.6 (7.2)	53-81	84.56	15.44
Purath et al. (2013)	2	64	35	29	—	66.2 (5.2)	61-85	73.5	26.5
Resnick, Luisi, and Vogel (2008)	2	166	66	100	—	73 (8.2)	60 and above	80.72	19.28
Sung, Chang, and Lee (2010)	2	52	23	29	—	80.12 (7.55)	65-99	44.23	55.77
Vergara and González (2009)	2	37	13	24	—	70.25 (7.5)	57-85	—	—
Wang (2005)	2	48	23	25	—	75.6	65-93	39.59	60.41
Wang, Hsu, and Cheng (2005)	2	94	48	46	—	75.6	65-93	44.68	55.32
Wing, Schutte, and Byrne (2006)	3	175	55	58	62	40.3 (16.04)	18-79	64	36

Table 1
(Continuation)

Study	Groups	Sample	Participants per group					Age (M y SD)	Age range	Gender (%)	
			CG	EG1	EG2	EG3	Men			Women	
<i>Virtual</i>											
Bayen et al. (2013)	3	60	20	20	20	—	69.2 (6.4)	60-84	46.67	53.33	
Berman, Iris, Bode, and Drenenberg (2009)	2	78	37	41	—	—	65.9	55-91	87.18	12.82	
Cavanagh et al. (2006)	1	219	—	219	—	—	43.6 (11.7)	19-70	60	40	
Chao, Scherer, Wu, Lueke, and Montgomery (2013)	1	7	—	7	—	—	86 (5)	80-94	71.43	28.57	
Echemendy et al. (2011)	1	17	—	17	—	—	68.29 (5.72)	58-79	29.41	70.59	
Galante, Venturini, and Fiaccadori (2007)	2	11	4	7	—	—	76 (6.0)	—	—	—	
Kessler et al. (2009)	2	297	148	149	—	—	34.95 (1.6)	18-75	68	32	
Ouweneel, Le Blanc, and Schauffeli (2013)	2	311	225	86	—	—	46.4 (10.1)	—	44.75	55.25	
Proudfoot et al. (2004)	2	274	—	146	128	—	43.5 (14)	18-75	74	26	
Rosenberg et al. (2010)	1	19	—	19	—	—	78.7 (8.7)	63-94	—	—	
Slegers, van Boxtel, and Jolles (2008)	4	220	41	56	61	62	—	64-75	—	—	
Wright et al. (2005)	3	45	15	15	15	—	40.23 (9.83)	18-65	75.53	24.47	
<i>Face-to-face + Virtual</i>											
Fernández-Ballesteros, Caprara, Iniguez, and Garcia (2005)	3	107	31	44	32	—	70.65 (6.3)	—	78.5	20.56	
Sanford et al. (2006)	2	64	32	16	16	—	62.25 (14.6)	42-86	15.85	84.15	

Note. CG = control group; EG = experimental group; M = mean; SD = standard deviation.

Table 2

Compliance with EBI Controls by the Studies Included in the Review

Modality	N	Follow-up			Recording of sessions	Training of instructors	Protocol	Intervention modality contrast	Generalization
		1	2	3					
Virtual	14	5	3	1	9	8	12	6	2
Face-to-face	26	12	6	0	18	18	22	11	0

Note. N = Number of studies.

variable number and duration of sessions. All feature pre-post evaluation, with follow-up not being the norm. Among the assessment tools used, self-reporting, and to a lesser extent resolution of tasks, observation and interview predominate. The contexts of intervention are varied: educational services, the home, centres for elderly people, and health and social centres. Table 2 contains a summary of compliance with EBI controls.

Comparative analysis between variables (GLM)

Multivariate analysis performed using the general linear model shows significant *multivariate contrasts* for all grouping variables taken into consideration: *effect size* [$\lambda_{\text{Wilks}} = .072$; $F_{(78, 330)} = 5.957$; $p \leq .001$; $\eta^2 = .584$]; *modality of intervention* [$\lambda_{\text{Wilks}} = .112$; $F_{(26, 112)} = 34.048$; $p \leq .001$; $\eta^2 = .888$]; *total of EBI Indicators* [$\lambda_{\text{Wilks}} = .0001$; $F_{(125, 541.352)} = 37.931$; $p \leq .001$;

$\eta^2 = .894$]; *classification by age* [$\lambda_{\text{Wilks}} = .0001$; $F_{(81, 326.884)} = 53.43$; $p \leq .001$; $\eta^2 = .929$], *quality of life dimension* [$\lambda_{\text{Wilks}} = .071$; $F_{(130, 537.101)} = 2.939$; $p \leq .001$; $\eta^2 = .411$].

Based on the effect size

There is an inversely proportional relationship in relation to age: the younger the age, stronger the effect of interventions and vice versa. We found significant results according to the modality of intervention. The *post hoc contrasts* reveal differences upon contrasting the small effect sizes (face-to-face) with medium (virtual) in the variable referring to the modality of intervention ($p \leq .05$), a pattern repeated when comparing the post hoc contrasts between the medium and very large effect size (face to face) ($p \leq .04$). However, what seems to influence the efficacy and efficiency of differential interventions most of all is compliance with the maximum number of EBI indicators. Other

Table 3

Statistically Significant Results Taking Effect Size as a Grouping Variable

Variables	Small		Medium		Large		Very large		F	P	η^2
	M	σ	M	σ	M	σ	M	σ			
Age	69.99	10.71	66.15	13.8	56.51	20.2	56.09	16.96	7.62	.001	.15
Modality	1.35	0.48	1.63	0.49	1.71	0.48	1.22	0.43	4.87	.030	.10
Recording of sessions	1.59	0.49	1.47	0.51	1.31	0.48	1.17	0.38	4.43	.010	.10
Online recording of sessions	1.99	0.11	1.81	0.41	2.01	0.01	1.89	0.32	5.07	.002	.10
Training of instructors	1.51	0.51	1.53	0.51	1.11	0.32	1.11	0.32	5.50	.001	.11
Intervention Protocol	1.28	0.45	1.23	0.43	1.11	0.32	1.01	0.01	2.67	.050	.06
Modality contrast	1.54	0.50	1.53	0.51	1.20	0.42	1.06	0.24	6.48	.001	.13
Total EBI indicators	2.47	1.07	2.77	1.43	3.50	0.85	3.94	0.80	9.95	.001	.18

statistically significant results can be found in Table 3.

When we compared the *post hoc* contrasts between the significant variables obtained in tests for intersubject effects between the effect sizes, we found statistically significant differences in 15 of the 66 cases analysed (22.73%). For example, significant differences in the variables relating to the total number of EBI indicators were observed when the small effect sizes were contrasted against very large

($p \leq .001$) and medium against very large ($p \leq .01$).

Based on the modality of intervention

There are no significant differences in the effect of virtual and face-to-face interventions, nor in compliance with EBI. Other statistically significant results have been obtained and are available in Table 4.

Table 4

Statistically Significant Results Taking the Modality of Intervention as a Grouping Variable

Variables	Face-to-face		Virtual		F	p	η^2
	M	σ	M	σ			
Sample	126.46	96.45	67.57	81.85	14.26	.001	.09
Intervention context	3.04	1.84	4.19	2.36	10.47	.002	.07
Recording of sessions	1.41	0.40	1.60	0.49	5.32	.020	.04
Online recording of sessions	2.01	0.01	1.85	0.37	14.66	.001	.10
Written recording of sessions	1.57	0.50	1.81	0.40	9.45	.003	.07
Recording of sessions follow-up meetings	1.83	0.38	1.97	0.18	6.56	.010	.05
Other recording of sessions (phone, videos, external evaluators)	1.78	0.42	1.95	0.22	7.99	.010	.06
Generalization	2.01	0.01	1.95	0.22	4.36	.040	.03

Based on the total number of EBI indicators

The larger samples and those with a lower age are the ones that comply with a larger number of EBI indicators. We also found statistically significant results in relation to the effect size.

Upon comparing the *post hoc contrasts* between the significant variables obtained in tests for intersubject effects between the to-

tal of EBI indicators, statistically significant differences in 39 of the 130 analysed cases (30%) were observed. There is a general trend that is proven by the presence of statistically significant differences upon contrasting studies with compliance with 1 and 2 indicators with ones that meet 3 and especially 4 or more EBI criteria in most of the variables. Further information can be found in Table 5.

Table 5

Statistically Significant Results Taking as a Grouping Variable Total EBI Indicators

Variables	1 (n=16)		2 (n=56)		3 (n=55)		4 (n=33)		5 or more (n=18)		F	p	η^2
	M	Σ	M	σ	M	σ	M	σ	M	σ			
	Sample	64.86	21.29	52.71	62.15	154.16	99.41	51.31	76.66	207.07			
Number of groups	2.01	0.01	1.71	0.46	2.25	0.65	2.15	0.38	2.04	0.55	7.61	.001	.22
Age	67.28	2.32	73.77	8.86	69.21	11.16	39.51	14.76	52.47	4.58	29.52	.001	.53
Intervention context	5.01	1.03	3.73	2.73	3.14	2.18	2.92	0.28	3.01	0.33	2.44	.040	.08
Effect size	0.16	0.37	0.11	0.38	0.28	1.12	1.10	1.54	0.42	1.34	4.66	.001	.15

Table 6

Statistically Significant Results Taking as a Grouping Variable Classification by Ages

Variables	Under 65		65-70		70-75		Over 75		F	p	η^2
	M	σ	M	σ	M	σ	M	σ			
Modality	1.5	0.51	1.54	0.51	1.19	0.4	1.48	0.51	3.56	.020	.07
Dimension	2.4	2.25	2.69	1.81	2.86	1.73	4.07	1.63	6.08	.001	.12
Intervention context	2.57	0.5	4.46	1.36	2.14	1.82	4.91	2.51	21.37	.001	.32
Recording of sessions	1.01	0.001	1.46	0.51	1.69	0.47	1.74	0.45	25.35	.001	.36
Online recording of sessions	1.74	0.44	2.01	0.001	2.01	0.001	2.01	0.001	11.66	.001	.21
Written recording of sessions	1.43	0.5	1.62	0.5	1.69	0.47	1.88	0.33	6.74	.001	.13
Recording of sessions follow-up meetings	1.94	0.24	1.69	0.47	2.01	0.001	1.86	0.35	5.7	.001	.11
Other recording of sessions (phone, videos, external evaluators)	1.83	0.38	1.65	0.49	2.01	0.001	1.86	0.35	5.14	.002	.10
Intervention Protocol	1.17	0.38	1.04	0.2	1.11	0.32	1.48	0.51	9.29	.001	.17
Intervention modality contrast	1.29	0.49	1.65	0.49	1.58	0.5	1.36	0.49	4.33	.010	.09
Generalization	1.91	0.28	2.01	0.001	2.01	0.001	2.01	0.001	3.16	.030	.07
Monitoring	1.37	0.49	1.5	0.51	2.01	0.001	1.43	0.51	16.23	.001	.27
Total indicators	3.80	1.21	2.73	1.78	2.31	0.67	2.43	0.55	14.28	.001	.24
Disorder participants	2.14	0.65	2.15	1.01	2.61	0.64	1.67	0.48	12.29	.001	.22

Based on age

The results show a predominance of virtual interventions in people older than 70 years and offer significant data in relation to the quality of life dimension. Interventions related to the *socio-communicative* dimension dominate for those under 65; *physical* factors dominate for those between 65 and 75, and *functional* factors for over 75s.

The *post hoc* contrasts between the significant variables obtained in tests for intersubject effects reveal statistically significant differences in 45 of the 126 cases analysed (35.71%). It is worth highlighting those obtained when comparing the group of 65-70 year-olds and that of 70-75 year-olds

in variables relating to modality of intervention, with *virtual interventions* predominating in the second group ($p \leq .05$). It is also worth highlighting the differences found upon contrasting the group of over-75s (functional) with the rest of the age groups according to the quality of life dimension dealt with: Under 65 ($p \leq .002$) (*socio-communicative*); 65-70 ($p \leq .04$) (*physical*); and 70-75 ($p \leq .05$) (*physical*). We should also underline those found in terms of the total EBI indicators between groups of under-65s and the rest of the groups, with a lower compliance with indicators as age increases: 65-70 years ($p \leq .003$); 70-75 ($p \leq .001$) and over the age of 75 ($p \leq .001$). Other relevant results are available in Table 6.

Based on the quality of life dimension

The results suggest that with a higher age there is a predominance of interventions on *cognitive*, *functional* and *physical* dimensions. This result is reinforced upon analysing the *post hoc contrasts* where what stands out are significant differences found according to age for focuses related to SC-SR-SI (61.4 years) vs. the *cognitive* dimension (75.04 years) ($p \leq .02$); and the *emotional* dimension (59.95 years) vs. the *cognitive* ($p \leq .001$), *physical* (71.5 years) ($p \leq .03$) and *functional* (74.6 years) ($p \leq .04$) dimension. Other statistically significant results in relation to certain EBI indicators (recording of sessions, intervention protocol) can be obtained.

Finally, other *post hoc contrasts* show statistically significant differences in 25 of 210 cases analysed (11.9%), as for example in relation to some criteria of the empirically based interventions.

Discussion

Based on the stated objective, the fulfilment of the hypotheses can be seen. The results obtained confirm the non-existence of significant differences according to the modality of intervention, which had already also been found in other age groups and fields (Chen, Siau, & Nah, 2012; Wagner, Horn, & Maercker, 2014). This is because

the effect of interventions is mainly conditioned by compliance with EBI indicators and by other modulating variables such as the average age of participating samples. Other types of characteristics of groups such as the educational level of participants could also exert an impact, as in most of the face-to-face interventions reviewed a low-medium level of education predominated, with a medium-high level in the case of virtual interventions. There are also other factors in relation to groups that might have an influence, such as the socio-economic level, the level of autonomy and the presence or otherwise of disease/disorder.

With regards to the EBI indicators, we noted how from approximately four indicators the effect of the interventions is big to very big, with no differences existing between the two types of modality in terms of compliance with them. That is, the real effect of interventions measured by effect size (independent of the strategy used) is insufficient to assess the differential efficacy of interventions, and the rest of the EBI indicators are required. Therefore, if EBI indicators are a guarantee of rigour and of efficacy and efficiency of interventions, they must become factors to be carefully kept in mind during any intervention design (Faggiano et al., 2014).

On the other hand, as the average age of the participants increases, the effect of the interven-

tions is lower. This is probably due to the biological, psychological and social changes that occur in the normal aging process and that are associated with the deterioration of different capacities and functions.

As a result of this review, other results in addition to the confirmation of the hypotheses have been obtained.

It is possible to detect age differences associated with the quality of life dimension referred to in the studies. It is well known that nowadays old age is considered as another stage of development, and it is full of new requirements that need to be adapted to as they appear and that need to be met with the right solutions. Probably the first changes that the elderly have to face appear at the emotional and social level and affect the individual's capacities and mechanisms to manage them: retirement, loss of social ties, decrease in confidence in their own abilities, feelings of lack of social validity, and so forth. Subsequently, biological aging will lead to a decrease in physical, cognitive and functional capabilities (Mansilla, 2000). Thus, as age increases, interventions are more focused on these latter dimensions.

Contrary to what one might think, there is a predominance of virtual interventions for people older than 70 years, with especially significant differences found in people aged 65-70 (face-to-face) and 70-75 (virtual). This could be explained by the progressive loss of autonomy

that is associated with age and that negatively affects the elderly person's whole functioning (cognitive, physical and so forth). For this reason, virtual tools can become powerful instruments to overcome these difficulties by allowing an adaptation to all kinds of personal circumstances, overcoming barriers of space and time (Martínez-Pecino, Matos, & Silva, 2013).

In terms of the characteristics of the studies, a duration of interventions that varies between 4 and 24 weeks stands out, with a variable number and duration of sessions. Most of the interventions—whether face-to-face or virtual—are individual, and of a psychological or medical nature. We found important limitations in the studies that include the predominance of a design of only two groups, one control and the other experimental, pre-post usually without follow-up and samples that are usually quite small and predominantly female. The contexts of intervention are varied, with medical contexts predominating, thus confirming an approach based on dysfunctional aspects.

In short, although the results confirm that virtual interventions can be as effective as more traditional methodologies in face-to-face formats, paying attention to compliance with EBI indicators, it is necessary to encourage more studies that employ virtual technologies, as these may be a more efficient, cost-effective method (Lappalainen et al., 2014).

There is a series of constraints to this study that must be taken into consideration. The number of virtual studies is lower than face-to-face ones due to the interest of gerontological research in the use of these tools being recent. Moreover, for the interpretation of effect size Rosenthal's (1996) classification was used, which perhaps may have limited the results of the study in the sense that, with the establishment of greater number of categories, the results are more scattered. Finally, we must not forget that these results should be taken with caution given the difficulties of generalization. Future lines of research could focus on the design and implementation of new intervention programmes in any of the modalities that exceed the limitations found in this study, especially with regards to compliance with EBI indicators, given their role

in ensuring the efficacy of interventions. That said, and knowing the absence of differences in the efficacy of both modalities of intervention, there are multiple reasons that would justify the need to prioritize the design of virtual interventions for older people. We should not forget the influence of new technologies in today's societies and their important role in promoting the integration of the elderly into them, or the advantages that they offer to achieve a greater number of users in any space and at any time or the limited existing research on the subject. There is a field yet to be explored here.

Finally, we should note that the results derived from this research may have important implications at social, institutional and scientific levels.

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Received date: 05-02-2014

Review date: 04-08-2015

Accepted date: 25-10-2015

Estudio 3

Analysis of online gerontechnology resources for active ageing

Research on Ageing and Social Policy (in press)

Factor de impacto (FI)

Thomson Reuters (Web of Science) (Emerging Sources Citation Index)

Latindex. Índice de impacto: 33 características cumplidas

ICDS (7.0)

Indexada en: Base de Datos ISOC, DOAJ (Directory of Open Access Journals), Dulcinea, ERIH-PLUS, JournalTOCs, Latindex (Directorio and Catálogo), REDIB (Red Iberoamericana de Innovación y Conocimiento Científico), SHERPA/RoMEO, Social Services Abstracts (ProQuest), Summon (ProQuest).

Referencia:

Díaz-Prieto, C. & García-Sánchez, J. N. (in press). Analysis of online gerontechnology resources for active ageing. *Research on Ageing and Social Policy*.

Fecha de aceptación: 23/4/2017

Analysis of online gerontechnology resources for active ageing

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Abstract

Gerontechnology has emerged as a new area of interest in the field of ageing, due to the potential of the new technologies to contribute to the general well-being of older adults and thus promote active ageing. However, few studies have analysed the online resources available for this purpose. The aim of the present study was to identify and analyse the online resources available in some of the principal areas of interest in active ageing, determining their main characteristics and exploring accessibility, use and quality, with particular emphasis on resources aimed specifically at older adults. We identified and coded 557 websites that focused on 7 dimensions of active ageing. Our descriptive and multivariate analyses revealed a paucity of online resources specifically targeting older adults, especially in relation to psychosocial and emotional variables. We also found substantial limitations as regards the accessibility, use and quality of the resources identified. Greater institutional, social and scientific involvement is required to leverage the opportunities provided by the Internet and overcome these limitations, which may be partially responsible for the current generational digital divide.

Keywords: online resources; active ageing; digital divide; gerontechnology

Resumen

La gerontecnología se ha convertido en un nuevo campo de interés en envejecimiento, mostrando el potencial de estas nuevas herramientas para favorecer el bienestar integral del adulto mayor y con ello, el envejecimiento activo. Si bien, pocos estudios se han ocupado de analizar los recursos online disponibles para este fin. En este estudio se identifican y analizan los recursos existentes en la red en relación a algunas de las principales áreas de interés en envejecimiento activo, atendiendo a sus principales características, así como a aspectos de accesibilidad, uso

y calidad, con especial énfasis en aquellos recursos dirigidos específicamente a personas mayores. Se identificaron y codificaron 557 enlaces centrados en 7 dimensiones de envejecimiento activo. Los análisis descriptivos y multivariados llevados a cabo muestran una escasez de recursos online dirigidos específicamente a personas mayores, especialmente en relación a variables psicosociales y emocionales. Se han hallado importantes limitaciones de accesibilidad, uso y calidad de los recursos. Se necesita una mayor implicación institucional, social y científica para aprovechar al máximo las posibilidades que brinda internet, así como para superar las limitaciones halladas, las cuales podrían constituirse como algunas de las causas de la brecha digital de tipo generacional existente.

Palabras clave: recursos online; envejecimiento activo; brecha digital; gerontecnología

Acknowledgements

This work was supported by a grant to finance the predoctoral recruitment of research personnel received funds through a PhD Fellowship (FPU-MECD REF. 12/04517) for the four-year period 2013-2017 (Author1), from the Spanish Government.

The authors also received funds from the company BIOGES Starters, S.A., which is associated with the Universidad de León.

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Introduction

Recent years have witnessed the emergence of a new area of interest in the field of ageing: gerontechnology. This concept refers to the use of technology as a means to ensure good physical and mental health, full social participation and independence throughout life (Wu, Damnée, Kerhervé, Ware & Rigaud, 2015). This in turn implies that older adults must be equipped to live in a dynamic technological society.

The new technologies, including online resources, possess unquestionable potential to promote the physical, psychological and social well-being of older adults (Jones, Ashurst, Atkey & Duffy, 2015; Vancea & Boso, 2015). However, two questions remain unclear. One is whether older adults are equipped to live in this technological society, since they may lack the necessary training, interest, attitude or other personal variable, and the other is whether these technologies, and especially the online resources available today, are adapted to the interests, needs, abilities and demands of older adults, and even more importantly, whether they offer guarantees of quality, efficacy and effectiveness (Hill, Betts & Gardner, 2015). The present study focused on these latter aspects.

To date, few studies have conducted a systematic search and analysis of the availability, characteristics, accessibility and usability of websites and online resources related to a particular subject. Most of these have focused on the field of health (Bari, Kemeny & Bari, 2014; Campbell & Wallace, 2015; Spencer & Sheridan, 2014), while a small minority have analysed educational websites (Clink, 2015; Marques et al., 2015) or sites related to ideology, politics, business or trade (Grana & Ling 2015).

Although conducted in fields other than the subject of our research, some of these studies have focused exclusively on the quality of the information published on such websites and have reported substantial problems as regards the accuracy, quality and reliability of the information, as well as problems of legibility due to the excessive use of technical elements (Brigo, Otte, Igwe, Tezzon & Nardone, 2015; Carlsson, Bergman, Karlsson & Mattsson, 2015; Gray et al., 2015). Based on different

international standards (e.g. the World Wide Web Consortium, W3C) or user opinions, other studies have assessed compliance with criteria aimed at ensuring website accessibility and usability, and have reported substantial limitations in this regard according to indicators such as contrast, content presentation, font size, accessibility on different devices, complexity of home pages, difficulties in navigation and lack of accessibility support (Mangalore et al., 2015).

However, none of the studies reviewed has focused solely or partially on the field of active ageing and its main areas of interest, such as the emotional, psychosocial (coping, self-efficacy, social skills), cognitive and other variables that contribute to successful active ageing, well-being and quality of life. Furthermore, although accessibility, usability and information quality have all been studied, no detailed analyses have been conducted of other website characteristics such as who designs these digital resources or what strategies are employed, aspects which could influence the former and might shed light on some of the possible causes of the present generational digital divide. This could have important theoretical and applied implications when developing and adapting online resources for older adults as regards enhancing their use and effectiveness.

Given this background and the absence of studies in this area, the aim of the present study was to identify and analyse the online resources available in some of the principal areas of interest in active ageing, determining their main characteristics and exploring accessibility, use and quality, with particular emphasis on resources aimed specifically at older adults.

We hypothesised that: (i) in contrast to other age groups, few resources will be specifically aimed at older people, since it is only recently that there has been a surge in the use of these tools by older adults, who now constitute the age group with the fastest rate of growth in Internet use (Kania-Lundholm & Torres, 2015); (ii) the resources will be aimed at providing information rather than for intervention purposes, since previous studies have reported that older adults mainly use these tools to obtain information (González, Fanjul & Cabezuelo, 2015); (iii) the resources will mainly have been developed by self-help organisations, given that it is only

recently that efforts have been made to implement training policies; (iii) the resources will have been developed using an integrated approach within an eclectic sphere of activity; (iv) online resources targeting older adults will be primarily aimed at optimising cognitive variables, based on the deficit approach that has prevailed for years; and (v) the predominant mode of resource access will be public and will not require advanced digital skills, but will present substantial limitations of accessibility, usability and quality that explain the current digital divide.

Method

Corpus of websites

We conducted a search for websites using the search engine *Google* and the key words *emotions, self-efficacy, coping, social skills, communication skills, cognition, physical health* and *mental health* combined with *older adults*, to refine the search, and their respective translations into Spanish, obtaining a corpus of 557 websites. The following inclusion criteria were applied: (i) websites related to psychosocial, emotional, cognitive and other variables of ageing; (ii) websites falling within the following types of tool: blogs, educational tools, office automation tools, multimedia resources, social networks and functional websites; (iii) websites aimed at different age groups but which could be adapted for older adults; and (iv) websites that could be consulted independently by older adults themselves or by third parties who work with this group.

Indicators analysed

We used three types of indicator (Table 1):

Table 1

Indicators analysed in the present study

Type of indicator	Specific indicators
Population	<i>Developer</i> (governmental organisations, self-help organisations, non-governmental organisations, researchers, not specified)
	<i>Target audience</i> (older adults, adults, people with a specific disease or disorder and other groups)
Resource characteristics	<i>Type of tool</i> (blog, educational tool (e.g. Webquest, Moodle, Wikis), office automation, multimedia resource, social network, functional website)
	<i>Purpose</i> (intervention, information, both)
	<i>Autonomous Region</i>
	<i>Country</i>
	<i>Focus</i> (cognition, emotions, self-efficacy, communication skills, social skills, coping, other variables related to active ageing)
	<i>Theoretical approach</i> (holistic, cognitive-behavioural, behavioural, educational, non-professional)
	<i>Activity</i> (education, psychology, leisure and eclectic)
<i>Strategies</i> (cognitive-behavioural techniques, coping techniques, self-control/self-regulation, communicative and educational)	

Table 1

Indicators analysed in the present study (Continuation)

Type of indicator	Specific indicators
Accessibility, use and quality indicators	<i>Accessibility</i>
	<i>Accessibility and use support</i> (screen support, audiovisual support, both screen and audiovisual support, no support)
	<i>Access mode</i> (public, restricted, partial, paid)
	<i>Audiovisual environment</i>
	<i>Digital competence</i>
	<i>External resources and websites</i>
	<i>Links with other services</i> (messaging, social bookmarking, content management systems, social networking)
	<i>Interactivity with the user and with other users</i>
	<i>Functional assessment</i>
	<i>Limitations</i> (in relation to virtual application, accessibility, verification of efficacy)
<i>Activity log</i>	

Statistical analysis

Once the websites had been identified and encoded, we conducted descriptive and multivariate analyses using the software program SPSS 22.0 and using target audience as the grouping variable.

Procedure

We conducted a search for websites after deleting the cache and browsing history to avoid biased results. Once the websites had been identified, they were encoded in *Excel* according to the indicators listed above. To ensure objective encoding, the procedure was conducted several times to ensure intra-coder consensus, and

objective indicators were verified by contrasting various sources or routes and ensuring the existence of ample objective data and evidence. We confirmed that all the websites were active prior to conducting descriptive and multivariate analyses (GLM) using SPSS 22.0.

Results

Description of the websites included in the study

In total, we identified 557 websites that addressed the psychosocial, emotional and active ageing variables described above. Of these, 105 exclusively targeted older adults, accounting for 18.85% of the total, 65 were aimed at adults (11.67%) and 52 at people with a specific disease or disorder (9.33%). The remaining 335 websites (60.14%) targeted other age groups.

We obtained statistically significant results for 55 of the 64 target audience variables analysed, accounting for 85.94% of the total. The *activity* indicator yielded the highest values [$X^2 = 380,103$; $p \leq .001$]. Websites and resources for older adults predominantly fell within the fields of psychology [$f = 41$; $p = 7.3$] and entertainment and leisure [$f = 36$; $p = 6.5$], compared with those for other age groups, in which educational websites predominated [$f = 277$; $p = 49.7$], as was also the case with websites for people with a specific disorder [$f = 45$; $p = 8.1$]. Resources targeting adults were also mainly psychological [$f = 38$; $p = 6.8$].

Other statistically significant results of interest in relation to the target audience were those obtained for the *developer* indicator [$X^2 = 131,932$; $p \leq .001$]. Resources for older adults were predominantly designed by non-governmental organisations [$f = 30$; $p = 5.4$] and self-help organisations [$f = 28$; $p = 5$], as was also the case with adults. However, the most common resources for other age groups were government websites [$f = 140$; $p = 25.1$], as was also the case with websites for people with a specific disorder [$f = 30$; $p = 5.4$].

As regards *type of tool* [$X^2 = 166,833; p \leq .001$], multimedia resources were especially common for older adults [$f = 44; p = 7.9$], followed by educational tools [$f = 23; p = 4.2$] and functional websites [$f = 21; p = 3.8$]. Similarly, the most common resources aimed at adults were functional websites [$f = 26; p = 4.7$] and multimedia resources [$f = 22; p = 3.9$], and these latter were also the most common type of tool for other age groups [$f = 208; p = 37.3$] and for people with a specific disorder [$f = 28; p = 5.01$].

The most common *theoretical approaches* adopted when developing resources for older adults were holistic [$X^2 = 260,931; p \leq .001; f = 35; p = 7.9$] and cognitive-behavioural [$f = 27; p = 4.9$]. For other age groups [$f = 182; p = 32.7$] and people with a specific disorder [$f = 32; p = 5.7$] a holistic approach again predominated, while in the case of adults, a cognitive-behavioural approach was more common [$f = 46; p = 8.3$].

With regard to *focus*, most of the websites aimed at older adults focused on cognitive variables [$f = 70; p = 12.6; X^2 = 76,774; p \leq .001$] and other variables related to active ageing [$f = 22; p = 4; X^2 = 34,835; p \leq .001$], but rarely focused on optimising psychosocial and emotional variables. For other age groups, the main focus of websites was more varied and included cognitive variables [$f = 93; p = 16.7$], emotional skills [$f = 111; p = 19.9; X^2 = 59.95; p \leq .001$], communicative skills [$f = 97; p = 17.4; X^2 = 35,041; p \leq .001$] and social skills [$f = 63; p = 11.3; X^2 = 13,341; p \leq .01$]. Resources aimed at adults mainly focused on emotional variables [$f = 44; p = 7.9$] and coping [$f = 18; p = 3.2$], whereas resources for people with a specific disorder primarily focused on emotional skills [$f = 18; p = 3.2$].

As regards *accessibility* [$X^2 = 79,038; p \leq .001$], most websites aimed at older adults presented medium accessibility [$f = 65; p = 11.7$] in terms of fulfilling at least three of the following conditions: no password required, accessibility and use support provided, content presentation adapted to legibility indicators (size, contrast, layout), and free. Most did not provide *accessibility and use support* [$f = 64; p = 11.7; X^2 =$

137,704; $p \leq .001$]. However, in the majority of cases the resource *access mode* [$X^2 = 53,054$; $p \leq .001$] was public, i.e. free, and did not require a password [$f = 90$; $p = 16.1$]. For the other age groups, accessibility was high [$f = 196$; $p = 35.2$] and despite a continuing absence of accessibility support [$f = 139$; $p = 25.01$], a high number of resources offered audiovisual and screen support [$f = 123$; $p = 22.1$], or at least one of them, and the access mode was public [$f = 333$; $p = 59.8$]. Similarly, accessibility was also high in the case of people with a specific disorder [$f = 35$; $p = 6.3$]. In addition, audiovisual support predominated over screen support [$f = 22$; $p = 3.9$] and the access mode was public [$f = 49$; $p = 8.8$].

Lastly, a mere 25 of the 557 websites (i.e. 4.49% of the total) presented functional assessment, raising doubts about the quality of the content.

Comparative analysis between variables (GLM)

Multivariate analyses using the general linear model revealed significant multivariate contrasts for all the grouping variables considered: (i) *Target audience* [λ Wilks = .280; $F_{(168, 2004)} = 4.480$; $p \leq .001$; $\eta^2 = .272$]; (ii) *Purpose* [λ Wilks = .003; $F_{(84, 1004)} = 192,145$; $p \leq .001$; $\eta^2 = .941$]; (iii) *Activity* [λ Wilks = .465; $F_{(123, 1492)} = 3,536$; $p \leq .001$; $\eta^2 = .225$]; (iv) *Target audience-Purpose interaction* [λ Wilks = .279; $F_{(294, 3483)} = 2,400$; $p \leq .001$; $\eta^2 = .167$]; and (v) *Target audience-Activity interaction* [λ Wilks = .159; $F_{(451, 5334)} = 2,230$; $p \leq .001$; $\eta^2 = .154$].

According to target audience

Websites targeting older adults and adults were mainly developed by non-governmental organisations. Post hoc comparisons revealed differences for this variable when comparing older adults with other age groups (governmental organisations) ($p \leq .002$) and people with a specific disorder (self-help organisations) ($p \leq .001$).

No differences were detected for the theoretical approach on which websites were based, with a cognitive-behavioural approach predominating in all cases.

In relation to the purpose [$F = 5,916; p \leq .001; \eta^2 = .042$], resources aimed at older adults, adults and people with a specific disorder were mainly informative, whereas intervention was the purpose with other age groups. This was confirmed by the post hoc results obtained when comparing older adults with other age groups ($p \leq .001$).

Websites targeting older adults mainly focused on cognitive aspects and were associated with the leisure or entertainment sphere of activity. Post hoc comparisons revealed statistically significant differences in relation to this indicator when comparing older adults with the other groups: adults (psychology) ($p \leq .002$), people with a specific disorder ($p \leq .001$) and other groups ($p \leq .001$) (education).

Multimedia resources predominated for all groups except that of older adults, for whom functional websites were most common, and post hoc comparisons revealed this finding to be statistically significant when comparing this group with each of the others ($p \leq .001$).

Websites for older adults presented medium *accessibility*. The post hoc results indicated statistically significant differences when comparing older adults with other age groups ($p \leq .001$), for whom accessibility was high, as it was for people with a specific disorder ($p \leq .001$). However, independently of the target audience, most online resources did not offer accessibility and use support. Furthermore, whereas websites aimed at the other groups at least promoted interactivity with users, this was not the case with websites targeting older adults.

The remaining statistically significant results are given in Table 2.

Table 2

Statistically significant results when using target audience as the grouping variable

Indicators	Older adults		Adults		Specific disease or disorder		Other groups		F	p	η^2
	M	σ	M	σ	M	σ	M	σ			
Developer	2.529	1.105	2.769	1.072	1.712	1.035	2.033	1.13	7.599	.001	.053
Autonomous Region	4.654	1.782	5.446	1.723	4.558	1.719	4.654	2.084	3.632	.006	.026
Country	1.647	.8	1.954	.856	1.423	.75	1.699	.926	4.662	.001	.033
Purpose	1.784	0.91	2.031	.9677	1.500	.8745	1.140	.4906	5.916	.001	.042
Accessibility	1.581	.537	1.831	.518	1.327	.474	1.421	.506	7.934	.001	.055
Accessibility and use support	2.528	1.202	3.4	1.129	2.788	1.143	3.006	1.099	9.218	.001	.064
Type of tool	2.131	1.091	2.754	1.263	2.635	1.189	2.869	1.095	5.783	.001	.041
External resources and websites	1.816	.37	1.662	.477	1.865	.3446	1.824	.3815	5.094	.001	.036
Links with messaging services	1.886	.212	1.692	.465	1.981	.1387	1.949	.219	9.531	.001	.066
Links with bookmarking	1.809	.345	1.662	.477	1.942	.235	1.937	.243	8.504	.001	.059
Links with content management system	1.809	.345	1.677	.471	1.962	.194	1.952	.214	9.464	.001	.065
Links with social networking	1.732	.398	1.538	.502	1.923	.269	1.916	.277	8.893	.001	.061
Interactivity with the user	1.538	.468	1.323	.4713	1.288	.458	1.287	.453	4.518	.001	.032
Interactivity with other users	1.733	.422	1.646	.482	1.827	.382	1.916	.277	4.465	.001	.032
Theoretical approach	2.174	1.347	2.200	.852	1.981	1.365	2.191	1.406	2.373	.051	.017

Table 2

Statistically significant results when using target audience as the grouping variable (Continuation)

Indicators	Older adults		Adults		Specific disease or disorder		Other groups		<i>F</i>	<i>p</i>	η^2
	<i>M</i>	σ	<i>M</i>	σ	<i>M</i>	σ	<i>M</i>	σ			
Focus-cognition	1.228	.354	1.831	.378	1.75	.437	1.722	.449	14.754	.001	.098
Focus-cognition	1.228	.354	1.831	.378	1.75	.437	1.722	.449	14.754	.001	.098
Focus-communication skills	1.954	.215	1.892	.312	1.673	.474	1.71	.454	4.873	.001	.035
Focus-social skills	1.953	.149	1.800	.403	1.712	.458	1.812	.391	6.447	.001	.045
Focus-emotions	1.918	.271	1.323	.471	1.654	.480	1.669	.471	15.462	.001	.102
Activity	2.527	.765	2.215	.893	1.288	.8004	1.367	.829	29.762	.001	.180
Limitations in relation to virtual application	1.564	.405	1.692	.465	1.654	.48	1.761	.427	5.649	.001	.040
Limitations in relation to accessibility	1.472	.435	1.231	.425	1.673	.4737	1.585	.4934	3.616	.022	.030

According to purpose

When considering *purpose* as the grouping variable, we found statistically significant results for website characteristics and for accessibility, use and quality. These results are shown in Table 3. An analysis of the post hoc comparisons between the significant variables obtained in the tests for between-subject effects in the different types of purpose revealed statistically significant differences in 40 of the 66 cases analysed (60.61%).

Table 3

Statistically significant results when using purpose as the grouping variable

Indicators	Information		Intervention		Both		F	p	η^2
	M	σ	M	σ	M	σ			
External resources and websites	1.409	.5032	1.875	.3308	1.521	.502	26.246	.001	.088
Links with messaging services	1.5	.512	1.950	.218	1.745	.438	14.152	.001	.050
Links with bookmarking	1.500	.512	1.912	.284	1.734	.444	9.043	.001	.032
Links with content management system	1.500	.512	1.921	.271	1.766	.426	9.299	.001	.033
Links with social networking	1.364	.492	1.884	.32	1.617	.489	12.868	.001	.045
Interactivity with other users	1.318	.477	1.907	.291	1.574	.497	22.798	.001	.077
Theoretical approach	2.727	1.549	2.086	1.283	2.66	1.418	8.967	.001	.032
Focus-cognition	1.909	.294	1.615	.487	1.84	.368	15.013	.001	.052
Focus-social skills	1.864	.351	1.85	.357	1.681	.469	9.082	.001	.032
Focus-emotions	1.500	.512	1.726	.447	1.447	.499	6.105	.002	.022
Audiovisual environment	1.682	.779	1.413	.746	1.957	.891	4.324	.014	.016
Limitations in relation to virtual application	1.773	.43	1.79	.408	1.489	.503	10.319	.001	.037
Strategies-Cognitive-behavioural	1.841	.362	1.466	.468	1.591	.481	11.17	.001	.039
Strategies- Self-control/self-regulation	1.773	.429	1.859	.348	1.553	.499	5.076	.007	.018
Strategies- Coping	1.864	.345	1.895	.308	1.681	.467	7.136	.002	.03
Strategies- Communicative	1.478	.323	1.794	.394	1.522	.411	26.263	.003	.08
Strategies- Educational	1.924	.267	1.666	.465	1.734	.423	5.482	.019	.02

According to activity

In addition to the results reported above, some of the other most important findings concerned the target audience [$F = 13,817$; $p \leq .001$; $\eta^2 = .071$]. Thus, eclectic, educational and psychological resources were primarily aimed at other age groups, whereas those in the field of leisure and entertainment were aimed at older adults.

The psychological, leisure and eclectic websites were developed by non-governmental organisations, in contrast to educational ones which were developed by self-help organisations.

Eclectic and psychological resources were mainly informational, whereas the purpose of educational and leisure ones was intervention.

As regards accessibility, quality and use, we found that online resource accessibility was medium in all cases, with the exception of educational resources, which presented high accessibility, thus indicating that there were no accessibility limitations. Another aspect of note concerned accessibility support [$F = 21,443$; $p \leq .001$; $\eta^2 = .106$]. A combination of screen and audiovisual support predominated in psychological, educational and eclectic websites, whereas the majority of resources that most commonly targeted older adults, leisure and entertainment websites, did not provide accessibility support.

The remaining statistically significant results are given in Table 4.

Table 4

Statistically significant results when using activity as the grouping variable

Indicators	Eclectic		Education		Leisure		Psychology		F	p	η^2
	M	Σ	M	Σ	M	σ	M	σ			
Developer	2.955	1.238	1.815	1.063	2.614	.9876	2.859	1.037	13.207	.001	.069
Target audience	2.568	1.591	3.156	.566	2.386	1.245	3.165	1.7651	13.817	.001	.071
Autonomous Region	4.864	1.9718	4.291	2.0001	6.455	1.1132	5.212	1.6554	12.400	.001	.065
Country	1.795	.9042	1.488	.8254	2.568	.7701	1.788	.8032	15.721	.001	.081
Purpose	1.818	.8963	1.221	.6156	1.239	.6250	1.906	.9590	5.244	.001	.028
Accessibility	1.818	.6567	1.335	.4790	1.909	.4190	1.694	.4885	9.357	.001	.050
Accessibility and use support	2.886	1.4502	2.871	1.0975	3.682	.8650	3.001	1.3801	3.975	.008	.022
Type of tool	2.864	2.0413	2.801	1.0976	3.011	1.0774	2.341	.9704	6.473	.001	.035
External resources and websites	1.432	.5011	1.821	.3843	1.920	.2721	1.765	.4267	8.738	.001	.046
Links with messaging services	1.841	.3700	1.953	.2121	1.955	.2095	1.647	.4807	4.834	.002	.026
Links with bookmarking	1.773	.4239	1.941	.2356	1.841	.3679	1.635	.4842	4.103	.007	.022
Links with content management system	1.795	.4080	1.953	.2121	1.875	.3326	1.624	.4874	4.931	.002	.027
Links with social networking	1.591	.4974	1.924	.2661	1.795	.4057	1.541	.5013	9.307	.001	.049
Interactivity with the user	1.386	.4925	1.324	.4685	1.205	.4057	1.376	.4874	3.314	.020	.018
Interactivity with other users	1.636	.4866	1.903	.2965	1.864	.3451	1.588	.4951	6.309	.001	.034
Theoretical approach	2.364	1.2956	2.024	1.4077	2.955	1.1029	2.094	.9835	7.954	.001	.042
Focus-cognition	1.727	.4505	1.821	.3843	1.193	.3971	1.494	.5029	5.800	.001	.031
Focus-social skills	1.750	.4380	1.785	.4112	1.932	.2535	1.894	.3095	3.777	.011	.020
Focus-emotions	1.636	.4866	1.635	.4821	1.966	.1825	1.518	.5027	3.056	.028	.017

Table 4

Statistically significant results when using activity as the grouping variable (Continuation)

Indicators	Eclectic		Education		Leisure		Psychology		F	p	η^2
	M	Σ	M	Σ	M	σ	M	σ			
Audiovisual environment	1.523	.7310	1.491	.8037	1.273	.5618	1.859	.9149	5.056	.002	.027
Advertising	1.636	.4866	1.879	.3261	1.727	.4479	1.671	.4728	4.840	.002	.026
Limitations in relation to virtual application	1.682	.4712	1.718	.4508	1.966	.1825	1.612	.4902	6.937	.001	.037
Limitations in relation to accessibility	1.318	.4712	1.668	.4718	1.136	.3451	1.318	.4683	7.532	.001	.040
Strategies-Cognitive-behavioural	1.613	.4903	1.554	.4614	1.678	.3296	1.698	.4549	6.297	.003	.033
Strategies- Self-control/self-regulation	1.523	.5053	1.832	.3741	1.955	.2095	1.682	.4683	3.810	.010	.021
Strategies- Coping	1.773	.423	1.847	.3605	2.001	.0001	1.795	.3751	3.585	.017	.019
Strategies- Communicative	1.531	.389	1.613	.455	1.928	.245	1.694	.428	6.463	.001	.034
Strategies- Educational	1.783	0,398	1.791	0,389	1.906	0,247	1.763	0,403	4.761	0,015	.031

According to target audience-purpose interaction

We found statistically significant results in relation to multiple indicators. Some of the most relevant results are shown in Figure 1. Thus, we found that the quality of the audiovisual environment on all websites aimed at older adults was medium, regardless of their purpose, whereas it was high on websites aimed at all other age groups [$F = 2,946; p \leq .005; \eta^2 = .037$]. We also found statistically significant results in relation to certain strategies and to links between the websites and different services.

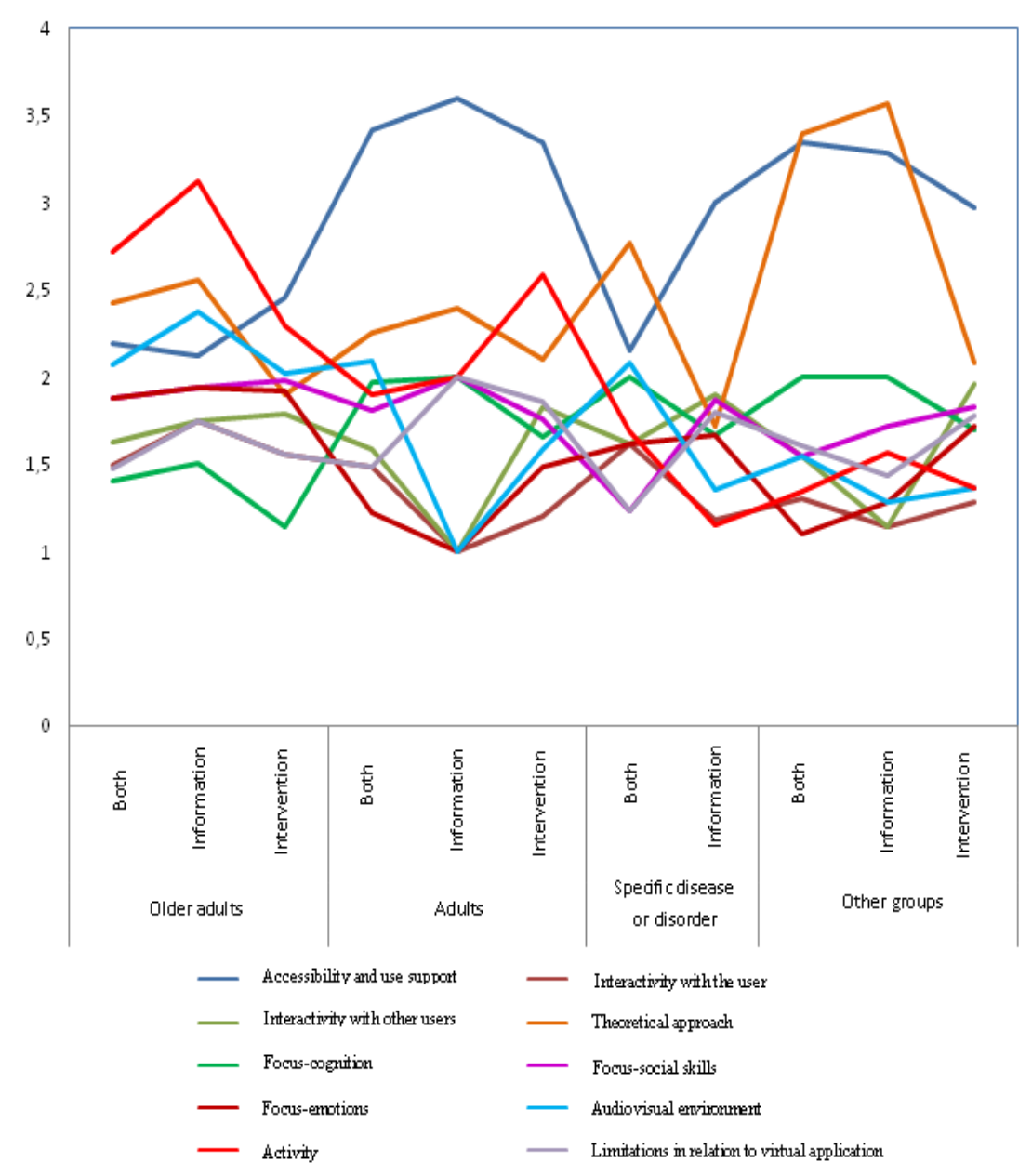


Figure 1. Statistically significant results according to target audience-purpose interaction

According to target audience-activity interaction

We obtained statistically significant results for 28 of the 65 indicators analysed, accounting for 43.08%. Some of the most relevant results concerned *accessibility* [$F = 2,243; p \leq .01; \eta^2 = .44$]. Thus, educational or eclectic websites aimed at people with specific disorders and other age groups presented high accessibility, whereas this was medium in all other cases. Other statistically significant and noteworthy results are given in Figure 2.

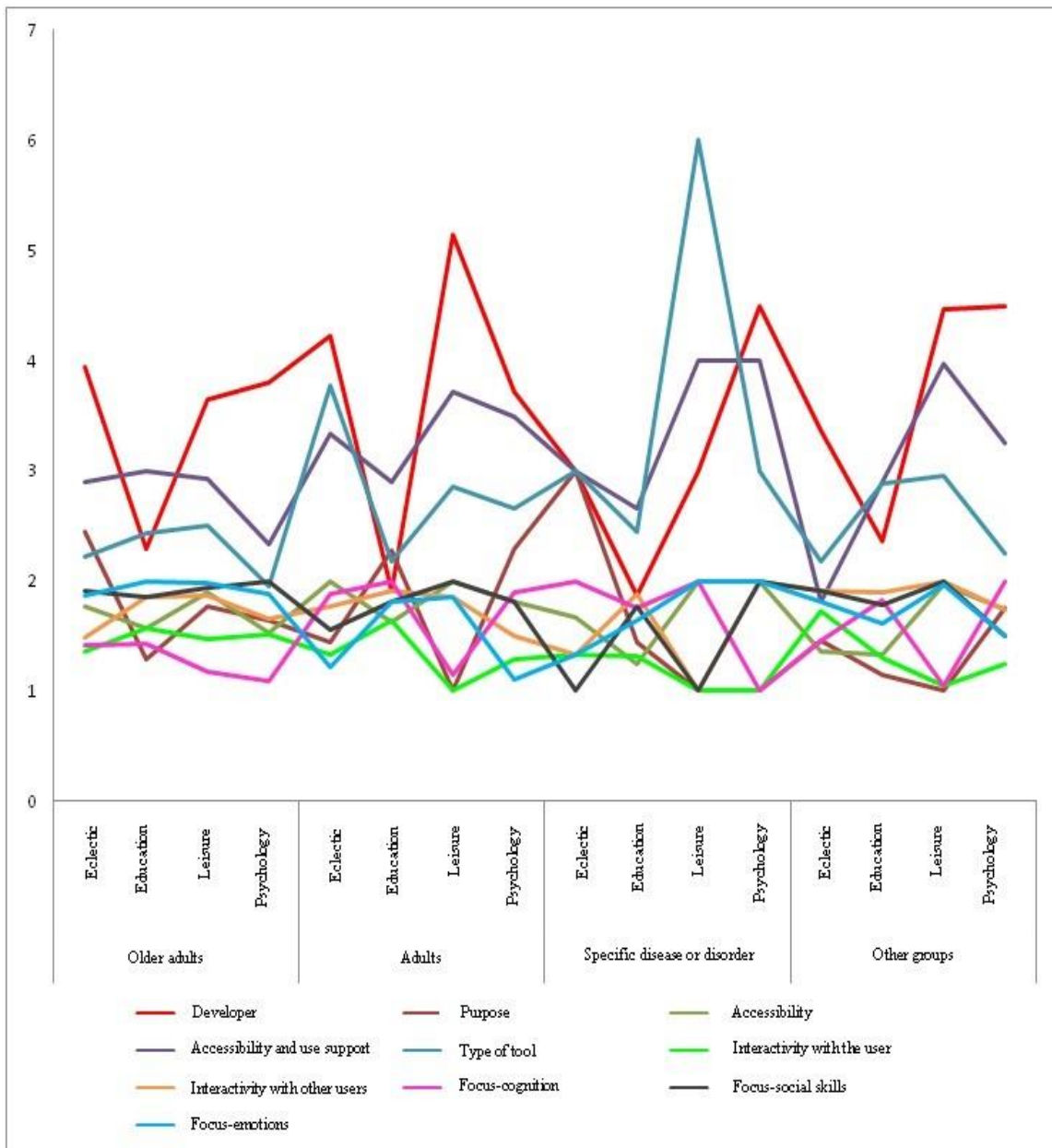


Figure 2. Statistically significant according to target audience-activity interaction

Discussion

We achieved the study aim and partially confirmed our initial hypotheses. First, in contrast to websites targeting other age groups, we found a paucity of websites and online resources specifically targeting older adults that were aimed at optimising psychosocial, emotional or any other variables related to active ageing besides cognitive variables. This may be because gerontological research has traditionally

focused on deficits, mainly those associated with cognitive processes, and it is only recently that psychosocial and emotional variables—which play an important role in healthy ageing— have received research attention (Strough, Lockenhoff & Hess, 2015).

Significant effort has been invested in digital literacy programmes in recent years, in an attempt to bridge the digital divide that affects older adults (Abbot, 2014). Similarly, the possible causes of this divide have been studied, emphasising both personal variables and technical factors associated with the tools themselves. However, such studies may have overlooked the principal reason, namely that in light of our results, there does not appear to be a wide range of online resources aimed at this age group and adapted to their needs, interests and capacities (Yang & Chen, 2015). This presents a barrier which can only be removed through involvement at governmental, scientific and social levels. There may well be room for improvement on this score, bearing in mind that the available online resources aimed at older adults have principally been developed by non-governmental and self-help organisations. This may be due to social and institutional stereotypes whereby ageing is associated with fragility, loneliness, dependency, poor learning capacity and digital illiteracy (Twigg & Martin, 2015), thus hindering progress in this field.

As expected, the primary purpose of the resources was to provide information, despite reports in various studies on the benefits endowed by use of this medium as regards optimisation of active ageing variables (Titov et al., 2015). In a recent study, Vroman, Arthanat and Lysack (2015) argued that older adults mainly use the Internet for three reasons: (i) social interaction; (ii) information seeking; and (iii) transactional or routine activities (e.g. making reservations or reading the news online). The latter two are particularly linked to the informative nature of the websites identified that targeted older adults. However, it would be important to determine whether it is the principally informative purpose of these websites that limits the options for older adults or if, on the contrary, these genuinely reflect the needs and interests of this age group.

In contrast to our hypotheses, most websites adopted a cognitive-behavioural approach, and in the case of older adults, the sphere of activity was mainly leisure and entertainment. This latter finding probably explains certain limitations in the quality of the resources identified in this study, such as their lack of functional assessment, which calls into question their efficacy and efficiency, as well as the rigour and accuracy of the information they contain (Brigo et al., 2015).

In terms of accessibility and usability, we detected substantial limitations. Websites targeting older adults presented medium accessibility, whereas this was high on websites aimed at other age groups. The predominant mode of access was public; however, most websites lacked accessibility and use support. This finding indicates the need to promote the application of criteria that facilitate access and use of the Internet by older adults. These could include simplifying screen design and display functions; ensuring content legibility and reliability by using clear and concise language, appropriate layout and content presentation, and professional, objective assessment to ensure the quality of the information; encouraging interactivity with the user and other users; and providing online information and feedback that is of assistance to older adults (Luna-García, Mendoza-González & Álvarez-Rodríguez, 2015).

In sum, our findings have clarified several questions. Few resources are specifically aimed at older adults, and even fewer at addressing psychosocial and emotional variables in old age, despite the importance of these for the physical and mental well-being and quality of life of older adults. Furthermore, there is little governmental or scientific involvement in this field, and older adults accessing these resources encounter substantial limitations regarding accessibility, use and quality. Combined with a lack of training and other psychosocial, emotional and personal variables, all the above probably gives rise to the current generational digital divide (Wu et al., 2015)

This study presents a number of limitations. First, it is difficult to generalise our findings, and more so considering that the Internet is a dynamic and evolving space. Second, the website coding protocol employed was developed following a rigorous

review of studies in this field, but may always be subject to modification and improvement. Lastly, this analysis should be complemented with data provided by older adults themselves, as the only means to obtain an accurate overview of the subject. Consequently, future research should be aimed at collecting such data, but also at promoting online intervention resources tailored to the needs and capabilities of older adults—which should include psychosocial and emotional variables—in order to overcome the limitations detected in this study and place greater emphasis on psychosocial and emotional aspects as important elements to achieve healthy ageing.

The results obtained in this study have important implications. They indicate the need for greater institutional, social and scientific involvement in this field, bearing in mind that more and more older adults will need to immerse themselves in this digital society to ensure an active and independent life, and it is the responsibility of all of us make this possible and guarantee the accuracy, quality, accessibility and effectiveness of the resources available (Luna-García, Mendoza-González & Álvarez-Rodríguez, 2015).

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Estudio 4

Patrones de uso de las herramientas de la web 2.0 en
mayores

International Journal of Developmental and Educational Psychology (in press)

Factor de impacto (FI)

H Index (3)

Latindex. Índice de impacto: 35 características cumplidas

ICDS (4.4)

Indexada en:

Psicodoc, Ulrich, Redalyc, Miar 2014, ISOC, Dialnet,
DICE, Sherpa-Romeo

Referencia:

Díaz-Prieto, C. & García-Sánchez, J. N. (in press). Posibilidades de la web para el despliegue de intervenciones integrales con personas mayores. *International Journal of Developmental and Educational Psychology*.

Patrones de uso de las herramientas de la web 2.0 en mayores

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Resumen

Se presentan los resultados obtenidos fruto de una revisión de diferentes estudios nacionales e internacionales sobre los patrones de uso de las herramientas de la web 2.0 en personas mayores. Se analizan estos resultados en torno a 7 ejes que permiten describir dicho uso, a saber: (i) *Información*; (ii) *Uso*; (iii) *Frecuencia y lugar de uso*; (iv) *Formación*; (v) *Finalidad*; (vi) *Barreras de accesibilidad y uso*; y (vii) *Beneficios percibidos*. Se concluye en el creciente interés que suscitan estas herramientas en el colectivo de personas mayores quienes, a pesar de las barreras que condicionan su uso, ven importantes beneficios de éstas al permitirles satisfacer sus necesidades informativas, comunicativas, de ocio, formación y gestión y por los importantes beneficios físicos, psicológicos, sociales y emocionales derivados de su uso. Durante la realización de este estudio, se solicitó financiación para un proyecto competitivo por cuatro años del Ministerio de Economía y Competitividad (EDU2016-78095-P), por el investigador principal (J. N. García). Además, C. Díaz-Prieto recibió fondos a través de una beca predoctoral (FPU-MECD REF. 12/04517) para el cuatrienio 2013-2017. Asimismo, se recibieron fondos concedidos por la compañía BIOGES Starters, S.A., asociada a la Universidad de León.

Palabras clave: patrones de uso; herramientas de la web 2.0; mayores; adultos

Abstract

The results of a review of various national and international studies on patterns of use of Web 2.0 tools in older people are presented. These results are analyzed around 7 axes which allow describing such use, namely: (i) Information; (ii) Use; (iii) Frequency and place of use; (iv) Training; (v) Purpose; (vi) Barriers of accessibility and use; and (vii) Perceived benefits. We concluded on the growing interest in these tools in the group of older people who, despite the barriers that restrict their use, see significant benefits from them to enable them to cater their information, communication, entertainment, educational and management needs, and the important physical, psychological, social and emotional benefits derived from their use. During the course of this study, funding was applied for the Spanish Ministry of Economy and Competitiveness, by Principal Researcher (J.N. García), competitive project for four years. Besides, C. Díaz-Prieto received funds through a PhD Fellowship (FPU-MECD REF. 12/04517) for the four-year period 2013–2017. And we received funds from the company BIOGES Starters, S.A., which is associated with the Universidad de León.

Keywords: patterns of use; Web 2.0 tools; seniors; adult

Introducción

El número de “Silver Surfers” a nivel mundial sigue creciendo día a día, conformando el grupo de edad de más rápido crecimiento en el uso de internet (Kania-Lundholm y Torres, 2015). Asimismo, la acelerada proliferación de las herramientas de la web 2.0 las convierten en una parte integral de las actividades de la vida diaria y de la participación en sociedad (Hill, Betts, y Gardner, 2015). Este tipo de herramientas ofrece a las personas una gran oportunidad para crear y compartir información, colaborar, favorecer los intercambios sociales y participar plena y activamente en la vida social y en comunidades virtuales con propósitos educativos, sociales, de ocio o de diversa índole (Lissitsa, 2016).

En este contexto, en los últimos años, ha habido un interés creciente por conocer los patrones de uso de estas herramientas por parte de los adultos mayores.

Ante la falta de estudios en el ámbito español e internacional que realicen una revisión en profundidad acerca del uso de estas herramientas, se presenta un marco teórico fruto de la revisión de diferentes estudios nacionales e internacionales en torno a 7 ejes que permiten describir el uso de las herramientas de la web 2.0 por parte de las personas mayores atendiendo a: (i) *Información*; (ii) *Uso*; (iii) *Frecuencia y lugar de uso*; (iv) *Formación*; (v) *Finalidad*; (vi) *Barreras de accesibilidad y uso*; y finalmente, (vii) *Beneficios percibidos*.

El estudio se articula en siete apartados que se corresponden con los ejes arriba indicados. Finalmente, se plasman las principales conclusiones obtenidas de este proceso de revisión.

Información y Conocimientos sobre las Herramientas de la Web 2.0

No existen apenas estudios que analicen el nivel general de conocimientos que tienen los adultos mayores en relación al ordenador e internet. No obstante, los indicadores de uso nos proporcionan de manera implícita información sobre el nivel general de conocimientos que poseen sobre estas herramientas. A nivel europeo, la Oficina Europea de Estadística señala que el 46% de las personas de entre 55 y 76

años usan regularmente internet (Eurostat, 2013). En lo que respecta a España, según datos del Instituto Nacional de Estadística, el 66.4% y el 64.8% de personas entre 55 y 64 años han utilizado alguna vez el ordenador e internet respectivamente, mientras que entre los 65 y 74 años, estos porcentajes se reducen al 38,1 y el 33,9% (INE, 2015). Porcentajes algo superiores revela un estudio llevado a cabo por la Office for National Statistics de Reino Unido donde el 87% de las personas de 55-60 años habían usado internet en los últimos tres meses, frente al 71% de personas de 65-74 años y el 33% de 75 o mayores (Office for National Statistics UK, 2015). De igual modo, en Canadá, el 70% de personas de 55-60 años conocían y habían usado internet, mientras que entre los 65 y 74 años este porcentaje se sitúa en el 45%, siendo del 21% en el grupo de 75 o más (Statistics Canada, 2007). En un estudio llevado a cabo en Norteamérica en 2011 se constató que el 72.4% de personas de entre 45-64 años reportaron haber utilizado el ordenador e internet, mientras que en el grupo de 65 o mayores, este porcentaje se situaba en el 45.5% (U.S. Department of Commerce Economics and Statistics Administration, 2013). En Nueva Zelanda, las estadísticas muestran como casi el 80% de las personas entre 55-64 años han utilizado internet en los últimos 12 meses, mientras que en la franja de edad de 65-74 años, el porcentaje se sitúa en algo más del 60%, siendo aproximadamente del 30% para los de 75 años o más (Statistics New Zealand, 2012). Por lo que respecta a Portugal, en un estudio que contaba con una muestra de 85 personas mayores participantes en programas universitarios de mayores, se constató que el 56% utilizaban internet (Martínez-Pecino, Delerue, y Silva, 2013). Agudo, Pascual y Fombona (2012) en un estudio llevado a cabo con 215 personas mayores españolas destacan el ordenador como el recurso más utilizado (68.8%), seguido de internet con el 50.7%. Por su parte, González, Fanjul y Cabezuelo (2015), en un estudio comparativo sobre el uso, consumo y conocimiento de las nuevas tecnologías en personas mayores en Francia, Reino Unido y España, destacan que en Francia el 69% de los encuestados utilizan el ordenador y poseen un alto conocimiento de las nuevas tecnologías, en Reino Unido, en la franja de más de 65 años de edad, el 85% utiliza el ordenador, mientras que en España, el 33% cree poseer un alto conocimiento sobre internet. Si bien, estos datos contrastan con los obtenidos en una investigación llevada a cabo en Hong Kong, donde los

porcentajes de uso del ordenador e internet en personas de 65 años o mayores se sitúan en el 18,4% y 18% respectivamente (Kwong, 2015). En un reciente estudio llevado a cabo por Ortega y Ortiz (2015) en el que participaron 225 personas mayores españolas de 55 años, el 53.3% admitió poseer conocimientos sobre internet. Por lo tanto, nuestra revisión muestra un acelerado crecimiento en el conocimiento y en el ritmo al que los usuarios mayores acceden a estas nuevas herramientas, si bien, aún queda mucho camino por recorrer.

Uso de las Herramientas de la Web 2.0

En segundo lugar, nos proponemos determinar *qué tipo* de herramientas de la web 2.0 utilizan las personas mayores. En lo que respecta a las *redes sociales*, en un estudio orquestado por el Pew Research Center (Smith, 2014) sobre el uso de estas herramientas, los porcentajes de uso en personas de 50 a 64 años eran los siguientes: Facebook (63%); Twitter (12%); Instagram (11%); Pinterest (27%) y, LinkedIn (30%). Si bien, a través de este estudio se constata como a medida que aumenta la edad, disminuye el uso de todos los tipos de redes sociales. De este modo, los porcentajes de uso de estas herramientas por personas de 65 años o mayores eran los siguientes: Facebook (56%); Twitter (10%); Instagram (6%); Pinterest (17%) y, LinkedIn (21%). En 2015, el Pew Research Center (Perrin, 2015) llevó a cabo un estudio sobre la evolución del uso de redes sociales, constatándose un notable incremento en el grupo de 65 años o mayores, siendo el porcentaje de uso en 2005 del 2%, comparado con el 35% de 2015. En la mayoría de estudios en relación a redes sociales se hallan diferencias en función del género, siendo las mujeres mayores las más propensas a participar en redes sociales. En 2012, también en Norteamérica, el 86% de 65 años o mayores ya admitía utilizar el correo electrónico (Zickuhr y Madden, 2012). En el ámbito europeo, aproximadamente el 85% de personas de 55 a 74 años utilizan el correo electrónico, el 27% redes sociales, el 25% aplicaciones para hacer video-llamadas, casi el 50% wikis, pero tan sólo un 5% aproximadamente utilizan herramientas educativas. A nivel español, según datos del Instituto Nacional de Estadística (2015), las personas en las franjas de edad de 55-64 años y 65-74 hacen uso de las siguientes herramientas en la siguiente proporción: un 74,3% y 76% respectivamente utiliza el correo electrónico; el 20,5% y un 24,8%

servicios para realizar video-llamadas; un 40,9% y un 37,4% redes sociales; un 3,1% y un 1,5% blogs o webs; un 56,2% y un 52,4% wikis; y, un 10,4% y un 6,1% herramientas con fines educativos. En el estudio llevado a cabo por González et al. (2015), se constata como un 69% de los encuestados franceses han utilizado Facebook y un 20% blogs. Por lo que respecta a los encuestados británicos, el 92% utilizan el correo electrónico, el 18% habían utilizado Apps y en cuanto al uso de redes sociales, la mayoría utilizaban Facebook como principal red social (46%), seguido de Twitter (39%) y blogs (15%). Atendiendo a la muestra española destacan que el 76% de los encuestados conocen y utilizan Facebook, el 15% blogs y el 10% Twitter. Tan sólo un 15% utilizan Apps. Llorente, Viñarás y Sánchez (2015) empleando una metodología cualitativa basada en grupos de discusión, destacan el uso que hacen las personas mayores de Google como único buscador. Si bien, admiten no utilizar otras herramientas informativas como los blogs y los foros, aunque sí wikis. Hacen especial mención al uso de otras herramientas con fines comunicativos, redes sociales y Apps, destacando el uso de herramientas como el correo electrónico, Facebook, Skype y WhatsApp. Como se puede ver, no existen estudios que analicen el uso de otras herramientas como son las de carácter funcional, de imagen y sonido, ofimática y de la nube. En definitiva, a la vista de estos datos podemos decir que son pocos los estudios que hayan llevado a cabo un análisis exhaustivo del uso de estas herramientas de la web social por parte del colectivo de personas mayores, siendo necesaria una mayor investigación al respecto.

Frecuencia y Lugar de uso de las Herramientas de la Web 2.0

Si eran pocos los estudios en relación al uso, menos aún son los que se enfocan a este respecto. Existen datos generales sobre la *frecuencia* de uso. Según estadísticas de Eurostat (2013), existe una divergencia significativa, o lo que comúnmente llamamos brecha digital, entre los usuarios de 16-24 años que habrían utilizado internet al menos una vez a la semana (94%) y aquellos de 55-74 que lo habían utilizado con la misma frecuencia (46 %). Atendiendo a datos del INE (2015), entre los usuarios de 55-64 años que han utilizado internet en los tres últimos meses, un 7.5% lo ha hecho menos de una vez a la semana, el 20,7% todas las semanas, pero no

diariamente, y el 71,7% diariamente, al menos cinco días por semana. En el caso del grupo de 65-74 años, el 10,5% menos de una vez a la semana; el 24,4% todas las semanas y el 65% diariamente. Según Office for National Statistics de Reino Unido (2015), nueve de cada diez británicos de 55 a 64 años han utilizado internet en los últimos tres meses, siete de cada 10 en la franja de 65 a 74 años y tres de cada 10 en mayores de 75 años. Zickuhr y Madden (2012) destacan que el 76% de las personas de 50-64 años se conectan diariamente a internet, frente al 70% de 65 años o mayores. Esto sería indicativo de que una vez que se les entrega las herramientas y la formación necesaria para comenzar a utilizar internet, las personas mayores se convierten en usuarios habituales de este medio (Díaz-Prieto y García-Sánchez, 2016). En un exhaustivo estudio comparativo llevado a cabo por Olson, O'Brien, Rogers, y Charness (2011) sobre la frecuencia de uso de diferentes tecnologías por parte de jóvenes entre 18 y 28 años y mayores de entre 65 y 90 años se encontró que, mientras que el 40% de los jóvenes había recurrido a internet más de 15 horas por semana, la mayoría de usuarios mayores recurrían entre 1 y 5 horas a la semana. Asimismo, se especifican las diferencias en la frecuencia de uso de las tecnologías para diferentes fines como son los de comunicación, ocio y entretenimiento, compra, cuidado de la salud, sistemas de apoyo en el hogar, aprendizaje y educación, entre otros. En un estudio llevado a cabo por Agudo et al. (2012), se constató como el 40,1% de los adultos mayores no utiliza Internet habitualmente frente al 59,9% que sí lo hace, no existiendo diferencias en función de la edad, el género, la forma de convivencia, ni el lugar de residencia, aunque sí en función del nivel educativo: a mayor nivel de estudios, mayor frecuencia de uso. Martínez-Pecino et al. (2013) encontraron que la frecuencia de uso de internet entre personas mayores es diaria o de dos o tres veces por semana. Otros estudios se han centrado en la frecuencia de uso de una herramienta específica como es Facebook. Así, Hayes, van Stolk-Cooke y Muench (2015) hallaron una menor frecuencia en el uso de Facebook a medida que aumenta la edad. Así, el 10,8% de los jóvenes de 18-29 años reportaron utilizar esta herramienta más de tres horas por día, frente al 11,7% de 30-49 años y el 4% de 50 años o más. De igual forma, el 16% de los adultos mayores, el 27% de 30-49 años, y el 32,8% de los jóvenes reportaron comprobar sus cuentas de Facebook 10 veces o más por día.

Por lo que respecta al *lugar* de uso, se han llevado a cabo estudios sobre el equipamiento de medios tecnológicos en el hogar, pero no se ha indagado apenas sobre el dónde, es decir, el lugar donde frecuentemente utilizan estas personas mayores las herramientas de la web 2.0. Agudo et al. (2012) destacan que el lugar donde más frecuentemente utilizan el ordenador e internet las personas mayores suele ser un espacio público, si bien existen diferencias en función del nivel educativo, de modo que, un nivel educativo más alto conlleva una mayor disponibilidad de estos recursos en el ámbito privado. No obstante, estos datos contrastan con los obtenidos por Morris, Goodman, y Brading (2007) donde el lugar preferido por las personas mayores para hacer uso del ordenador e internet era el hogar, seguido de la biblioteca, la casa de algún familiar o conocido, el centro educativo, el trabajo, el centro comunitario o centro de día y finalmente, otros lugares.

Formación en el uso de Herramientas de la Web 2.0

Otro de los propósitos de esta revisión era determinar *cómo aprendieron* a utilizar las personas mayores cada una de estas herramientas. Agudo et al. (2012), en un estudio con una muestra de 215 personas, destaca que el 60% aprendió a utilizar internet a través de cursos y talleres. Un año después, Martínez-Pecino et al. (2013), en esta línea, destacan que la formación que las personas mayores tienen de internet procede principalmente de la asistencia a cursos (casi el 50%) seguido de la ayuda de familiares, otros métodos, el autoaprendizaje y finalmente, la ayuda de amigos. Si bien, otros estudios más recientes contradicen estos datos. Así, González et al. (2015), destacan que el 66% de los adultos mayores franceses aprendieron a utilizar internet solos, al igual que sucede en Reino Unido (69%) en el grupo de mayores de 55-65 años, seguido de con ayuda familiar con un 22%. Si bien, en mayores de 65 años no sucede lo mismo, siendo la asistencia a cursos de formación lo más habitual. En el contexto español, la ayuda de familiares y amigos parece ser la principal vía de aprendizaje (61%), seguido del autoaprendizaje (26%) y cursos (13%). No obstante, en lo que sí coinciden todos los estudios, es en el interés de las personas mayores por recibir formación en nuevas tecnologías.

Finalidad de uso de las Herramientas de la Web 2.0

A este respecto, hay mucha investigación. No obstante, independiente del lugar en donde se hayan llevado a cabo los estudios, todos ellos parecen coincidir en que las personas mayores utilizan internet para cinco fines, a saber: (i) Información; (ii) Comunicación; (iii) Ocio y entretenimiento; (iv) Formación, y (v) Gestiones administrativas, transaccionales, personales o de otro tipo (Agudo et al., 2012; González et al., 2015; Kwong, 2015; Llorente et al., 2015; Martínez-Pecino et al., 2013; Morris et al., 2007; Sum, Mathews, y Hughes, 2009; Wagner, Hassanein, y Head, 2010).

Barreras de Accesibilidad y Uso

Uno de los aspectos más analizados por las investigaciones de este tipo es el de las *barreras* percibidas en el acceso y uso de internet que encuentran las personas mayores. En base a los estudios revisados, podemos aglutinar estas barreras en tres grupos (Díaz-Prieto y García-Sánchez, 2016; Kwong, 2015; Lampe, Vitak, y Ellison, 2013; Lee, Chen, y Hewitt, 2011; Lee y Coughlin, 2015; Lian, y Yen, 2014; Martínez-Pecino et al., 2013; Morris et al., 2007; Pan y Jordan-Marsh, 2010): (i) *Las dependientes de la propia persona*, donde se incluirían algunas como la falta de interés, baja percepción de la propia capacidad, no percepción de beneficios, miedo, ansiedad, entre otras; (ii) *Las dependientes del contexto*, como son la falta de apoyo técnico, falta de formación, falta de medios o alto coste de los mismos, entre otras; y finalmente, (iii) *Las dependientes de las propias herramientas* concernientes a aspectos de confidencialidad, privacidad, falta de aplicaciones específicas, factores relativos a accesibilidad y usabilidad, entre otras.

Beneficios percibidos derivados del uso de Herramientas de la Web 2.0

Pocos estudios se han llevado a cabo en relación a los beneficios percibidos derivados del uso de estas herramientas, especialmente en el colectivo de edad al que nos referimos. Por ejemplo, aunque en otros grupos de edad, diferentes investigaciones han constatado que el uso de Facebook repercute sobre rasgos de personalidad, autoestima y depresión (ver por ejemplo, Andreassen, Torsheim,

Brunborg, y Pallesen, 2012). Si bien, en una investigación llevada a cabo en Norteamérica, conducida por Hayes et al. (2015) donde se intentaba conocer los efectos del uso de Facebook sobre el bienestar de personas de diferentes grupos de edad, tan sólo se pudieron constatar efectos sobre la imagen corporal negativa y la dimensión social, siendo el grupo de mayores los que menores efectos percibían al respecto. Hill et al. (2015) estudiaron el impacto de las nuevas tecnologías sobre el bienestar de las personas mayores hallando efectos a nivel social, funcional, de autonomía, y de participación. Por su parte, Karavidas (2005) encontró efectos sobre la autoeficacia y la satisfacción general con la vida. Diferentes estudios en los últimos años han demostrado el potencial de internet a la hora de mejorar la comunicación, favorecer el aprendizaje permanente, ampliar las redes de apoyo social, favorecer el bienestar psicológico, aumentar los intereses personales y la información relacionada con la salud, y proporcionar oportunidades de ocio y participación ciudadana, y en definitiva, mejorar la calidad de vida de las personas mayores (Lee et al., 2011).

Conclusiones

Tras la revisión efectuada podemos extraer varias conclusiones. En primer lugar, cabe destacar el creciente interés de los adultos mayores por utilizar estas herramientas, probablemente motivados por la demanda social que cada vez en mayor medida, nos exige estar conectados a la red para acceder a un mundo globalizado. Quizá, debido a este interés, en los últimos años han proliferado los cursos de formación en estas herramientas a los que cada día acceden más adultos mayores. No obstante, todavía a día de hoy, continúa existiendo una importante brecha digital de tipo generacional que exige invertir más esfuerzos para eliminar las diferentes barreras que condicionan y limitan el uso de estas herramientas. Teniendo en cuenta los importantes beneficios de estos medios a nivel físico, psicológico, social y emocional, y de manera general, sobre la satisfacción vital, el bienestar y la calidad de vida, se abren nuevas perspectivas a la hora de aprovechar el potencial de estas herramientas con fines de intervención (Díaz-Prieto y García-Sánchez, 2016).

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**Estudios sobre patrones
de uso de las
herramientas de la web
2.0 y perfiles
psicológicos asociados**

Estudio 5

Internet en mayores (INMA)

International Journal of Developmental and Educational Psychology 27,(1, 2),
2015, págs. 35-41). ISSN: 0214-9877

Factor de impacto (FI)

H Index (3)

Latindex. Índice de impacto: 35 características cumplidas

ICDS (4.4)

Indexada en:
Psicodoc, Ulrich, Redalyc, Miar 2014, ISOC, Dialnet, DICE,
Sherpa-Romeo

Referencia:

Díaz-Prieto, C., & García-Sánchez, J. N. (2015). Internet en mayores (INMA).
International Journal of Developmental and Educational Psychology, 27(1, 2), 35-42. doi:
<http://dx.doi.org/10.17060/ijodaep.2015.n1.v2.41>

INTERNET EN MAYORES (INMA)

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<http://dx.doi.org/10.17060/ijodaep.2015.n1.v2.41>

Fecha de Recepción: 10 Febrero 2015

Fecha de Admisión: 30 Marzo 2015

RESUMEN

Se presenta la encuesta online Internet en Mayores (INMA) diseñada para obtener información en relación al uso y dificultades en el acceso y manejo de internet en personas mayores, así como su relación con diferentes variables psicosociales. La encuesta consta de 14 escalas a través de las cuales se pretende analizar la información que poseen los adultos mayores sobre internet; el uso; la formación recibida; la frecuencia y lugar de utilización; finalidad con la que utilizan las diferentes herramientas de internet; así como las barreras de accesibilidad y usabilidad halladas y los beneficios percibidos derivados del uso de internet. Junto a ello, se incluyen cinco escalas sobre autoeficacia en el envejecimiento activo; inteligencia emocional; motivación general; dimensión social general y afrontamiento, que aportarán la información necesaria para estudiar las ya citadas relaciones. La encuesta INMA ha sido diseñada para ser cumplimentada por personas mayores de 55 años. La aplicación de la encuesta se llevará a cabo de manera online. Esta encuesta puede aportar información relevante para el diseño de programas y pautas de ayuda basadas científicamente.

Palabras clave: internet; personas mayores; competencias psicosociales; encuesta

ABSTRACT

We present the online survey Internet at Seniors (INMA). This survey is designed to obtain information regarding the use and difficulties in internet access and management internet in older people, and their relationship with different psychosocial variables. The survey consists of 14 scales with which we want to analyze information that older people have about internet; knowledge; use; the training received; the frequency and location of use; purpose for using the different tools; and the barriers of accessibility and usability found and perceived benefits of using the Internet. In addition, we include a scale of self-efficacy in active aging; emotional intelligence; general motivation; general social dimension and coping. These scales give us information about the relationships between use of Internet and psychosocial variables. The INMA survey was designed to be completed by persons over 55 years. The implementation of the survey will be conducted online. This sur-

INTERNET EN MAYORES (INMA)

vey can provide relevant information for the design of programs and support scientifically based guidelines.

Keywords: internet; older people; psychosocial competences; survey

ANTECEDENTES

España ha experimentado un notable proceso de envejecimiento poblacional en los últimos años. Tal es la situación que se espera que en un futuro próximo, la población adulta mayor llegue a constituir un tercio de la población española (Abad, 2014). Junto a ello, no debemos olvidar que las nuevas tecnologías se han impuesto con fuerza en todos los sectores sociales. Todo ello plantea nuevos retos de cara a integrar al adulto mayor en la sociedad de la información y con ello promover su participación social y dar respuestas útiles a sus problemas y necesidades (Fondevila, Carreras, Seebach, & Pesqueira, 2015).

Datos recientes del Instituto Nacional de Estadística a 2 de octubre de 2014 en su encuesta sobre *Equipamiento y Uso de Tecnologías de Información y Comunicación en los Hogares (TIC-H)* muestran como algo más de una cuarta parte (25.8 %) de la población de entre 65 y 74 años ha utilizado el ordenador en los últimos 3 meses, mientras que el 26.2% ha utilizado internet en el mismo periodo de tiempo y un 78.6% el teléfono móvil. Un porcentaje algo menor es el que ha utilizado internet al menos una vez por semana en los últimos tres meses (22.8%). Por tanto, es posible afirmar que el uso del ordenador e internet entre la población adulta mayor es más bien bajo, no obstante va en lento pero progresivo aumento si tenemos en cuenta que en el año 2006, año en el que comenzó a realizarse esta encuesta, sólo un 7.5% había utilizado el ordenador y un 5.1% internet en los últimos tres meses.

Ahora bien, atendiendo a los datos resultantes de la citada encuesta, sorprende el descenso en el uso de estos medios que se produce especialmente a partir de los 55 años.

Algunos estudios han situado las posibles causas de esta *brecha digital* en las propias características de las herramientas, programas y aplicaciones disponibles en la red. Entre estas posibles causas figuran el diseño de pantalla, la complejidad de las herramientas, falta de formación, dificultades con los dispositivos de entrada, entre otras (Czaja et al., 2006; Wagner et al., 2010). Otros, sin embargo, las sitúan en aspectos intrínsecos de las propias personas mayores (falta de interés; escasa motivación; baja autoeficacia hacia su uso; problemas motores, sensoriales y cognitivos; miedo; ansiedad; falsas creencias; etc.) (Broady et al., 2010; Vromana, Arthanata, & Lysackb, 2015). Si bien, ninguno de estos estudios ha analizado la relación existente entre los patrones y barreras de accesibilidad y uso con determinadas variables psicosociales que pueden actuar como moduladoras de lo anterior (inteligencia emocional, motivación, afrontamiento, autoeficacia, dimensión social y envejecimiento activo).

El objetivo que nos planteamos pues es diseñar un encuesta online que nos permita obtener información sobre el uso y dificultades en el acceso y manejo de internet en personas mayores, así como su relación con diferentes variables psicosociales. Entendemos que sólo partiendo del conocimiento de los patrones de uso, así como de las barreras, tanto personales como las derivadas de las propias tecnologías y su relación con diferentes variables psicosociales, es posible desarrollar programas online que se adapten a las necesidades e intereses de este sector de la población.

INTERNET EN MAYORES (INMA)

Internet en mayores (INMA) es un instrumento de evaluación online de los patrones de uso y dificultades de acceso y manejo de internet en personas mayores, así como de diferentes variables psicosociales. Esta encuesta se ha elaborado a partir de la revisión y adaptación de otras ya existentes tales como Hewe 2.0 (García-Martín, & García, 2013); Encuesta de autorregulación emocio-

nal (ERQ, Gross & John, 2003); Inventario de Estrategias de Afrontamiento (CSI, Cano, Rodríguez & García, 2007); Encuesta MOS de apoyo social (Revilla, Luna, Bailón, & Medina, 2005), entre otros muchos.

Concretamente, la encuesta *INMA*, a través de las catorce escalas de las que consta, aporta información relevante en relación a las percepciones y opiniones de los adultos mayores en torno a: i) la información que disponen sobre el ordenador e internet (*INMA-INF*), ii) la utilización o no de dichas herramientas (*INMA-USO*); iii) la formación recibida tanto para el uso del ordenador, como de las diferentes herramientas de internet (*INMA-FOR*); iv) la frecuencia de uso (*INMA-FRE*); v) lugar o lugares de uso de esos medios (*INMA-LUG*); vi) finalidad de uso (*INMA-FIN*); vii) barreras de accesibilidad y usabilidad (*INMA-BAR*); viii) beneficios percibidos derivados del uso de internet (*INMA-BEN*); ix) autoeficacia en el envejecimiento activo (*INMA-EA*); x) inteligencia emocional (*INMA-IE*); xi) motivación general (*INMA-MOT*); xii) dimensión social general (*INMA-DS*); y, xiii) afrontamiento general (*INMA-AFR*). Además, se incluye un apartado de datos demográficos (*DDM*) al comienzo.

Descripción de las escalas

En primer lugar, el apartado de *datos demográficos*, incluye una serie de cuestiones de carácter general relativas al género, fecha de nacimiento, estado civil, lugar de procedencia y residencia, nivel de estudios, situación laboral, ocupación actual y/o antes del retiro, nivel económico y de autonomía en la vivienda.

Las siguientes 8 escalas evalúan diferentes variables relacionadas con el uso de internet (Tabla 1)

Tabla 1
Descripción estructural de las escalas relativas al uso de internet

Código	Aspecto que evalúa	Ítems	Ejemplo ítem		Opciones de respuesta
			Nº	Ejemplo	
DDM	Datos demográficos en mayores	1-13	13	Vivo...	Opciones (7)
INF	Información sobre internet	1-2	2	La información que poseo sobre internet es...	Escala (1-7)
USO	Uso de herramientas de internet	1-11	1	¿Utiliza o ha utilizado alguna vez HERRAMIENTAS DE COMUNICACIÓN (P. ej. Skype, WhatsApp, Line, Messenger, Chats)?	Dicotómica
FOR	Formación en internet	1-13	2	La formación que he recibido sobre internet ha sido...	Escala (1-7)
			3	¿Cómo aprendió a utilizar las HERRAMIENTAS DE COMUNICACIÓN (P. ej.: Skype, WhatsApp, Line, Messenger, Chats)?	Opciones (6)
FRE	Frecuencia de uso de herramientas de internet	1-11	1	¿Con qué frecuencia utiliza las HERRAMIENTAS DE COMUNICACIÓN (P. ej.: Skype, WhatsApp, Line, Messenger, Chats)?	Escala (6)
LUG	Lugar de uso de herramientas de internet	1-11	1	¿En qué lugar o lugares suele utilizar las HERRAMIENTAS DE COMUNICACIÓN (P. ej.: Skype, WhatsApp, Line, Messenger, Chats)?	Opciones (7)
FIN	Finalidad de uso de herramientas de internet	1-11	1	El principal motivo por el que utilizo las HERRAMIENTAS DE COMUNICACIÓN (P. ej.: Skype, WhatsApp, Line, Messenger, Chats) es...	Opciones (7)
BAR	Barreras de accesibilidad y usabilidad de internet	1	1	Las principales dificultades con las que me encuentro a la hora de usar internet son...	Opciones (6)
BEN	Beneficios percibidos derivados del uso de internet	1-7	1	Desde que utilizo las diferentes herramientas de internet realizo actividades por mí mismo que antes no hacía o para las que necesitaba ayuda	Escala (1-7)

INTERNET EN MAYORES (INMA)

La escala *INMA-INF*, permite evaluar, a través de 2 ítems, el grado de información que posee la persona mayor en torno al ordenador e internet en una escala tipo Likert de 7 puntos, en donde 1 es ninguna información y 7, mucha información.

La escala *INMA-USO*, al igual que la *INMA-FRE*, *INMA-LUG*, e *INMA FIN*, constan respectivamente de 11 ítems cada una con los que se pretende evaluar el uso, la frecuencia, los lugares preferentes de uso y la finalidad con la que se utilizan once tipos de herramientas de internet, a saber: (i) *Herramientas de comunicación* (P. ej.: Skype, WhatsApp, Line, Messenger, Chats); (ii) *Redes sociales* (P. ej.: Facebook, Twitter, Google+); (iii) *Navegadores y buscadores* (P. ej.: Google, Mozilla, Internet Explorer, Ask, Bing); (iv) *Correo electrónico*; (v) *Herramientas de imagen y sonido* (P. ej.: Youtube, Instagram); (vi) *Herramientas de la nube* (P. ej.: Dropbox, Skydrive, Google drive); (vii) *Herramientas funcionales* (P. ej.: Google Earth, Google Maps); (viii) *Herramientas de ofimática* (P. ej.: Microsoft Word, Excel, PowerPoint, PDF); (ix) *Herramientas educativas* (P. ej.: Moodle, Webquest); (x) *Herramientas para seleccionar, clasificar y compartir información* (P. ej.: Blogs; Wikis; marcadores sociales de tipo Delicious o Digg); y (xi) *Aplicaciones para móvil* (Apps).

Por lo que respecta a la escala *INMA-US*, nos ofrece información en cuanto al uso de tales herramientas, existiendo dos opciones de respuesta (sí o no). Esto nos permite determinar cuáles son las herramientas de internet con mayor uso por parte del adulto mayor. La escala *INMA-FRE*, cuenta con 6 opciones de respuesta para cada una de las herramientas. Estas opciones son las siguientes: i) no la he utilizado nunca; ii) alguna vez al año; iii) alguna vez al mes; iv) varias veces a la semana; v) todos los días; y, vi) más de 2 horas al día. En lo que se refiere al *INMA-LUG*, las opciones de respuesta son siete: i) nunca la he utilizado; ii) en casa; iii) en el centro de día o residencia; iv) en centros lúdico-ocupacionales (centro cívico, asociaciones, etc.); v) en el centro educativo; vi) en el trabajo; y (vii) en la calle. Lo mismo sucede con la escala *INMA-FIN*, en donde las opciones de respuesta también son siete: i) no la he utilizado; ii) por diversión o entretenimiento; iii) para contactar con otros; iv) para informarme; v) para realizar gestiones; vi) para aprender; y (vii) por trabajo. En estas dos últimas escalas, los encuestados pueden seleccionar tantas opciones como crean conveniente.

En lo que se respecta a la escala *INMA-FOR*, a través de sus 13 ítems, evalúa tanto la formación recibida para el manejo del ordenador e internet en general, como para cada una de las herramientas de internet. Por lo que respecta a los dos ítems de formación general, se valoran a través de una escala tipo Likert de 7 puntos que va de ninguna formación a mucha. En cuanto a los 11 ítems relativos a herramientas específicas, se pretende obtener información sobre el modo en que aprendieron a utilizar esas herramientas. De esta forma, las diferentes opciones de respuesta son las que se muestran: (i) no las he utilizado nunca; (ii) Yo sólo; (iii) Con ayuda técnica (vía telefónica, vendedor); (iv) Con la ayuda de familiares y/o amigos; (v) En cursos y talleres, y, (vi) Con la ayuda de manuales o guías de uso, vídeos. En esta escala podrán seleccionar tantas opciones como crean conveniente.

A través de un ítem, *INMA-BAR* evalúa las barreras de accesibilidad y usabilidad que pueden encontrarse las personas mayores. Éstas pueden hallarse a nivel sensorial y/o físico; en la falta de disponibilidad de medios técnicos; en la complejidad de las herramientas u otras. Existe la posibilidad de seleccionar más de una opción o en el caso de que el sujeto no tenga dificultades, podrá seleccionar también dicha respuesta.

La escala *INMA-BEN*, consta de 7 ítems que evalúan los efectos del uso de internet sobre diferentes dimensiones del adulto mayor: autonomía; salud física y mental; participación social; estado de ánimo; red social; motivación general y autoestima.

Hasta aquí, la primera parte de la encuesta en relación a las herramientas de internet. La segunda parte de ésta, consta de una serie de escalas generales sobre competencias psicosociales. En la tabla 2 aparece la descripción estructural de esta segunda parte de la encuesta.

Tabla 2
Descripción estructural de las escalas relativas a variables psicosociales

Código	Aspecto que evalúa	Variables específicas	Ítems	Ejemplo ítem		Opciones de respuesta
				Nº	Ejemplo	
AE	Autoeficacia en el envejecimiento activo	Autonomía e independencia	1	1	¿En qué medida se siente capaz de ser autónomo e independiente?	Escala (1-7)
		Actividades de autocuidado	2			
		Actividades turísticas	3			
		Actividades formativas y culturales	4			
		Actividades lúdicas y sociales	5			
		Actividades de representación y participación ciudadana	6			
		Actividades de voluntariado	7			
IE	Inteligencia emocional	Identificación emociones propias	1	1	¿Sabe usted identificar lo que siente?	Escala (1-7)
		Reconocimiento emociones ajenas	2			
		Expresión emocional	3			
		Autocontrol emocional	4			
		Empatía	5			
		Asertividad	6			
		Autoestima	7			
MOT	Motivación general	Motivación	1-3	1	¿Persiste usted hasta conseguir sus objetivos?	Escala (1-7)
		Atribuciones causales	4-5			
DS	Dimensión social general	Red de apoyo social	1-8	1	Indique en qué medida está de acuerdo con las siguientes afirmaciones: A- Tengo un círculo social amplio	Escala (1-7)
AFR	Afrontamiento general	Afrontamiento activo.	1	1	Cuando usted se encuentra ante alguna dificultad o problema, ¿intenta solucionar directamente el problema, aceptando los riesgos que ello implica?	Escala (1-7)
		Autodistracción	2			
		Apoyo emocional	3			
		Apoyo instrumental	4			
		Planificación	5			
		Descarga emocional	6			
		Negación	7			
		Renuncia	8			
		Autocrítica	9			
		Reformulación positiva	10			
		Humor	11			
		Religión	12			
		Aceptación	13			

INTERNET EN MAYORES (INMA)

Aplicación

La encuesta online INMA ha sido diseñada para ser cumplimentada por personas mayores de 55 años puesto que, diferentes estudios muestran como a partir de esta edad se produce un descenso en el uso de internet, lo que nos lleva a plantearnos el motivo por el que esto ocurre. No obstante, podría ser aplicado a adultos más jóvenes.

La encuesta ha sido diseñada para su aplicación online a través de la herramienta *Google Docs*. Se ha de facilitar a los adultos mayores el enlace a través del cual podrán acceder a la misma, bien a través del correo electrónico, a través de otras plataformas (Facebook, Twitter, etc.) o en papel para que posteriormente lo tecleen. Cada persona debe responder a esta encuesta de manera personal y reflexiva, siguiendo las normas que se indican claramente en la misma. En todo caso, se recomienda la presencia de una persona conocedora del instrumento que subraye enfáticamente, previamente a su cumplimentación, que sus respuestas son totalmente confidenciales y sólo utilizables a efectos estadísticos globales, que no existen respuestas correctas o incorrectas, simplemente situaciones diferentes y en ningún caso se emitirán juicios de valor relativos a sus conductas.

El diseño de la encuesta se ha adaptado a las previsibles características y necesidades del adulto mayor. Cada pregunta aparece en una pantalla diferente, en letra grande y estilo de redacción sencillo, de modo que no se requieren grandes destrezas informáticas ni sensoriales, ni un nivel educativo alto para su cumplimentación. Una vez que se accede a la encuesta y tras responder cada una de las preguntas, es necesario pulsar "continuar" para avanzar y al finalizar, han de pulsar "enviar" para que sus respuestas sean registradas.

En cuanto a la duración aproximada de la prueba, ésta oscila entre 25 y 30 minutos, dependiendo de las características de cada persona y su velocidad de respuesta.

CONCLUSIONES

A lo largo de este artículo se ha presentado la encuesta online *Internet en Mayores* (INMA) que permite la obtención de información sobre el uso y dificultades en el acceso y manejo de internet en personas mayores, así como su relación con diferentes variables psicosociales.

Esta encuesta permite conocer, a través de las diferentes escalas que la componen, las opiniones y percepciones que tienen los adultos mayores en torno a: i) la información que disponen sobre el ordenador e internet; ii) la utilización o no de dichas herramientas; iii) la formación recibida tanto para el uso del ordenador, como de las diferentes herramientas de internet; iv) la frecuencia de uso; v) lugar o lugares de uso de esos medios; vi) finalidad de uso; vii) barreras de accesibilidad y usabilidad; viii) beneficios percibidos derivados del uso de internet; ix) autoeficacia en el envejecimiento activo; x) inteligencia emocional; xi) motivación general; xii) dimensión social general; y, xiii) afrontamiento general.

Esta encuesta puede aportar información relevante para el diseño de programas y pautas de ayuda basadas científicamente.

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Estudio 6

Psychological profiles of older adult Web 2.0 tool users

Computers in Human Behavior (vol. 64, 2016, págs. 673-681). ISSN: 0747-5632

Factor de impacto (FI)

JCR (3.435)- Psychology, Multidisciplinary-Q1- Rank 15/128
Psychology, Experimental-Q1- Rank 10/84

FI-5 años (4.252)

SJR (1.646). Arts and Humanities- Q1. Human-Computer Interaction -
Q1. Psychology- Q1

H Index (96)

Cited Half-Life (4.4)

Article influence score (0.788)

ICDS (11.0)

CARHUS Plus+ 2014 (GRUPO A)

Indexada en: Bioengineering Abstracts, COMPENDEX, Cambridge Scientific Abstracts, Computer Publishers & Publications, Current Contents, Current Contents/Social & Behavioral Sciences, Current Index to Journals in Education, Information Science Abstracts, International Bibliography Book Reviews, International Bibliography of Periodical Literature, Library and Information Science Abstracts, EMBASE, Engineering Index, Engineering Meetings, Ergonomics Abstracts, IBZ and IBR, PsycLIT, Psychology Abstracts, SSSA/CISA/ECA/ISMEC, Social Sciences Citation Index, Sociological Abstracts, Software Reviews on File, World Patent Information, PsycINFO, Scopus, MathEduc

Referencia:

Díaz-Prieto, C. & García-Sánchez, J. N. (2016). Psychological profiles of older adult Web 2.0 tool users. *Computers in Human Behavior*, 64, 673-681.

<http://dx.doi.org/10.1016/j.chb.2016.07.007>



Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

Full length article

Psychological profiles of older adult Web 2.0 tool users



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ARTICLE INFO

Article history:
Received 7 June 2016
Accepted 13 July 2016

Keywords:
Differential patterns
Internet
Web 2.0 tools
Adults
Seniors

ABSTRACT

A study was conducted to explore the relationships between the Web 2.0 tool use and various psychosocial, emotional and active ageing factors. To this end, we designed and administered an online questionnaire to 454 Spanish people aged 55 or older. We performed descriptive and multivariate analyses using the general linear model. We obtained three types of evidence. The results show differential patterns of Web 2.0 tool use in relation to age, sex and educational level. Users reported benefits in relation to autonomy, motivation, social dimension, social participation, mood, self-esteem, and physical and mental health generally, and differences were observed according to age, educational level and type of tool. We also obtained differential psychological profiles for users of different tools that could determine usage patterns and derived benefits. This study has important implications as regards promoting the full integration of older adults in the knowledge society.

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1. Introduction

The number of older adult Internet users (*Silver Surfers*) has risen sharply worldwide, and indeed it is among this age group that Internet use has witnessed the most rapid growth (Kania-Lundholm & Torres, 2015). Simultaneously, the development and proliferation of Web 2.0 tools has continued apace, and these have now become an integral part of the activities of daily living and participation in society, providing an unparalleled opportunity to create and share information, collaborate, promote social exchange and participate fully and actively in social life and virtual communities for a wide range of purposes (Hill, Betts, & Gardner, 2015; Lissitsa & Chachashvili-Bolotin, 2016).

Although data are available on usage patterns and the perceived benefits of using this medium, the psychological profiles of older adult Web 2.0 tool users remain unknown. These profiles probably exert an influence on patterns of use and perceived benefits, and formed the subject of the present study.

With regard to use, various studies have highlighted the rapid adoption of Web 2.0 tools among older adults, emphasising that once equipped with the tools and training to start using the

Internet, they become regular users of this medium (Hayes, van Stolk-Cooke & Muench, 2015; INE, 2015). Training in the use of these new tools is clearly arousing increasing interest among older adults. At present, there are three main learning pathways: independent learning, family-supported learning and training courses (Agudo, Pascual, & Fombona, 2012; González, Fanjul, & Cabezuolo, 2015; Martínez-Pecino, Delerue, & Silva, 2013; Perrin, 2015). Regardless of the source, there is widespread consensus that to a greater or lesser extent, older adults generally use the Internet for five purposes: (i) information; (ii) communication; (iii) leisure and entertainment; (iv) training, and (v) administrative, transactional, personal or other purposes (Agudo et al., 2012; González et al., 2015; Kwong, 2015; Llorente, Viñarás, & Sánchez, 2015; Martínez-Pecino et al., 2013). Perhaps one of the most frequently discussed aspects in research of this type is that of perceived *barriers* to accessibility and usability. Various studies have developed theories to explain the factors influencing adoption of technological innovations (Lee & Coughlin, 2015). These include the Diffusion of Innovations model (Rogers, 1995) and the Technology Acceptance model (TAM) (Davis, 1989). Based on these models and a review of various studies in this field (Kwong, 2015; Lampe, Vitak, & Ellison, 2013; Lee & Coughlin, 2015; Lee, Chen, & Hewitt, 2011; Lian & Yen, 2014; Martínez-Pecino et al., 2013), these barriers can be classified into the following groups: (i) *intrapersonal barriers* (e.g. lack of interest; perception of limited capacity; no perceived emotional, psychological or functional benefits; no perceived usefulness; lack of experience; fear; anxiety; lack of time and physical problems);

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(ii) *contextual barriers* (e.g. tradition; risk; lack of technical support, training and means and the high cost of the technology); and lastly, (iii) *barriers associated with the tools themselves* (e.g. concerns about confidentiality and privacy; lack of specific applications and factors related to accessibility and usability).

Recent years have witnessed a proliferation of studies using the Internet and Web 2.0 tools as a means to develop and implement intervention programmes aimed at optimising diverse factors. These studies have demonstrated the efficacy of these new tools to intervene in different spheres, reporting cognitive, social, affective, emotional, physical, self-regulatory, behavioural and self-efficacy benefits, and in general showing that they contribute to improving physical and mental health, quality of life, well-being and life satisfaction, as well as promoting active and healthy ageing (Chen & Schulz, 2016; Díaz-Prieto & García-Sánchez, 2016; Khosravi & Ghapanchi, 2016). However, most of these studies have used these tools and technologies as a means to achieve these goals, and such findings are therefore not surprising given the original objectives. In contrast, few studies have analysed the overall impact of the Internet and Web 2.0 applications on psychosocial and emotional factors without mediating other aspects, and even fewer have focused on older adults (Orús et al., 2016), the subject of the present study.

The largest gap in our knowledge concerns the lack of research on the possible existence of differences in the psychological profiles of Web 2.0 tool users, which would undoubtedly influence both usage patterns and perceived benefits. The few studies that have addressed this question have mainly focused on analysing psychological traits that can lead to pathological use of the Internet and some tools such as social networks, or to becoming the victim of some of the dangers inherent in the Internet. Once again, older adults have been overlooked in these studies. Attention is thus largely directed towards negative aspects, and rarely towards the positive use that could be made of knowledge of these patterns. For example, a study on adolescents found that subjects presenting depressive symptomatology were more prone to becoming the target of cyber bullying (Ybarra & Mitchell, 2004). In the same vein, Kokkinos, Antoniadou, and Markos (2014) determined the psychological profiles of stalker and victim in cases of cyber bullying, and found that victims obtained higher scores for empathy whereas stalkers obtained higher scores for insensitivity, lack of emotion, impulsiveness, irresponsibility, depression and lack of social skills. Other studies have reported relationships between problematic Internet use and factors such as perceived loneliness, poor social skills, emotional, psychological and behavioural problems, lack of self-control strategies, some socio-demographic factors and problems with self-esteem (Blinka et al., 2015; Carbonell et al., 2012; Cho, Sung, Shin, Lim, & Shin, 2013; Kim, LaRose, & Peng, 2009; Rial, Golpe, Gómez & Barreiro, 2015).

In short, evidence on other aspects is still lacking. Consequently, the research question that guided this study was: is there a relationship between the use of Web 2.0 tools and psychosocial, emotional and active ageing factors? To answer this question, we sought (objectives) to obtain three types of evidence. First, to determine patterns of Internet and Web 2.0 tool use among older adults. Second, to analyse the perceived benefits derived from such use. Third, to determine differential patterns in the psychological profiles and characteristics of users of these tools.

2. Method

2.1. Participants

A representative sample was obtained from various institutions, organisations, centres and university programmes for older adults

in various regions in Spain. All subjects gave their informed consent to participate in this study (Table 1). An online questionnaire was administered to 464 Spanish people aged 55 or older, of whom 454 people responded. Of these, 191 were men and 263 women. The selection criteria were: (i) people aged 55 or older; (ii) voluntary participation; and (iii) people who possessed a basic knowledge of computers and Internet use.

2.2. Instrument and measurements

The Internet and Older Adults (INOA) questionnaire consisted of three distinct parts. The first included a number of items related to socio-demographic data: *sex, age, marital status, country, place of birth, place of residence, educational level, employment status, occupation, economic level and indicator of independent living*. The second part (INOA-Internet) included eight categories specifically related to use of computers, the Internet and Web 2.0 tools, namely: *information and general knowledge about computers and the Internet; use of social, emotional or instrumental Web 2.0 tools selected for the study (see Results); general and specific training; frequency, place and purpose of use; barriers to accessibility and usability and perceived benefits of Internet use*. The design of the third and final section (INOA-psychological) was based on the review and adaptation of several questionnaires, including the Scale of Social Support Networks for Older Adults (ERASAM; Mendoza-Núñez & Martínez-Maldonado, 2009), the Expectations of Self-Efficacy to Perform Activities of Daily Living in Older Adults Instrument (AeRAC; González-Celis, 2009) and the McMaster Quality Of Life Scale (MQOL; Sterkenburg, Wodward & King, 1996). This section assessed various psychosocial and emotional indicators, namely: *self-efficacy in active ageing, emotional intelligence, achievement motivation, the social dimension and coping*. The instrument demonstrated satisfactory theoretical and construct reliability and validity. The INOA-Internet and INOA-psychological sections obtained a Cronbach's alpha of 0.845 and 0.826, respectively. A factorial analysis with standard varimax rotation showed that 52.47% and 48.195%, respectively, of the variance was explained, with saturation of the instrument structure (eight and five factors, respectively). The questionnaire was designed using Google Docs and administered online.

2.3. Design and procedure

The questionnaire was designed following a review of instruments used in various national and international studies. Once the questionnaires had been designed and the type of sample selected, a pilot study was conducted with two groups of participants in workshops on new technologies held in León (Spain), in order to determine the time required for questionnaire completion, to delete or modify ambiguous items and to identify any problems or difficulties that might arise during questionnaire completion. Then, we contacted potential participants by various means, including posters and direct, telephone and Internet contact, to inform them of the purpose of the study and request their participation. Subjects gave their informed consent to participate in the study, in line with the ethical and professional rules of conduct

Table 1
Distribution of participants by gender and age (n = 454).

	55–60	61–65	66–70	71–75	>76	Total
Male	26	58	59	32	16	191
Females	57	93	70	30	13	263
Total	83	151	129	62	29	454

applicable to all scientific research. They completed the questionnaire independently, when and where they wished. Questionnaire completion required a maximum of 30–35 min.

Once the questionnaires had been completed, data were extracted and coded in Excel prior to statistical analysis.

2.4. Statistical analysis

Descriptive analyses were performed (tables of frequencies and percentages, means and standard deviations). Normal distribution of the variables was determined by calculating skewness and kurtosis. To detect differential patterns, we performed multivariate analyses based on general linear models (GLM), using the IBM statistical software package SPSS Statistics 21.0.

3. Results

3.1. Differential patterns in use of the Internet and Web 2.0 tools

We found statistically significant results for all grouping variables considered, with large effect sizes: (i) sex [λ Wilks = 0.407; $F_{(168, 271)} = 2.355$; $p \leq 0.001$; $\eta^2 = 0.593$] (Table 2); (ii) age [λ Wilks = 0.084; $F_{(672, 1086)} = 1.386$; $p \leq 0.001$; $\eta^2 = 0.461$] (Table 3); and (iii) educational level [λ Wilks = 0.106; $F_{(498, 801)} = 1.793$; $p \leq 0.001$; $\eta^2 = 0.527$] (Table 4).

In general, the results agreed with those obtained in other studies on this subject. Almost half of the participants reported possessing sufficient knowledge about computers and the Internet, although fewer than 40% of participants reported having received sufficient training for use. The main learning pathways identified were independent learning, followed by help from family and friends, and in some cases such as office automation tools and email, training courses. As age increased, knowledge about computers and the Internet decreased. Conversely, increasing levels of education were accompanied by an increase in such knowledge.

Email, browsers and search engines were the most frequently used type of tool, with educational tools located at the other extreme (Fig. 1). We observed a marked tendency among males to make greater use of instrumental tools [e.g. Functional tools, $M_{\text{male}} = 4.73$ versus $M_{\text{female}} = 4.47$; $p = < 0.003$]. Furthermore, males not only used these more than females, but did so with greater frequency [e.g. Functional tools, $M_{\text{male}} = 2.92$ versus $M_{\text{female}} = 2.69$; $p = < 0.005$]. Once again, age and educational level exerted an impact on patterns of use. Thus, as age increased or educational level decreased, use and frequency of use of Web 2.0

tools decreased [e.g. Frequency social networks, $M_{55-60} = 4.09$ versus $M_{76 \text{ or more}} = 2.29$; $p = < 0.001$].

Regardless of the type of tool in question, the preferred place of use was the home. The main purposes of use were clearly leisure and entertainment, communication and information, although differences emerged depending on the type of tool.

Fig. 2 shows the main barriers to Internet accessibility and usability reported by older adults. The category “Others” included reasons related to lack of interest, limited suitability for their needs, no perception of potential benefits and concerns related to privacy. We also found differences according to age. The 55–60 and 66–70 age groups highlighted the complexity and poor usability of existing tools as being the main barrier, whereas the other age groups referred to the lack of availability of technological means.

With regard to the perceived benefits arising from Internet use, the main differences detected were related to age and educational level. Although the trends were not marked, the oldest age group reported more benefits, especially on a social level and in relation to self-esteem [e.g. Benefits self-esteem, $M_{55-60} = 4.31$ versus $M_{76 \text{ or more}} = 5.25$; $p = < 0.001$]. In the latter case, participants with the highest educational level reported greater benefits as regards social participation.

3.2. Differential patterns in the psychological profile of users and non-users of social or emotional applications and perceived benefits

An analysis of social or emotional application use revealed statistically significant differences for all grouping variables considered, with large effect sizes (Table 5): (i) use of communication tools [λ Wilks = 0.125; $F_{(166, 279)} = 11.747$; $p \leq 0.001$; $\eta^2 = 0.875$]; (ii) use of social networks [λ Wilks = 0.151; $F_{(166, 279)} = 9.414$; $p \leq 0.001$; $\eta^2 = 0.849$]; (iii) use of email [λ Wilks = 0.440; $F_{(166, 279)} = 2.143$; $p \leq 0.001$; $\eta^2 = 0.560$]; (iv) use of image and sound tools [λ Wilks = 0.147; $F_{(166, 279)} = 9.747$; $p \leq 0.001$; $\eta^2 = 0.853$]; and (v) use of apps [λ Wilks = 0.184; $F_{(165, 276)} = 7.433$; $p \leq 0.001$; $\eta^2 = 0.816$].

As regards use of communication tools, participants reported benefits in relation to autonomy and motivation when undertaking new projects and learning (e.g. Benefits autonomy, $M_{\text{users}} = 5.005$ versus $M_{\text{non-users}} = 4.136$, $p = 0.004$). There also appeared to be differential patterns of use between users and non-users of these applications in relation to various self-efficacy in active ageing variables (autonomy, participation in educational and recreational activities and general self-efficacy in active ageing). We detected greater use of active coping strategies among communication tool

Table 2
Statistically significant results for the grouping variable of sex.

Variables	Male		Female		F	p	η^2
	M	σ	M	σ			
Employment status	1.295	1.048	1.837	1.630	7.813	0.005	0.018
Economic level	4.463	1.211	3.488	1.276	45.790	0.001	0.095
Independent living	10.911	4.947	9.353	6.694	5.730	0.017	0.013
Use of browsers and search engines	5.001	0.001	4.922	0.553	6.914	0.009	0.016
Use of email	5.001	0.001	4.938	0.495	7.831	0.005	0.018
Use of functional tools	4.726	1.013	4.473	1.356	8.802	0.003	0.020
Use of office automation tools	4.789	0.896	4.628	1.164	6.584	0.011	0.015
Use of tools for selecting, classifying and sharing information	1.968	1.718	1.527	1.356	7.779	0.006	0.017
Training received about email	11.605	6.581	13.407	6.332	5.999	0.015	0.014
Frequency of use of communication tools	3.837	1.380	4.314	1.281	4.773	0.029	0.011
Frequency of use of browsers and search engines	4.605	0.815	4.481	0.896	4.059	0.045	0.009
Frequency of use of functional tools	2.921	0.925	2.694	0.996	7.899	0.005	0.018
Frequency of use of office automation tools	3.732	1.121	3.326	1.249	11.926	0.001	0.027
Frequency of use of tools for selecting, classifying and sharing information	1.463	0.912	1.244	0.705	8.104	0.005	0.018
Purpose of use of communication tools	8.221	3.623	8.225	3.456	7.770	0.006	0.017

Table 3
Statistically significant results for the grouping variable of age.

Variables	55–60		61–65		66–70		71–75		76 or older		F	p	η^2
	M	σ	M	σ	M	σ	M	σ	M	σ			
Employment status	2.805	2.003	1.662	1.492	1.094	0.61	1.067	0.516	1.286	1.049	19.438	0.001	0.151
Independent living	12.988	6.288	10.258	6.202	8.52	5.595	8.767	5.607	9.429	4.367	7.733	0.001	0.066
General knowledge about computers	5.439	1.067	5.013	0.931	5.197	0.968	5.001	0.864	4.929	0.813	4.697	0.001	0.041
General knowledge about the internet	5.415	0.955	5.007	0.868	5.102	0.958	5.001	0.902	4.786	0.787	5.35	0.001	0.047
Use of communication tools	4.854	0.756	4.788	0.899	4.559	1.258	4.201	1.614	4.001	1.764	5.514	0.001	0.048
Use of social networks	4.561	1.258	3.464	1.952	3.803	1.839	4.001	1.747	2.857	2.032	6.435	0.001	0.056
Use of cloud tools	3.78	1.853	2.589	1.964	2.543	1.955	2.801	2.007	2.143	1.84	6.518	0.001	0.056
Use of functional tools	4.902	0.621	4.656	1.126	4.433	1.401	4.401	1.44	4.286	1.56	3.121	0.015	0.028
Use of office automation tools	4.61	1.194	4.762	0.95	4.811	0.852	4.667	1.115	4.143	1.671	2.971	0.019	0.026
Use of apps	4.024	1.728	3.755	1.858	3.646	1.901	3.267	1.999	2.714	2.016	3.854	0.004	0.034
Training received about cloud tools	7.927	6.711	5.245	6.501	4.787	6.215	5.901	7.066	5.001	7.252	2.400	0.049	0.021
Frequency of use of social networks	4.085	1.39	2.940	1.729	3.173	1.658	3.317	1.513	2.286	1.63	8.590	0.001	0.073
Frequency of use of browsers and search engines	4.756	0.557	4.596	0.818	4.457	0.949	4.417	0.869	4.143	1.208	3.826	0.005	0.034
Frequency of use of cloud tools	2.671	1.334	1.801	1.137	1.882	1.27	1.967	1.235	1.714	1.243	6.734	0.001	0.058
Frequency of use of functional tools	3.122	0.908	2.781	0.908	2.693	0.98	2.633	1.057	2.643	1.096	3.611	0.007	0.032
Frequency of use of educational tools	1.573	1.197	1.298	0.691	1.213	0.741	1.45	0.999	1.143	0.591	2.661	0.032	0.024
Frequency of use of tools for selecting, classifying and sharing information	1.598	1.087	1.265	0.66	1.244	0.698	1.417	0.926	1.214	0.568	3.318	0.011	0.029
Frequency of use of apps	3.744	1.741	3.007	1.663	2.929	1.59	2.75	1.714	2.357	1.726	6.542	0.001	0.056
Place of use of social networks	5.232	3.951	3.629	2.542	4.158	3.325	4.417	3.038	3.214	3.047	3.162	0.014	0.028
Place of use of browsers and search engines	6.28	4.636	5.172	1.553	4.945	0.759	5.267	1.894	4.857	0.756	2.348	0.054	0.021
Place of use of cloud tools	4.756	4.963	2.695	2.408	2.661	2.32	2.983	2.684	2.679	3.821	4.928	0.001	0.043
Purpose of use of social networks	7.244	4.276	5.55	5.038	6.598	4.636	7.333	5.769	5.536	5.953	2.542	0.039	0.023
Purpose of use of cloud tools	9.451	8.535	4.848	6.655	6.126	7.644	6.233	7.482	5.893	8.439	3.953	0.004	0.035
Barriers to accessibility and usability	16.354	7.707	14.748	8.243	16.205	7.373	14.35	8.423	11.143	9.2	2.879	0.023	0.026
Benefits health	4.073	1.313	3.722	1.406	3.795	1.514	4.267	1.561	4.25	1.602	2.528	0.040	0.023
Benefits mood	4.012	1.281	4.093	1.348	3.937	1.463	4.401	1.564	4.75	1.456	2.681	0.031	0.024
Benefits social network	4.573	1.516	4.291	1.403	4.362	1.557	4.883	1.648	5.107	1.548	2.920	0.021	0.026
Benefits self-esteem	4.305	1.394	4.252	1.507	4.244	1.526	4.983	1.672	5.25	1.404	5.313	0.001	0.046

users, and less use of coping strategies involving resignation, self-criticism or religion (e.g. Coping religion, $M_{\text{users}} = 2.225$ versus $M_{\text{non-users}} = 3.114$, $p = 0.001$).

Among users of social networks, the main perceived benefits were social (e.g. Benefits social, $M_{\text{users}} = 4.770$ versus $M_{\text{non-users}} = 3.852$, $p = 0.001$). We also observed differential patterns among users and non-users of these tools in variables related to self-efficacy, the social dimension and coping. Thus, for example, social network users seemed to possess better socio-communicative skills than non-users (e.g. Social dimension socio-communicative skills, $M_{\text{users}} = 5.754$ versus $M_{\text{non-users}} = 5.370$, $p = .011$).

The main benefits perceived by email users included greater participation in social activities, a wider social network and higher self-esteem and motivation when undertaking new projects and learning (e.g. Social dimension socio-communicative skills, $M_{\text{users}} = 5.754$ versus $M_{\text{non-users}} = 5.370$, $p = .011$). The differential patterns found indicated that older adults who used email presented higher levels of self-efficacy in autonomy and for participation in tourism and training activities, and in general showed higher levels of self-efficacy in relation to activities and variables that promote active ageing (e.g. Self-efficacy autonomy, $M_{\text{users}} = 5.894$ versus $M_{\text{non-users}} = 3.250$, $p = 0.001$). They also appeared to possess a greater capacity to identify their own

Table 4
Statistically significant results for the grouping variable of educational level.

Variables	Elementary school		Secondary school		Higher education		F	p	η^2
	M	σ	M	σ	M	σ			
Occupation	13.489	12.293	15.453	8.686	19.181	7.627	4.562	0.004	0.031
Economic level	2.933	1.053	3.528	1.252	4.317	1.274	4.157	0.006	0.028
General knowledge about computers	4.333	0.977	5.088	0.889	5.321	0.929	3.215	0.023	0.022
General knowledge about the internet	4.378	0.936	5.025	0.893	5.276	0.869	3.581	0.014	0.024
Use of communication tools	3.756	1.873	4.748	0.974	4.671	1.102	4.016	0.008	0.027
Use of browsers and search engines	4.822	0.834	4.95	0.447	4.984	0.257	3.363	0.019	0.023
Use of email	4.733	1.009	5.001	0.001	5.001	0.001	196.837	0.001	0.578
Use of functional tools	3.844	1.834	4.572	1.24	4.737	0.994	8.001	0.001	0.053
Use of office automation tools	3.933	1.789	4.623	1.173	4.901	0.622	11.112	0.001	0.072
Use of apps	2.778	2.010	3.616	1.909	3.831	1.823	4.078	0.007	0.028
General training received about computing	3.622	1.193	4.233	1.239	4.407	1.392	2.761	0.042	0.019
Frequency of use of communication tools	3.401	1.789	4.157	1.199	4.206	1.301	4.168	0.006	0.028
Frequency of use of email	4.001	1.187	4.547	0.718	4.749	0.622	18.279	0.001	0.113
Frequency of use of functional tools	2.222	1.064	2.723	0.920	2.947	0.941	5.040	0.002	0.034
Frequency of use of office automation tools	2.644	1.228	3.302	1.205	3.794	1.102	4.840	0.003	0.033
Frequency of use of apps	2.311	1.593	2.943	1.662	3.255	1.706	3.988	0.008	0.027
Purpose of use of email	8.289	2.865	10.094	3.666	9.712	3.328	6.193	0.001	0.041
Purpose of use of office automation tools	11.933	95.093	15.786	9.077	16.856	8.311	3.839	0.010	0.026
Benefits social participation	3.756	1.734	4.610	1.513	4.621	1.581	2.952	0.032	0.020

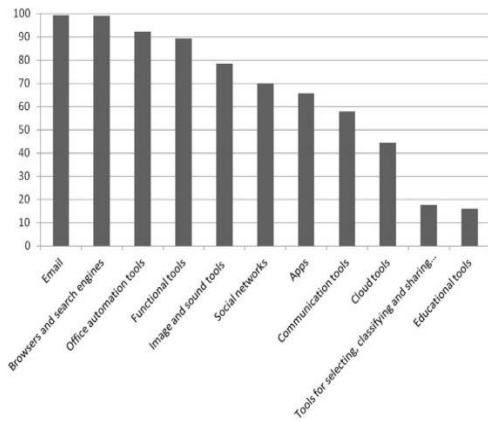


Fig. 1. Percentage of use of Web 2.0 tools by older adults.

emotions, although they also presented less empathy (e.g. Emotional Intelligence empathy, $M_{users} = 3.475$ versus $M_{non-users} = 6.001$, $p = 0.001$). In relation to coping strategies, they seemed to make greater use than non-users of positive reformulation and acceptance strategies (e.g. Coping positive reformulation, $M_{users} = 4.658$ versus $M_{non-users} = 3.001$, $p = 0.010$).

For *image and sound tools*, users perceived benefits in relation to social participation ($M_{users} = 4.632$ versus $M_{non-users} = 4.137$, $p = 0.021$), and we found relationships between the use of these tools and greater self-efficacy in autonomy and less perceived loneliness (e.g. Social dimension loneliness, $M_{users} = 5.643$ versus $M_{non-users} = 5.116$, $p = 0.002$).

For the last type of application included within this category, *Apps*, users perceived benefits in relation to participation, mood, self-esteem and motivation (e.g. Benefits mood, $M_{users} = 4.236$ versus $M_{non-users} = 3.882$, $p = 0.034$). The main differences between users and non-users were related to self-efficacy in active ageing and the social dimension (e.g. Self-Efficacy recreational activities, $M_{users} = 6.443$ versus $M_{non-users} = 5.816$, $p = 0.004$).

3.3. Differential patterns in the psychological profile of users and non-users of instrumental applications and perceived benefits

An analysis of instrumental application use also revealed statistically significant differences for all grouping variables considered, with large effect sizes (Table 6): (i) *use of browsers and search engines* [$\lambda Wilks = 0.457$; $F(166,279) = 1.999$; $p \leq 0.001$; $\eta^2 = 0.543$];

(ii) *use of cloud tools* [$\lambda Wilks = 0.139$; $F(166,279) = 10.406$; $p \leq 0.001$; $\eta^2 = 0.861$]; (iii) *use of functional tools* [$\lambda Wilks = 0.219$; $F(166,279) = 5.990$; $p \leq 0.001$; $\eta^2 = 0.781$]; (iv) *use of educational tools* [$\lambda Wilks = 0.062$; $F(165,276) = 25.448$; $p \leq 0.001$; $\eta^2 = 0.938$]; (v) *use of tools for selecting, classifying and sharing information* [$\lambda Wilks = 0.097$; $F(165,276) = 15.535$; $p \leq 0.001$; $\eta^2 = 0.903$]; and (vi) *use of office automation tools* [$\lambda Wilks = 0.204$; $F(166,279) = 6.551$; $p \leq 0.001$; $\eta^2 = 0.796$].

The main benefits perceived by users of *browsers and search engines* were related to autonomy, physical and mental health, mood and motivation (e.g. Benefits health, $M_{users} = 3.923$ versus $M_{non-users} = 3.001$, $p = 0.006$). We also found differential patterns in relation to psychosocial and emotional variables that indicated greater self-efficacy in autonomy, better emotional expression and self-control skills, higher intrinsic motivation and lower perception of loneliness among users of such tools as well as less use of resignation as a coping strategy (e.g. Emotional Intelligence self-control, $M_{users} = 4.167$ versus $M_{non-users} = 3.601$, $p = 0.018$).

As regards use of *cloud tools*, users perceived greater benefits in relation to self-esteem and motivation when undertaking new projects and learning (e.g. Benefits motivation, $M_{users} = 5.015$ versus $M_{non-users} = 4.239$, $p = 0.012$). We also found differential patterns in relation to self-efficacy, emotional intelligence, the social dimension and coping. Thus, for example, users of these applications presented higher levels of self-efficacy in autonomy or possessed wider social networks (e.g. Social dimension size, $M_{users} = 5.234$ versus $M_{non-users} = 4.830$, $p = 0.002$).

As regards *functional tools*, we observed differential patterns in variables related to the social dimension and coping strategies. In particular, we found less development of socio-communicative skills and a lower perception of emotional support (e.g. Social dimension emotional support, $M_{users} = 5.781$ versus $M_{non-users} = 6.085$, $p = 0.036$). Similarly, we found that users made less use of coping strategies based on emotional support, self-criticism, religion and resignation (e.g. Coping resignation, $M_{users} = 1.706$ versus $M_{non-users} = 2.319$, $p = 0.014$).

Users and non-users of *educational tools* also presented differential patterns related to variables of self-efficacy, emotional intelligence, the social dimension and coping, whereby users showed greater self-efficacy for participation in leisure and volunteering activities, as well as better emotional skills, especially in terms of identifying their own emotions, emotional self-control and empathy. They also obtained higher scores on the scale that assessed the social dimension, and more specifically, in the perception of emotional support, and made greater use of coping strategies based on seeking emotional support (e.g. Social dimension emotional support, $M_{users} = 6.001$ versus $M_{non-users} = 5.777$,

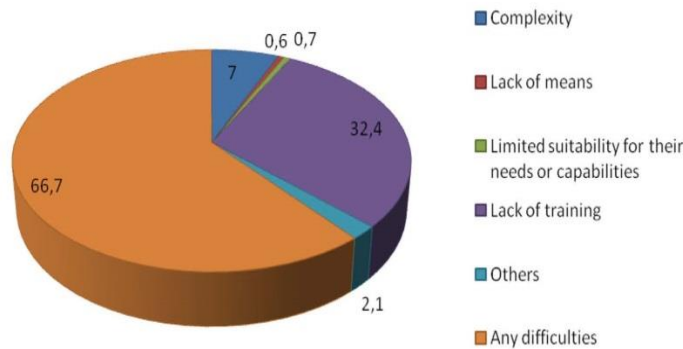


Fig. 2. Main barriers to Internet access and use reported by older adults.

Table 5
Differential patterns among users and non-users of social or emotional Web 2.0 applications.

Variables	Yes		No		F	p	η^2
	M	σ	M	σ			
Use of communication tools							
Benefits autonomy	5.005	1.669	4.136	1.679	8.249	0.004	0.018
Benefits motivation	4.785	1.427	4.136	1.608	4.557	0.033	0.010
Self-efficacy autonomy	5.950	1.223	5.136	1.534	14.323	0.001	0.031
Self-efficacy training activities	6.441	1.086	6.023	1.607	4.353	0.038	0.010
Self-efficacy recreational activities	6.290	1.313	5.682	1.749	6.958	0.009	0.015
Self-efficacy total	42.814	7.485	39.591	8.665	5.151	0.024	0.011
Active coping	5.079	1.334	4.523	1.548	4.247	0.040	0.009
Coping resignation	1.708	1.049	2.341	1.493	12.405	0.001	0.027
Coping self-criticism	2.203	1.153	2.591	1.436	4.321	0.038	0.010
Coping religion	2.225	1.673	3.114	2.014	13.927	0.001	0.030
Use of social networks							
Benefits social network	4.770	1.409	3.852	1.595	12.684	0.001	0.028
Self-efficacy volunteering	5.728	1.53	5.156	1.753	6.674	0.010	0.015
Social dimension Size	5.131	1.396	4.733	1.502	4.281	0.039	0.010
Social dimension socio-communicative skills	5.754	1.083	5.370	1.084	6.494	0.011	0.014
Social dimension total	45.383	6.064	42.993	6.768	4.789	0.029	0.011
Active coping	5.121	1.374	4.801	1.320	7.337	0.007	0.016
Coping religion	2.377	1.777	2.163	1.603	8.156	0.004	0.018
Use of email							
Benefits social participation	4.547	1.579	2.250	1.501	6.686	0.010	0.015
Benefits social network	4.518	1.505	1.750	1.501	11.947	0.001	0.026
Benefit self-esteem	4.444	1.519	1.750	1.501	10.194	0.002	0.022
Benefits motivation	4.743	1.439	2.250	1.501	6.553	0.011	0.015
Self-efficacy autonomy	5.894	1.241	3.250	2.630	14.005	0.001	0.031
Self-efficacy tourism activities	6.367	1.182	4.501	2.887	9.842	0.002	0.022
Self-efficacy training activities	6.410	1.14	5.250	2.062	4.783	0.029	0.011
Self-efficacy total	42.574	7.562	34.001	14.071	4.581	0.033	0.010
Emotional intelligence identify their own emotions	5.624	1.273	4.501	1.732	6.028	0.014	0.013
Emotional intelligence empathy	3.475	1.402	6.001	0.817	11.636	0.001	0.026
Coping positive reformulation	4.658	1.564	3.001	1.155	6.636	0.010	0.015
Coping acceptance	4.836	1.52	3.001	1.633	6.533	0.011	0.015
Use of image and sound tools							
Benefits social participation	4.632	1.588	4.137	1.548	5.337	0.021	0.012
Self-efficacy autonomy	6.014	1.091	5.337	1.717	6.393	0.012	0.014
Social dimension loneliness	5.643	1.356	5.116	1.786	10.004	0.002	0.022
Use of apps							
Benefits social participation	4.726	1.526	4.138	1.648	5.196	0.023	0.012
Benefits mood	4.236	1.414	3.882	1.4	4.542	0.034	0.010
Benefit self-esteem	4.527	1.440	4.211	1.698	4.039	0.045	0.009
Benefits motivation	4.855	1.396	4.461	1.539	4.991	0.026	0.011
Self-efficacy self-care	6.578	0.840	6.145	1.304	6.473	0.011	0.014
Self-efficacy recreational activities	6.443	1.148	5.816	1.654	8.265	0.004	0.018
Self-efficacy total	43.831	6.676	39.901	8.734	4.904	0.027	0.011
Social dimension instrumental support	5.615	1.182	5.382	1.307	4.146	0.042	0.009

$p = 0.002$).

We again found differences between users and non-users of tools for selecting, classifying and sharing information. Thus, for example, users presented higher levels of self-efficacy in autonomy, for participation in tourism and training activities and in general, greater self-efficacy in activities or variables related to active ageing (e.g. Self-Efficacy autonomy, $M_{users} = 6.363$ versus $M_{non-users} = 5.764$, $p = 0.029$). In addition, they possessed a greater capacity for emotional self-control and made greater use of coping strategies based on planning (e.g. Coping planning, $M_{users} = 5.325$ versus $M_{non-users} = 4.867$, $p = 0.026$).

Lastly, participants who reported using office automation tools perceived greater social and participation-related benefits (e.g. Benefits social, $M_{users} = 4.543$ versus $M_{non-users} = 3.882$, $p = 0.009$). Differential patterns were also observed in relation to variables of self-efficacy, emotional intelligence, motivation, the social dimension and coping. In terms of self-efficacy variables, users showed greater self-efficacy in autonomy, as well as for participation in educational, recreational and tourism activities, for participation in civic and volunteer work and, in general, showed higher levels of self-efficacy in active ageing (e.g. Total Self-Efficacy, $M_{users} = 42.882$

versus $M_{non-users} = 37.824$, $p = 0.001$). As regards emotional intelligence, users of these tools showed less empathy and greater achievement motivation, with a predominance of extrinsic motivation (e.g. Emotional Intelligence empathy $M_{users} = 3.449$ versus $M_{non-users} = 4.088$, $p = 0.002$). They also reported less perceived loneliness and less use of coping strategies based on self-distraction (e.g. Coping self-distraction, $M_{users} = 2.795$ versus $M_{non-users} = 3.529$, $p = 0.006$).

4. Discussion

The study objectives have been achieved. Our results confirm the existence of differential patterns in older adults' use of the Internet, computers and Web 2.0 tools according to sex, age and educational level. Users reported benefits in relation to several psychosocial and emotional variables that influence quality of life, with differences according to age, educational level and type of tool. We also found differential patterns in the psychological profile of users of these tools.

In line with the structure of the preceding sections, the discussion will also be presented according to the study objectives.

Table 6
Differential patterns among users and non-users of instrumental Web 2.0 applications.

Variables	Sí		No		F	p	η^2
	M	σ	M	σ			
Use of browsers and search engines							
Benefits autonomy	4.939	1.68	3.201	1.643	4.826	0.029	0.011
Benefits health	3.923	1.455	3.001	2.121	7.489	0.006	0.017
Benefits mood	4.126	1.407	3.201	2.168	5.947	0.015	0.013
Benefits motivation	4.743	1.442	2.801	1.643	3.831	0.051	0.009
Self-efficacy autonomy	5.889	1.249	4.201	2.588	5.544	0.019	0.012
Emotional intelligence emotional expression	4.271	1.423	3.201	0.837	4.374	0.037	0.010
Emotional intelligence self-control	4.167	1.278	3.601	0.548	5.687	0.018	0.013
Intrinsic motivation	5.074	1.291	4.401	1.673	4.719	0.030	0.011
Social dimension loneliness	5.524	1.473	6.201	1.304	4.177	0.042	0.009
Coping resignation	1.752	1.094	3.401	1.817	5.223	0.023	0.012
Use of cloud tools							
Benefits self-esteem	4.642	1.411	4.239	1.614	4.475	0.035	0.010
Benefits motivation	5.015	1.34	4.482	1.506	6.408	0.012	0.014
Self-efficacy Autonomy	6.119	1.089	5.668	1.383	11.837	0.001	0.026
Self-efficacy self-care	6.493	0.917	6.381	1.130	4.151	0.042	0.009
Self-efficacy training activities	6.507	0.965	6.312	1.28	4.044	0.045	0.009
Self-efficacy recreational activities	6.373	1.202	6.113	1.488	4.760	0.030	0.011
Self-efficacy citizen participation activities	5.831	1.490	5.522	1.689	5.225	0.023	0.012
Self-efficacy total	43.527	6.855	4.166	8.174	7.176	0.008	0.016
Emotional intelligence self-control	4.368	1.259	3.992	1.262	6.569	0.011	0.015
Emotional intelligence total	32.508	5.881	30.964	5.710	3.948	0.048	0.009
Social dimension size	5.234	1.330	4.830	1.499	9.790	0.002	0.022
Social dimension frequency	6.001	0.922	5.713	1.145	9.054	0.003	0.020
Social dimension socio-communicative skills	5.801	1.005	5.506	1.151	11.084	0.001	0.024
Social dimension instrumental support	5.756	1.08	5.356	1.314	3.907	0.049	0.009
Social dimension satisfaction	5.930	0.869	5.607	1.049	6.674	0.010	0.015
Social dimension total	46.159	5.626	43.445	6.688	9.788	0.002	0.022
Coping planning	5.164	1.359	4.773	1.369	5.750	0.017	0.013
Coping self-criticism	2.045	1.083	2.401	1.245	13.653	0.001	0.030
Coping positive reformulation	4.871	1.56	4.457	1.553	7.645	0.006	0.017
Use of functional tools							
Social dimension socio-communicative skills	5.626	1.113	5.745	0.943	3.876	0.050	0.009
Social dimension emotional support	5.781	1.154	6.085	0.996	4.439	0.036	0.010
Coping emotional support	3.990	1.411	4.362	1.405	4.785	0.029	0.011
Coping resignation	1.706	1.085	2.319	1.218	6.133	0.014	0.014
Coping self-criticism	2.180	1.165	2.766	1.255	4.371	0.037	0.010
Coping religion	2.219	1.663	3.106	2.056	10.036	0.002	0.022
Use of educational tools							
Self-efficacy recreational activities	6.417	0.975	6.194	1.434	5.703	0.017	0.013
Self-efficacy volunteering	5.917	1.451	5.487	1.643	4.232	0.040	0.010
Emotional intelligence identify their own emotions	5.917	1.196	5.556	1.289	4.799	0.029	0.011
Emotional intelligence Self-control	4.458	1.21	4.104	1.279	4.108	0.043	0.009
Emotional intelligence empathy	3.639	1.466	3.471	1.408	3.914	0.049	0.009
Emotional intelligence total	32.708	5.298	31.455	5.913	4.228	0.040	0.010
Social dimension emotional support	6.001	0.888	5.777	1.181	9.734	0.002	0.022
Social dimension total	45.208	6.189	44.559	6.409	6.123	0.014	0.014
Coping emotional support	4.181	1.447	4.001	1.407	5.213	0.023	0.012
Use of tools for selecting, classifying and sharing information							
Self-efficacy autonomy	6.363	0.904	5.764	1.323	4.799	0.029	0.011
Self-efficacy tourism activities	6.701	0.701	6.274	1.286	4.075	0.044	0.009
Self-efficacy training activities	6.738	0.775	6.326	1.207	4.067	0.044	0.009
Self-efficacy Total	45.013	5.157	41.951	8.003	4.046	0.045	0.009
Emotional intelligence self-control	45.13	1.253	4.084	1.266	3.931	0.048	0.009
coping planning	5.325	1.329	4.867	1.376	4.965	0.026	0.011
Use of office automation tools							
Benefits social participation	4.599	1.554	3.647	1.790	5.772	0.017	0.013
Benefits social network	4.543	1.469	3.882	2.027	6.819	0.009	0.015
Self-efficacy autonomy	5.928	1.211	5.176	1.801	7.889	0.005	0.017
Self-efficacy tourism activities	6.399	1.134	5.765	1.86	8.298	0.004	0.018
Self-efficacy training activities	6.461	1.033	5.647	1.998	11.094	0.001	0.024
Self-efficacy recreational activities	6.290	1.277	5.501	2.121	7.742	0.006	0.017
Self-efficacy citizen participation activities	5.737	1.538	4.735	2.122	10.754	0.001	0.024
Self-efficacy volunteering	5.611	1.564	4.882	2.101	5.110	0.024	0.011
Self-efficacy total	42.882	7.215	37.824	10.898	10.855	0.001	0.024
Emotional intelligence empathy	3.449	13.90	40.88	1.621	9.434	0.002	0.021
Extrinsic motivation	5.524	1.236	5.059	1.594	5.721	0.017	0.013
Motivation total	15.614	2.443	14.706	2.493	6.387	0.012	0.014
Social dimension loneliness	5.580	1.430	4.941	1.825	4.004	0.046	0.009
Coping self-distraction	2.795	1.444	3.529	2.004	7.479	0.006	0.017

Prior to an analysis of relationships, it was necessary to determine older adults' patterns of Internet and Web 2.0 tool use. Our results support those reported in previous national and international studies. Older adults appeared to possess a basic knowledge of computers and the Internet which was conditioned by age, educational level and probably the scant training received (Agudo et al., 2012; González et al., 2015; Martínez-Pecino et al., 2013). In general, older adults used email, browsers and office automation tools more than other types of applications such as educational tools, those used for selecting, classifying and sharing information or cloud tools. Such use decreased with age, increased with educational level and varied according to sex. This indicates that older adults are less conditioned by "trends" in use than other age groups, and more by whether the tools will enable them to meet their detected information and entertainment needs, as well as by the potential perceived barriers (Abad, 2014). Surprisingly, more than half of the older users surveyed indicated not perceiving any difficulties in accessing and using the Internet, which may be a result of the increasing promotion in recent years of training programmes. Those who did perceive such barriers highlighted the following: (i) *intrapersonal barriers* (lack of interest, limited suitability for their needs, no perception of potential usefulness or benefits and physical or psychological problems); (ii) *contextual barriers* (lack of training, lack of means or the high cost of the technology); and (iii) *barriers associated with the tools themselves* (concerns about confidentiality and privacy, lack of specific applications and factors related to accessibility and usability determined by tools that were beyond their capabilities) (Kwong, 2015; Lee & Coughlin, 2015).

Although there were no marked trends in the perceived benefits of Internet use, the older age groups appeared to perceive greater benefits, especially on a social level and in relation to self-esteem, while those who possessed a higher educational level obtained greater benefits in relation to social participation. In general, we found that use of these tools had an impact on autonomy, motivation, the social dimension, social participation, mood, self-esteem, and physical and mental health in general. These results confirm those obtained in other studies that have reported a significant effect of Internet use on variables that exert a positive influence on the quality of life and well-being of older adults; however, the present study also specifies the perceived benefits depending on the type of tool, something that will unquestionably offer rich possibilities when using these applications for intervention purposes (Hayes, van Stolk, & Muench, 2015; Lee et al., 2011).

Lastly, we detected differential patterns in the psychological profile of users and non-users of Web 2.0 tools. In general, older users of the tools obtained profiles characterised by higher scores than non-users for active ageing variables. This finding may be related to and could condition use and perceived benefits. Although conducted with other age groups, some studies have already reported finding that some psychological or personality traits conditioned patterns of use of some Web 2.0 tools and the perceived benefits. For example, Buffardi and Campbell (2008) found a relationship between the time users spent on Facebook (more than 1 h a day) on the one hand, and high levels of narcissism and low levels of self-esteem on the other. Sheldon, Abad, and Hinsch (2011) have argued that Facebook users perceive benefits at the level of general connection with the world, and that those who report higher levels of perceived loneliness generally tend to use this application more to combat this feeling. Similarly, Lepp, Li, Barkley, and Salehi-Esfahani (2015) have associated high levels of extraversion, openness and emotional stability with low use of the mobile phone for the purposes of entertainment. This information is interesting for several reasons. For example, it suggests the possibility of adapting these tools to the needs and capacities of

older adults, promoting social integration (Lissitsa & Chachashvili-Bolotin, 2016), and of designing or implementing programmes using these tools that could enhance variables closely related to older adults quality of life.

This study presents a series of limitations that must be taken into consideration. The use of the Google Docs application entailed several limitations derived from the privacy policy itself, the impossibility of establishing a password, technical problems with the tool that obliged the elimination of responses, the limited range of questions, the absence of an exclusion option, and the impossibility of saving responses while completing the questionnaire with the consequent possibility of losing all information entered in the event of losing the connection or an application failure. In general, these difficulties were overcome by the researchers during the design and implementation of the questionnaire and did not affect the results. However, to address these limitations and increase the range of possibilities, it would be interesting to administer the questionnaire through other types of applications such as SurveyMonkey. The difficulties entailed in generalisation should also be noted. Although this study included a representative sample of older adults from various parts of Spain, it may nevertheless be necessary to conduct a comparative study of the different regions in Spain to complement the results obtained here. Similarly, the size of our study sample may have been limited by the need to have access to technological resources. As regards future lines of research, it would be interesting to determine causal relationships, i.e. do users' psychological profiles determine patterns of use? Or conversely, is it the use of these tools that determines these psychological differences?

5. Conclusions

This study highlights older adults' growing interest in accessing the opportunities and benefits offered them by Web 2.0 tools. We detected psychological traits that might favour the adoption of these tools and condition their use and impact. In consequence of the foregoing, we conclude that in order to overcome the present digital divide and promote active ageing and quality of life, more training is required to exploit the possibilities of these tools to the maximum. In turn, this would necessitate greater social and institutional investment in training programmes aimed at achieving the full and participative integration of older adults in the information and knowledge society (Friemel, 2016).

Compliance with ethical standards

During the course of this study, funding was applied for the Spanish Ministry of Economy and Competitiveness (EDU2016-78095-P), by Principal Researcher (J.N. García), competitive project for four years.

Besides, C. Díaz-Prieto received funds through a PhD Fellowship (FPU-MECD REF. 12/04517) for the four-year period 2013–2017. And we received funds from the company BIOGES Starters, S.A., which is associated with the University of León.

Conflict of interest

No conflict exists: The authors declare that they have no conflict of interest.

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**Estudios sobre la
relación entre
experiencias vitales,
prácticas cotidianas,
perfiles psicológicos,
uso de herramientas de
la web 2.0, calidad de
vida y satisfacción
personal**

Estudio 7

The influence of life experiences on perceived quality of life, practices, psychological profiles and use of web 2.0 tools in adults and older adults

Computers in Human Behavior (under review)

Factor de impacto (FI)

JCR (3.435)- Psychology, Multidisciplinary-Q1- Rank 15/128
Psychology, Experimental-Q1- Rank 10/84

FI-5 años (4.252)

SJR (1.646). Arts and Humanities- Q1. Human-Computer Interaction - Q1.
Psychology- Q1

H Index (96)

Cited Half-Life (4.4)

Immediacy index (0.807)

Eigenfactor score (0.02437)

Article influence score (0.788)

ICDS (11.0)

CARHUS Plus+ 2014 (GRUPO A)

Indexada en: Bioengineering Abstracts, COMPENDEX, Cambridge Scientific Abstracts, Computer Publishers & Publications, Current Contents, Current Contents/Social & Behavioral Sciences, Current Index to Journals in Education, Information Science Abstracts, International Bibliography Book Reviews, International Bibliography of Periodical Literature, Library and Information Science Abstracts, EMBASE, Engineering Index, Engineering Meetings, Ergonomics Abstracts, IBZ and IBR, PsycLIT, Psychology Abstracts, SSSA/CISA/ECA/ISMEC, Social Sciences Citation Index, Sociological Abstracts, Software Reviews on File,,World Patent Information, PsycINFO, Scopus, MathEduc

Referencia:

Díaz-Prieto, C. & García-Sánchez, J. N. (under review). The influence of life experiences on perceived quality of life, practices, psychological profiles and use of web 2.0 tools in adults and older adults. *Computers in Human Behavior*

The influence of life experiences on perceived quality of life, practices, psychological profiles and use of web 2.0 tools in adults and older adults

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Universidad de León

Highlights

- We studied the influence of favourable and stressful life experiences
- We obtained differential patterns in perceived quality of life and psychological profiles
- Differences were detected in quality of life practices, including the use of web 2.0 tools
- Together, these variables may promote successful psychological and social interventions that enhance quality of life

Abstract

The aim of this study was to explore the relationship between favourable and stressful life experiences and perceived quality of life, practices that promote quality of life, psychological profiles and the daily use of web 2.0 tools in adults and older adults. We designed an online questionnaire which was administered to 1095 Spanish adults and older adults, and conducted descriptive and multivariate analyses using the general linear model. Our results showed that favourable and stressful life experiences alike were associated with differential patterns in psychological profiles, perceived quality of life and daily activities and practices that affect quality of life, including the use of web 2.0 tools. Favourable life experiences mainly affected psychological profiles and the use of web 2.0 tools, whereas stressful life experiences affected the other factors analysed. These findings have important implications for promoting successful psychological and social interventions.

Keywords: differential patterns; life experiences; quality of life; practices; psychological profiles; web 2.0 tools

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1. Introduction

People's life experiences largely determine who they become. Their psychological profiles, personalities, lifestyles, moods, routines, interests and even identities are partially shaped by the events that have happened in their lives, including the drastic changes that society has witnessed in recent years driven by the technological revolution (El Haj & Antoine, 2017; Bai, 2014). Without a doubt, this revolution has to a large extent been defined by the establishment of the internet and web 2.0 tools as an integral part of our lives and social participation. This has marked a before and after in the way in which we handle information, interact with each other and with the world around us and carry out our daily activities (Díaz-Prieto & García-Sánchez, 2016). Although data are available on the impact of life experiences on psychological profiles, practices and routines, and more generally on life satisfaction, well-being and quality of life in adults and older adults (Thomsen, Steiner & Pillemer, 2016), little is known to date about the relationship between life experiences and the use of web 2.0 tools.

Studies on life experiences have traditionally employed techniques such as reminiscence therapy, a review of life or significant life events, reminiscence writing and life stories, with varying results. While some studies have highlighted the benefits, others have called these into question and have identified potential difficulties. Those that have found benefits include studies suggesting that these interventions exert a positive effect on depressive symptoms, anxiety, loneliness, socialisation, memory and self-esteem, and more generally on physical and mental health, life satisfaction, well-being and quality of life, in both the healthy population and the population affected by a range of psychological, cognitive, affective-emotional, behavioural or social problems (El Haj & Antoine, 2017; Hyams & Scogin, 2015; Latorre et al., 2015; Lopes, Afonso & Ribeiro, 2016; Wren, 2017). However, other studies have indicated the maladaptive effect of reminiscence, whereby experiences may be emphasised in an unhealthy manner or prompt rumination, self-blame and pessimism, and memories of these may undermine happiness, satisfaction and well-being or trigger a series of negative emotions

(Henkel, Kris, Birney & Krauss, 2016; Stikkelbroek, Bodden, Kleinjan, Reijnders & van Baar, 2016). Moreover, most studies have focused on analysing stressful life events, their negative consequences and the coping strategies employed to get over them, especially in the older population (Lasgaard, Armour, Holm & Goossens, 2016; Latorre et al., 2015; Randall, Baldwin, McKenzie-Mohr, McKind & Furlong, 2015). These studies have identified a series of events that negatively affect mental health, well-being and quality of life, including illness, grief, loneliness, social problems, changes of residence and work or financial problems, among many others (Chukwuorji, Nwoke & Ebere, 2017; Donoghue, Traviss-Turner, House, Lewis & Gilbody, 2016). For example, theoretical approaches to solitude have demonstrated that important life events such as the death of a loved one or divorce prompt changes in interpersonal relations, triggering or perpetuating feelings of loneliness (Lasgaard, Armour, Holm & Goossens, 2016). Life experiences thus have a proven impact on psychosocial and emotional profiles and perceived quality of life, although this evidence is mainly based on negative rather than favourable life experiences and their consequences. It therefore seems pertinent to analyse the extent to which favourable life experiences are related to psychological profiles, given their plausible impact on the well-being and quality of life of adults and older adults.

Just as life experiences influence quality of life, it has also been found that various empirical evidence-based practices contribute to its optimisation. Among others, physical exercise, mental activity and self health care have proven effective in enhancing quality of life and promoting active ageing (Foster & Walker, 2015; Hongthong, Somrongthong & Ward, 2015; Kim, Woo & Uysal, 2015; Marcus-Varwijk, 2016). However, the data on how life experiences determine such practices are scant.

Studies have also been conducted on the relationship between life experiences and pathological, but not day-to-day, internet use. An abundance of research exists on the predictors, patterns and benefits of use of this medium in the adult population (Díaz-Prieto & García-Sánchez, 2016; Marston, Kroll, Fink, Rosario & Gschwind, 2016; Spears, Luptak & Wilby, 2015); however, few studies have analysed the impact

of life experiences on use of the internet and web 2.0 tools, and those which have done so, have analysed stressful life events and their impact on problematic internet use, since this medium often serves as a coping, refuge or escape mechanism, being used as a strategy to achieve mental disconnection or seek information and support (Chan, 2015; Li, Zhang, Li, Zhen & Wang, 2010; van Ingen, Utz & Toepoel, 2016). According to these studies, internet addiction is a response to stressful life events that generate psychological stress in individuals who use this medium as a way of coping and regulating negative emotions in the absence of other types of positive coping strategies (Li et al., 2016). Other studies have used the internet as a tool to implement interventions based on a review of life, finding positive effects on depression, well-being, self-esteem and obsessive reminiscence (Preschl et al., 2012). Nevertheless, further research is required to analyse the relationship between favourable as well as stressful life experiences and the use and benefits of web 2.0 tools.

Consequently, the research question that guided the present study was whether a relationship existed between favourable and stressful life experiences and perceived quality of life, practices that promote quality of life, psychological profiles and the daily use of web 2.0 tools in adults and older adults. We expected to find differential patterns in quality of life practices, perceived quality of life, psychological profiles and daily use of web 2.0 tools according to subjects' favourable and stressful life experiences.

2. Method

2.1. Participants

We administered an online assessment instrument to 1095 Spanish adults and older adults (Table 1), 439 of whom were men and 656 women. The sample was recruited through various institutions, organisations, centres, public and private universities and university programmes for older adults throughout Spain. The inclusion criteria were: (i) people aged over 18 years old; (ii) informed consent to participate; (iii) basic digital competence; and (iv) sufficient autonomy to answer assessment instruments themselves.

Table 1*Distribution of participants by age and sex (n=1095)*

	< 55		55-60		61-65		66-70		>70		Total
	N	\bar{X}_{age}	N	\bar{X}_{age}	N	\bar{X}_{age}	N	\bar{X}_{age}	N	\bar{X}_{age}	
Male	176	34	59	58	77	63	75	68	52	76	439
Females	322	33	79	58	100	63	88	68	67	75	656
Total	498		138		177		163		119		1095

2.2. Instrument and variables

We designed the instrument *Practices in Adults and Older Adults* (Spanish acronym: PRAMA) using the *Google Forms* tool, and administered it online. This instrument consists of six scales which measure the following specific variables:

1. PRAMA-DD: this includes a series of items related to sociodemographic data: *sex, age, marital status, place of origin, place of residence, educational level, employment status, occupation, economic level, indicator of independent living and degree of independence.*

2. PRAMA-PQL: this includes 15 items that measure perceived quality of life in fifteen areas of life, namely: *physical health, mood, memory, family, friends, intimate relationships, place of residence, ability to meet basic needs, ability to perform household tasks, ability to perform tasks outside the home, leisure and entertainment, money, occupation, personal satisfaction and life in general.*

3. PRAMA-PRA: this assesses the frequency of performing empirical evidence-based practices that promote quality of life, including: *physical exercise, mental activity, self-care activities, meetings and contact with relatives and friends, intimate relationships, training activities, leisure and social activities, tourist activities and volunteering.*

4. PRAMA-LE: this includes two subscales that measure favourable (LE-FAV) and stressful (LE-STR) life experiences. The subscales share a number of items in common that assess the following aspects: *close circle, stage, description of the most important life event from a small narrative, emotions, affect in the short and medium term and present influence.* In addition, LE-STR includes a question that evaluates the *coping strategies* employed, namely: *acceptance, denial, active, planning, self-distraction, emotional*

support, instrumental support, emotional discharge, resignation, self-criticism, positive reformulation, humour and religion.

5. PRAMA-psychological: this is based on the INMA-psychological scale (Díaz-Prieto & García-Sánchez, 2016), which has shown satisfactory validity and theoretical and construct reliability (Cronbach's $\alpha = 0.826$). It assesses several psychosocial and emotional indicators, namely: *emotional intelligence, achievement motivation, social dimension and self-efficacy in active ageing.*

6. PRAMA-Internet: this is adapted from the INMA-Internet scale, and includes a series of items that assess the *use of web 2.0 tools* and the *perceived benefits.*

Taken together, the instrument showed acceptable psychometric properties, with satisfactory content, theoretical and construct validity, as well as reliability, obtaining a total Cronbach's alpha of 0.720. By individual scale, we obtained a Cronbach's alpha of 0.748 for the PRAMA-PQL scale, 0.819 for PRAMA-PRA, 0.641 for PRAMA-LE, 0.769 for PRAMA-psychological and 0.742 PRAMA-Internet.

2.3. Design and procedure

The six scales comprising the instrument were designed following a review of various national and international descriptive and intervention studies and the instruments used in relation to empirical evidence-based quality of life practices, perceived quality of life, life experiences, psychosocial and emotional variables and internet use. Having designed the instrument and selected the type of sample, we conducted a pilot study with two groups of participants in a university programme for older adults in León (Spain) and another group of people attending a training course on technology tools, in order to determine the time required to complete the questionnaire, detect problems related to item interpretation and identify other problems that might arise during questionnaire completion. Subsequently, we contacted potential participants in person, by telephone, fax and the internet, to inform them about the study objectives and request their participation. Prior to completing the questionnaire independently at the time and place of their choice, participants gave their informed consent in accordance with the ethical and

professional conduct rules applicable to all scientific research. The maximum time required to complete the questionnaire was 30-35 minutes, although there were differences depending on the participants' level of digital competence. Once the questionnaires were completed, the results were extracted in Excel format and codified before conducting the pertinent statistical analyses.

2.4. Statistical analysis

First, we conducted descriptive analyses (frequencies and percentages, means and standard deviations). Normal distribution of the variables was confirmed by calculating skewness and kurtosis. Multivariate analyses were performed based on the general linear model (GLM), using the IBM statistical software package SPSS Statistics 24.0.

3. Results

We found statistically significant results for both of the grouping variables considered, with large effect sizes: (i) *Favourable life experiences* [λ Wilks=.061; $F(1536, 6926) = 1,886$; $p \leq .001$; $\eta^2 = .295$] and (ii) *Stressful life experiences* [λ Wilks=.005; $F(3281, 14119) = 1,576$; $p \leq .001$; $\eta^2 = .267$].

Similarly, the test for between-subject effects yielded statistically significant relationships, as will be described in four subsections that follow.

3.1. Differential patterns of perceived quality of life and psychological profiles according to favourable life experiences

Subjects' *favourable life experiences* were associated with differential patterns in their *perceived quality of life* and *psychological profiles* (Table 2). For example, people who highlighted a workplace-related event scored higher on occupation-related perceived quality of life (e.g. perceived quality of life-occupation, $M_{\text{work}} = 3.051$ versus $M_{\text{finances}} = 3.929$, $p = 0.01$). Similarly, favourable finance-related events seemed to be related to greater achievement motivation (e.g. total MOTIVATION, $M_{\text{finance}} = 11.706$ versus $M_{\text{education}} = 10.001$, $p = .002$).

Table 2

Differential patterns in perceived quality of life and psychological profiles according to favourable life experiences

VARIABLES	Physical health		Mental health		Social		Finances		Job		Education		Legal		Important life change		Other		p	F	σ	η ²
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ				
PERCEIVED QUALITY OF LIFE																						
Friends	3,089	0,624	3,023	0,636	3,213	0,645	2,714	0,726	3,066	0,732	3,125	0,669	2,001	0,001	3,168	0,706	3,261	0,619	2,291	0,020	0,017	
Intimate partner	2,595	1,068	2,349	0,997	2,978	0,982	3,001	0,961	2,618	1,019	2,615	1,030	2,001	1,414	2,842	1,020	2,609	0,891	3,146	0,002	0,023	
Occupation	2,734	0,887	2,581	0,879	2,872	0,808	2,571	0,938	3,051	0,773	2,677	0,877	1,001	0,001	2,946	0,865	2,652	0,982	3,680	0,001	0,027	
PSYCHOLOGICAL PROFILE																						
Emotional intelligence - own emotions	4,023	0,636	4,170	0,671	4,357	0,497	4,257	0,644	4,063	0,612	3,001	0,001	4,332	0,626	4,130	0,548	4,023	0,636	3,348	0,001	0,025	
MOTIVATION - intrinsic	4,233	0,718	4,061	0,696	3,857	0,949	4,235	0,782	4,198	0,776	3,500	0,707	4,144	0,736	4,261	0,810	4,233	0,718	1,967	0,047	0,015	
MOTIVATION - extrinsic	3,302	1,103	3,181	0,925	2,643	1,151	3,301	1,137	3,115	1,104	3,001	0,001	3,208	0,950	2,870	1,140	3,302	1,103	1,981	0,046	0,015	
TOTAL MOTIVATION	11,698	1,505	11,359	1,481	10,286	1,204	11,706	1,578	11,469	1,589	10,001	1,414	11,510	1,467	11,522	1,755	11,698	1,505	2,322	0,018	0,017	
SOCIAL DIMENSION - emotional support	4,140	0,941	4,282	0,821	4,001	1,038	3,875	1,029	4,188	0,910	3,001	1,414	4,218	0,818	3,957	1,107	4,140	0,941	2,933	0,003	0,022	
SOCIAL DIMENSION - information support	4,140	0,861	4,012	0,922	3,500	0,855	3,662	1,063	3,885	0,905	3,001	1,414	4,054	0,842	4,087	0,900	4,140	0,861	2,547	0,009	0,019	
SOCIAL DIMENSION - subjective assessment	4,163	0,754	4,168	0,782	3,786	0,975	4,022	0,890	4,042	0,724	2,500	0,707	4,129	0,819	4,174	0,984	4,163	0,754	2,077	0,035	0,016	
TOTAL SOCIAL DIMENSION	39,116	4,841	39,181	5,366	36,214	4,742	37,882	6,174	38,479	5,657	29,000	4,243	39,208	5,187	39,522	5,607	39,116	4,841	1,981	0,046	0,015	
SELF-EFFICACY - physical exercise	4,349	0,870	4,535	0,753	4,143	0,864	4,434	0,900	4,250	0,918	2,001	0,001	4,678	0,677	4,522	0,665	4,349	0,870	5,311	0,000	0,039	

Table 2

Differential patterns in perceived quality of life and psychological profiles according to favourable life experiences (Continuation)

VARIABLES	Physical health		Mental health		Social		Finances		Job		Education		Legal		Important life change		Other		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
PSYCHOLOGICAL PROFILE																					
SELF-EFFICACY - mental activity	4,698	0,513	4,696	0,588	4,500	0,519	4,544	0,698	4,563	0,646	3,001	0,001	4,733	0,571	4,652	0,647	4,698	0,513	2,970	,003	,022
SELF-EFFICACY - social relationships	4,419	0,823	4,625	0,671	4,500	0,855	4,588	0,694	4,385	0,887	3,500	0,707	4,713	0,604	4,435	0,728	4,419	0,823	2,770	,005	,021
SELF-EFFICACY - leisure	4,512	0,668	4,698	0,567	4,714	0,469	4,647	0,661	4,427	0,778	3,500	0,707	4,728	0,537	4,478	0,947	4,512	0,668	3,888	,001	,029
SELF-EFFICACY - management of finances	4,465	0,855	4,724	0,542	4,786	0,426	4,735	0,548	4,583	0,721	3,500	2,121	4,812	0,462	4,696	0,635	4,465	0,855	2,509	,011	,019
SELF-EFFICACY - activities outside the home	4,558	0,825	4,763	0,505	4,500	0,650	4,706	0,585	4,635	0,634	4,001	1,414	4,851	0,421	4,696	0,559	4,558	0,825	4,654	,001	,034
SELF-EFFICACY - training activities	4,581	0,663	4,718	0,537	4,500	0,941	4,684	0,580	4,573	0,661	4,001	0,001	4,782	0,459	4,696	0,635	4,581	0,663	3,201	,001	,024
SELF-EFFICACY - household tasks	4,512	0,883	4,659	0,685	4,429	0,756	4,522	0,750	4,563	0,751	5,001	0,001	4,792	0,524	4,739	0,619	4,512	0,883	3,087	,002	,023
SELF-EFFICACY - personal care	4,837	0,374	4,911	0,349	4,786	0,426	4,860	0,458	4,823	0,523	4,500	0,707	4,941	0,293	4,913	0,417	4,837	0,374	3,310	,001	,024
TOTAL SELF-EFFICACY	40,930	4,667	42,329	3,739	40,857	3,880	41,721	4,388	40,802	4,911	33,000	4,243	43,030	2,981	41,826	4,397	40,930	4,667	4,728	,000	,035

3.2. Differential patterns of practices that promote quality of life and use of web 2.0 tools according to favourable life experiences

Although we found variability depending on the type of tool, generally speaking, life experiences related to physical health, important life changes (e.g. birth of a child), finances and education appeared to be associated with greater use of web 2.0 tools (Table 3). Thus, for example, frequency of browser use seemed to be higher among subjects whose most favourable life events were related to physical health, major life changes, education and social life (e.g. USE of browsers, $M_{\text{life change}} = 4.827$ versus $M_{\text{legal}} = 2.501$, $p = 0.01$). With regard to the benefits of the use of web 2.0 tools, statistically significant results were obtained in relation to personal satisfaction. In particular, those who reported positive events related to finance, law, mental health, leisure and tourism, sports and spirituality, among others, seemed to experience higher levels of personal satisfaction derived from the use of these tools.

Table 3

Differential patterns in quality of life practices, use of web 2.0 tools and perceived benefits according to favourable life experiences

VARIABLES	Physical health		Mental health		Social		Finances		Job		Education		Legal		Important life change		Other		p	η ²	
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
FREQUENCY OF QUALITY OF LIFE PRACTICES																					
Personal hygiene	4,907	0,337	5,001	0,001	4,897	0,409	4,833	0,451	5,001	0,001	4,960	0,241	5,001	0,001	4,907	0,337	5,001	0,001	1,971	,047	,015
Healthy eating	4,209	0,828	3,929	0,997	4,228	1,004	3,948	0,988	3,501	0,707	4,495	0,806	4,174	0,887	4,209	0,828	3,929	0,997	2,348	,017	,017
Self health care	4,379	0,755	4,143	0,663	4,368	0,796	4,104	0,900	3,501	0,707	4,535	0,670	4,043	1,065	4,379	0,755	4,143	0,663	3,047	,002	,023
Consumption of harmful substances	2,217	1,218	1,429	0,756	2,132	1,191	2,479	1,248	1,501	0,707	2,158	1,264	2,261	1,054	2,217	1,218	1,429	0,756	2,473	,012	,018
Taking daily decisions	4,637	0,618	4,429	0,646	4,676	0,654	4,510	0,665	4,001	1,414	4,777	0,504	4,739	0,449	4,637	0,618	4,429	0,646	2,837	,004	,021
Taking important decisions	4,586	0,701	4,643	0,633	4,625	0,709	4,479	0,754	3,500	0,707	4,752	0,563	4,522	0,665	4,586	0,701	4,643	0,633	2,260	,021	,017
Money management	4,700	0,665	4,429	0,852	4,647	0,794	4,500	0,781	4,001	0,001	4,748	0,727	4,609	0,656	4,700	0,665	4,429	0,852	2,326	,018	,017
Access to necessary material things	4,511	0,671	4,429	0,852	4,588	0,602	4,333	0,675	4,001	0,001	4,609	0,684	4,217	0,851	4,511	0,671	4,429	0,852	1,944	,050	,015
Own rights defended by other people	3,525	0,980	3,714	1,204	3,846	0,958	3,354	1,124	2,500	0,707	3,876	1,036	3,696	1,146	3,525	0,980	3,714	1,204	3,695	,001	,027
Physical activity	4,014	0,972	3,857	1,100	4,221	0,979	3,740	1,117	2,001	1,414	4,079	0,994	4,001	0,853	4,014	0,972	3,857	1,100	3,066	,002	,023
Visits from friends	2,984	0,919	2,429	0,852	2,691	0,915	3,115	1,045	4,001	0,001	2,941	0,885	3,001	1,128	2,984	0,919	2,429	0,852	3,683	,001	,027
Contact with friends	4,503	0,700	4,143	0,864	4,235	0,921	4,427	0,764	5,001	0,001	4,421	0,703	4,609	0,656	4,503	0,700	4,143	0,864	2,287	,020	,017
Intimate relationships	3,116	1,128	2,929	1,439	2,507	1,277	2,917	1,202	2,001	0,001	2,941	1,236	2,652	1,301	3,116	1,128	2,929	1,439	3,784	,001	,028
Household tasks	4,546	0,755	4,643	0,497	4,588	0,683	4,458	0,794	5,001	0,001	4,678	0,727	4,739	0,449	4,546	0,755	4,643	0,497	2,138	,030	,016

Tabla 3

Differential patterns in quality of life practices, use of web 2.0 tools and perceived benefits according to favourable life experiences (Continuation)

VARIABLES	Physical health		Mental health		Social		Finances		Job		Education		Legal		Important life change		Other		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
USE OF WEB 2.0 TOOLS AND PERCEIVED BENEFITS																					
USE of browsers	4,888	0,739	3,929	2,129	4,816	0,944	4,635	1,307	2,500	3,536	4,827	0,917	4,783	1,043	4,888	0,739	3,929	2,129	3,814	,001	,028
USE of office automation tools	4,493	1,511	3,571	2,344	4,044	1,973	4,271	1,774	2,500	3,536	4,554	1,428	4,130	1,938	4,493	1,511	3,571	2,344	3,215	,001	,024
USE of functional tools	4,513	1,484	2,500	2,594	3,971	2,029	4,323	1,720	2,500	3,536	4,183	1,853	4,130	1,938	4,513	1,484	2,500	2,594	3,964	,001	,029
USE of image and sound tools	4,067	1,950	2,857	2,568	3,051	2,447	4,010	2,003	2,500	3,536	3,861	2,102	3,913	2,109	4,067	1,950	2,857	2,568	3,941	,001	,029
USE of social networks	3,783	2,148	2,857	2,568	3,051	2,447	3,958	2,041	5,001	0,001	3,515	2,290	4,348	1,722	3,783	2,148	2,857	2,568	2,184	,026	,016
USE of communication tools	4,513	1,484	3,214	2,486	3,934	2,056	4,323	1,720	2,500	3,536	4,530	1,463	3,913	2,109	4,513	1,484	3,214	2,486	3,029	,002	,022
USE of cloud tools	3,387	2,340	1,429	2,344	2,537	2,509	3,333	2,369	2,500	3,536	3,168	2,415	2,826	2,534	3,387	2,340	1,429	2,344	2,812	,004	,021
USE of educational tools	2,688	2,496	1,786	2,486	1,801	2,409	3,229	2,404	2,500	3,536	2,847	2,482	2,826	2,534	2,688	2,496	1,786	2,486	2,484	,011	,018
BENEFITS-personal satisfaction	3,122	1,120	3,643	1,499	3,154	1,088	3,208	0,893	3,001	0,001	2,970	1,119	3,478	0,790	3,122	1,120	3,643	1,499	2,180	,027	,016

3.3. Differential patterns of perceived quality of life and psychological profiles according to stressful life experiences

As with favourable life experiences, stressful events were also associated with differential patterns in perceived quality of life and psychological profiles. Thus, for example, addiction was associated with lower levels of perceived quality of life, whereas the highest levels were associated with the category of other experiences, which included experiences of prison, war or armed conflict, physical and psychological abuse, life transitions (retirement, working life) and abortion (e.g. total perceived quality of life, $M_{\text{addiction}} = 39.701$ versus $M_{\text{other}} = 48.589$, $p = 0.01$) (Table 4). Similarly, we found differential patterns depending on the type of stressful life experience in factors constituting the subjects' psychological profiles, including: emotional expression, size of social network, feelings of loneliness and self-efficacy in relation to management of finances.

Table 4

Differential patterns in perceived quality of life and psychological profiles according to stressful life experiences

VARIABLES	Death of a loved one		Education		Physical illness		Mental illness		Severe accident		Separation/divorce		Job		Finances		Leaving home		Addiction		Other		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
PERCEIVED QUALITY OF LIFE																									
Family	3.56	0.55	3.33	0.70	3.25	0.61	2.867	1.06	3.077	0.76	2.932	0.625	3.071	0.61	3.5	0.57	3.556	0.51	2.87	0.83	3.43	0.6665	2.25	0.00	0.03
Intimate partner	2.88	0.96	2.66	1.09	2.92	0.90	2.769	0.98	2.889	1.08	2.318	1.075	2.882	1.06	2.85	0.98	2.805	0.98	2.2	1.22	3.023	1.0078	3.53	0.00	0.05
Money	2.88	0.62	2.58	0.84	2.94	0.63	2.718	0.85	2.778	0.69	2.782	0.759	2.382	0.77	2.3	0.73	2.683	0.75	2.00	0.94	2.916	0.7386	2.33	0.00	0.03
Occupation	3.01	0.74	2.5	0.94	2.94	0.71	2.641	0.93	2.667	1	2.891	0.902	2.294	0.93	2.45	0.82	2.902	0.83	1.90	0.99	2.989	0.8786	3.55	0.00	0.05
Personal satisfaction	3.2	0.60	2.91	0.73	3.12	0.50	2.821	0.64	3.001	0.73	3.009	0.628	2.882	0.80	3.2	0.52	3.073	0.72	2.3	0.48	3.246	0.6497	2.36	0.00	0.03
Life in general	3.21	0.54	3.02	0.73	3.06	0.43	2.949	0.60	3.185	0.68	2.964	0.634	3.029	0.62	3.00	0.32	3.122	0.55	2.4	0.51	3.325	0.6033	2.33	0.00	0.03
TOTAL PERCEIVED QUALITY OF LIFE	48.0	5.48	46.2	6.64	47	4.87	45.20	5.89	47.29	6.73	45.964	5.989	45.38	6.23	46.9	5.26	46.41	6.74	39.7	6.71	48.58	6.0142	2.43	0.00	0.03
PSYCHOLOGICAL PROFILE																									
EMOTIONAL INTELLIGENCE - emotional expression	3.58	0.98	3	0.86	3.73	0.83	3.462	1.02	3.444	1.22	3.409	1.034	3.647	0.81	3.9	0.91	3.268	1.20	3.40	1.50	3.021	1.0053	2.03	0.00	0.03
SOCIAL DIMENSION - size of social network	3.69	1.05	3.22	1.22	3.70	1.05	3.205	1.15	3.593	1.30	3.455	1.239	2.941	1.07	3.55	1.14	3.463	1.05	2.5	1.58	3.532	1.0575	1.97	0.01	0.03
SOCIAL DIMENSION - loneliness	3.89	1.08	3.41	1.15	4.09	0.96	3.615	1.20	4.185	0.87	3.436	1.223	3.647	1.12	3.85	0.98	3.78	1.06	3.4	1.50	3.68	1.1302	2.69	0.00	0.04
SELF-EFFICACY - management of finances	4.85	0.41	4.69	0.52	4.73	0.48	4.718	0.51	4.741	0.59	4.582	0.626	4.765	0.60	4.65	0.67	4.732	0.54	4	0.94	4.814	0.6836	1.88	0.01	0.03

3.4. Differential patterns of practices that promote quality of life and use of web 2.0 tools according to stressful life experiences

We also observed differential patterns in practices that promote quality of life and the use of web 2.0 tools (Table 5). In general, the death of a loved one was associated with greater subsequent practice of activities that promote quality of life. However, there were exceptions. For example, the death of a loved one was also related to greater reliance on consumption of substances harmful to health (e.g. consumption of harmful substances, $M_{\text{death of a loved one}} = 1.77$ versus $M_{\text{mental illness}} = 2.795$, $p = 0.01$). Regarding the use of web 2.0 tools, stressful life experiences were again associated with differential patterns. For example, subjects who reported educational problems tended to make more use of social networks (e.g. USE of social networks, $M_{\text{education}} = 4.722$ versus $M_{\text{addiction}} = 3.001$, $p = 0.01$). Similarly, we found differences in relation to the perceived benefits arising from the use of web 2.0 tools. Thus, subjects who had suffered the death of a loved one perceived greater physical and mental health benefits (e.g. health BENEFITS, $M_{\text{death of a loved one}} = 3.19$ versus $M_{\text{other}} = 2.186$, $p = 0.01$ $p = 0.01$).

Table 5

Differential patterns in quality of life practices, use of web 2.0 tools and perceived benefits according to stressful life experiences

VARIABLE	Death of a loved one		Education		Physical illness		Mental illness		Severe accident		Separation/divorce		Job		Finances		Leaving home		Addiction		Other		F	p	η ²
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
FREQUENCY OF QUALITY OF LIFE PRACTICES																									
Self health care	4,63	0,59	3,91	0,84	4,41	0,66	4,33	0,83	4,25	0,85	4,355	0,797	4,50	0,70	4,35	0,87	4,39	0,70	3,70	0,94	4,30	0,8353	3,03	0,00	0,04
Consumption of harmful substance	1,77	1,05	2,61	1,17	2,11	1,26	2,79	1,15	2,18	1,21	2,436	1,216	1,88	0,91	2,35	1,38	2,31	1,17	2,90	1,19	2,07	1,238	3,02	0,00	0,04
Taking daily decisions	4,79	0,47	4,44	0,69	4,66	0,52	4,59	0,59	4,59	0,63	4,718	0,527	4,50	0,92	4,70	0,65	4,58	0,63	4,80	0,42	4,62	0,6669	1,65	0,04	0,02
Taking important decisions	4,76	0,57	4,30	0,85	4,67	0,60	4,51	0,68	4,48	0,70	4,655	0,627	4,52	0,82	4,65	0,67	4,61	0,58	4,90	0,31	4,75	0,7523	1,91	0,01	0,03
Decisions taken by other people	4,19	0,86	3,80	0,82	4,10	0,87	3,76	0,81	4,11	0,80	4,191	0,760	4,23	0,78	3,95	0,88	3,82	1,02	4,00	0,94	4,26	0,8302	1,63	0,05	0,02
Control of negative emotions	4,18	0,82	3,69	0,95	4,08	0,72	3,43	1,02	4,11	0,75	3,973	0,903	4,02	0,87	4,00	0,72	3,97	0,79	4,00	0,81	4,24	0,9442	2,46	0,00	0,03
Money management	4,81	0,56	4,27	1,03	4,65	0,80	4,38	0,99	4,77	0,50	4,673	0,622	4,58	0,82	4,60	0,75	4,75	0,53	4,20	1,03	4,68	0,8012	2,49	0,00	0,04
Access to necessary material things	4,69	0,56	4,22	0,76	4,62	0,58	4,38	0,67	4,40	0,84	4,482	0,660	4,26	0,75	4,35	0,93	4,43	0,59	3,80	1,13	4,57	0,7137	3,85	0,00	0,06
Defence of own rights	4,53	0,69	3,83	1,08	4,36	0,75	4,25	0,63	4,37	0,79	4,318	0,845	4,26	0,71	4,50	0,68	4,12	0,90	4,50	0,85	4,28	0,8040	1,75	0,03	0,02
Own rights defended by other people	3,90	1,04	3,11	1,06	3,61	1,01	3,41	0,85	3,74	0,98	3,591	1,052	3,97	1,00	3,70	0,97	3,34	0,99	3,10	0,99	3,84	1,030	2,57	0,00	0,04

Table 5

Differential patterns in quality of life practices, use of web 2.0 tools and perceived benefits according to stressful life experiences (Continuation)

VARIABLES	Death of a loved one		Education		Physical illness		Mental illness		Severe accident		Separation/divorce		Job		Finances		Leaving home		Addiction		Other		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
FREQUENCY OF QUALITY OF LIFE PRACTICES																									
Legal help	2,9	1,31	2,86	1,24	2,71	1,26	2,74	1,31	2,37	1,30	2,582	1,128	2,58	1,10	2,70	1,30	2,34	1,29	3,00	1,49	2,73	1,134	2,03	,00	,03
	9	9	1	6	2	8	4	2	0	5			8	4	0	2	1	6	1	1	6	4	6	8	3
Physical activity	4,2	1,06	3,50	1,02	3,99	0,92	3,94	0,94	4,14	1,06	4,173	0,917	4,14	0,95	3,85	0,74	4,00	0,97	3,30	1,41	3,89	1,103	2,24	,00	,03
	3	5	0	8	1	9	9	5	8	4			7	8	0	5	1	5	0	8	8	9	3	3	6
Mental activity	4,6	0,81	4,22	0,98	4,27	0,99	4,07	1,13	4,37	0,83	4,400	1,025	4,38	0,81	4,30	0,80	4,34	1,01	3,50	1,78	4,21	,9876	2,33	,00	,03
	4	7	2	9	0	0	7	3	0	9			2	7	0	1	1	5	0	0	4		9	2	8
Visits from family	3,6	0,94	3,27	1,34	3,46	0,96	3,07	1,01	3,18	1,21	3,055	1,057	3,20	1,00	3,40	0,88	3,19	1,14	3,30	0,82	3,25	1,036	1,65	,04	,02
	1	9	8	4	8	1	7	0	5	0			6	8	0	3	5	5	0	3	0	9	8	5	7
Visits from friends	2,9	0,90	3,30	0,95	2,96	0,93	2,74	1,04	2,66	0,92	2,873	0,968	2,58	0,65	2,95	0,60	3,19	0,95	2,80	1,13	3,40	,9801	1,93	,01	,03
	9	5	6	1	4	4	4	4	7	0			8	7	0	5	5	5	0	5	2		7	2	1
Family reunion outside the home	3,6	0,84	2,97	0,94	3,46	0,81	3,23	1,03	3,25	0,85	3,300	0,894	3,05	0,98	3,50	0,82	3,29	0,98	2,60	0,96	3,07	,9041	2,31	,00	,03
	2	6	2	1	8	8	1	8	9	9			9	3	0	7	3	1	0	6	1		5	2	7
Contact with family	4,5	0,65	4,22	1,12	4,51	0,58	4,23	0,90	4,14	1,02	4,282	0,940	4,17	0,99	4,35	0,74	4,22	0,90	3,80	0,91	4,35	,8091	1,72	,03	,02
	5	0	2	4	4	6	1	2	8	7			6	9	0	5	0	9	0	9	3		6	3	8
Intimate relationships	2,7	1,07	3,22	1,07	3,27	1,11	3,12	1,10	2,70	1,10	2,636	1,283	2,94	1,30	2,85	1,18	3,04	1,32	3,10	1,28	2,78	1,205	4,30	,00	,06
	9	6	2	2	0	2	8	5	4	3			1	1	0	2	9	2	0	7	9	0	8	1	7
Household tasks	4,5	0,91	4,55	0,65	4,57	0,75	4,35	0,81	4,63	0,62	4,545	0,750	4,47	0,78	4,55	0,75	4,63	0,62	4,20	1,22	4,52	,7524	1,70	,03	,02
	7	0	6	2	7	7	9	1	0	9			1	8	0	9	4	3	0	9	7		0	7	8
Leisure at home	4,6	0,69	4,44	0,65	4,30	0,98	4,43	0,91	4,18	0,78	4,527	0,713	4,29	0,83	4,35	0,67	4,65	0,65	4,50	0,97	4,43	,8144	2,53	,00	,04
	5	4	4	2	6	0	6	2	5	6			4	6	0	1	9	6	0	2	1		8	1	1

Table 5

Differential patterns in quality of life practices, use of web 2.0 tools and perceived benefits according to stressful life experiences (Continuation)

VARIABLES	Death of a loved one		Education		Physical illness		Mental illness		Severe accident		Separation/divorce		Job		Finances		Leaving home		Addiction		Other		F	p	η ²	
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ				F
USE of image and sound tools	3,5	2,23	4,86	0,83	3,82	2,12	4,35	1,69	4,25	1,81	4,136	1,89	3,67	2,23	4,00	2,05	4,26	1,78	4,50	1,58	4,02	1,95	2,22	4,00	3,6	,03
USE of social network	3,2	2,41	4,72	1,16	3,42	2,33	3,84	2,13	3,51	2,32	4,136	1,89	3,97	2,05	4,25	1,83	4,51	1,50	3,00	2,58	3,64	2,06	2,71	3,00	3,1	,04
USE of cloud tools	2,5	2,51	4,30	1,75	3,33	2,36	3,46	2,33	2,22	2,53	3,500	2,30	3,08	2,46	4,00	2,05	4,02	2,00	2,50	2,63	2,98	2,31	2,71	4,00	3,1	,04
USE of tools to select, organize and share information	0,9	1,97	3,19	2,43	1,35	2,23	1,66	2,38	1,11	2,11	1,227	2,16	1,50	2,35	1,34	2,24	1,00	2,10	2,50	3,53	1,31	2,23	2,42	1,00	1,9	,03
USE of educational tools	1,6	2,36	4,58	1,40	2,74	2,49	3,20	2,43	2,96	2,50	2,409	2,51	2,20	2,52	3,00	2,51	3,41	2,35	2,50	2,63	4,16	2,29	5,25	4,00	1,1	,08
BENEFITS - physical and mental health	3,1	1,14	2,77	1,07	2,99	1,05	3,02	0,90	3,14	1,16	2,864	0,94	2,85	1,20	2,65	0,87	3,04	1,11	3,00	0,94	2,18	1,00	2,15	4,00	4,5	,03
BENEFITS - personal satisfaction	3,3	1,17	2,91	1,22	3,20	0,99	2,87	1,10	3,63	1,11	2,955	1,11	3,14	1,10	2,65	0,98	3,09	1,02	3,10	0,87	2,90	1,03	1,72	4,00	4,8	,02

4. Discussion

The study objective was achieved, namely to answer the initial research question. Both favourable and stressful life experiences of adults and older adults were associated differential patterns in intimate and personal aspects such as psychological profiles and perceived quality of life, and in daily activities and practices that influence quality of life, such as the use of web 2.0 tools, which yielded cognitive, affective, social, emotional, physical and behavioural benefits, among others (Chen & Schulz, 2016; Díaz-Prieto & García-Sánchez, 2016; Khosravi & Ghapanchi, 2016).

One of the main contributions of this study is the analysis of the role of favourable life experiences. To date, most studies have focused on stressful life events and their consequences (Kendler & Gardner, 2016; Mayo et al., 2017; Pan et al., 2017). However, our study demonstrates that favourable life experiences also play an important role, mainly in the construction of an individual's psychological profile and use of web 2.0 tools, but also in perceived quality of life and engagement in practices that promote said quality. Favourable life experiences were associated with a higher number of differences in the subjects' psychological profiles and use of web 2.0 tools, whereas stressful life experiences were associated with greater differential patterns in perceived quality of life and quality of life practices. It is the combined experiences of an adult or older adult that determine his or her identity, personality and lifestyle and affect his or her physical and mental health status and well-being (Blonski et al., 2016).

Traditionally, past adverse or stressful life events have been associated with a life marked by negative events (Lim & DeSteno, 2016). In line with more recent models and theories such as adaptation to development and resilience (ChoMartin & Poon, 2015), our study demonstrates that stressful life experiences sometimes act as powerful catalysts, spurring individuals to overcome these events and triggering a process of personal growth that exerts a positive effect psychologically and with regard to daily practices and activities. In relation to perceived quality of life, life experiences were associated with differences in terms of interpersonal relationships,

finances, occupation, satisfaction, assessment of life in general and the global quality of life score, with differential patterns according to whether the experience was favourable or stressful and the specific type of experience, although no clear trend was observed. Several studies have previously reported the impact of life experiences on quality of life and well-being (Pocnet et al., 2016), but few have described the specific areas influenced.

As regards psychological profiles, favourable and stressful life experiences alike shaped the emotional, social and self-efficacy dimensions, but only favourable experiences were associated with differences in motivation. Whereas previous studies have reported the impact of mainly stressful life experiences on psychological profiles (Lasgaard, Armour, Holm & Goossens, 2016), our study shows that favourable experiences also contribute to their construction.

In terms of the frequency of engaging in empirical evidence-based practices that promote quality of life, favourable and stressful life experiences alike were associated with differential patterns in physical and mental health, self-determination, social, material and functional domains and emotional well-being. All this contributes to enhancing the quality of life, as evidenced by various studies (Gómez, Verdugo & Arias, 2015).

Lastly, with regard to the use of web 2.0 tools and the perceived benefits of this, life experiences, in this case mainly favourable ones, were associated with differential patterns of use for almost all of the tools studied. Nevertheless, unfavourable life experiences were associated with greater differences in the perceived benefits in relation to physical and mental health and personal satisfaction. This may be because better standards of living probably favour the use of these media. In fact, several previous studies have confirmed the relationship between a higher socioeconomic level and greater use of the internet and web 2.0 tools in various age groups (Lai & Kwan, 2017). Our results in relation to the benefits indicate that these tools possess significant potential as a coping resource, in agreement with previous studies (Li et al., 2016).

Nonetheless, despite these differential patterns, the differences between them were very small and no clear trends were observed. This may be because emotional associations may exert a greater influence regardless of the type of experience. It might also be explained in light of theories such as resilience, according to which, people tend to focus on positive events and to deploy a series of strategies for coping with stressful events in order to promote positive adaptation (Randall et al., 2015).

This study presents a series of limitations that must be taken into consideration. First, use of the tool *Google Forms* entailed problems related to privacy, the impossibility of establishing a password, technical problems that made it necessary to eliminate responses and the impossibility of saving responses when answering the questionnaire, which could lead to loss of all information entered in the event of a connection or application failure. In general, the researchers were able to overcome these difficulties, making the necessary adjustments during the design process and questionnaire administration alike, and thus they did not affect the results to any great extent. However, many of these difficulties could be avoided by administering the questionnaire via another type of tool such as *SurveyMonkey*. It is also necessary to note the possible existence of sample bias. For example, since we used voluntary sampling, factors such as participant motivation to complete the questionnaire, the availability of technological resources or the need for basic digital competence may have influenced the final sample obtained. Different results to ours might be obtained in populations with other sociodemographic, economic and educational characteristics, and it is therefore difficult to generalise our findings. In addition, people with problems of autonomy were not included, and this would be an interesting future avenue to explore using another type of instrument through individualised questionnaires. Furthermore, although this study included a representative sample of adults and older adults from various parts of Spain, it may nevertheless be necessary to conduct a comparative study of the different regions in Spain which would complement the results obtained here.

5. Conclusions

This study underscores the impact of favourable and stressful life experiences on perceived quality of life, psychological profiles and practices that promote quality of life, including the use of web 2.0 tools. We found differential patterns in relation to life experiences, indicating that besides considering sociodemographic factors, as has been the custom to date, interventions aimed at improving quality of life should also take into account life experiences and the other factors analysed here. This could contribute to the implementation of more successful psychological and social interventions.

6. References

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Estudio 8

Practices, life experiences and psychological profiles according to quality of life and personal satisfaction in adults and the elderly in Spain

Applied Research in Quality of Life (under review)

Factor de impacto (FI)

JCR (1.286)- Social Sciences, Interdisciplinary- Q2- Rank 34/96

FI-5 años (1.303)

SJR (0.281). Social Sciences - Q3

H Index (19)

Cited Half-Life (4.8)

Immediacy index (0.038)

Eigenfactor score (0.00088)

Article influence score (0.827)

ICDS (10.5)

CARHUS Plus+ 2014 (GRUPO B)

Indexada en: Scopus, Social Science Citation Index, IBZ Online, Psycinfo

Referencia:

Díaz-Prieto, C. & García-Sánchez, J. N. (under review). Practices, life experiences and psychological profiles according to quality of life and personal satisfaction in adults and the elderly in Spain. *Applied Research in Quality of Life*

Practices, life experiences and psychological profiles according to quality of life and personal satisfaction in adults and the elderly in Spain

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Abstract

A study was carried out with the purpose of determining the day-to-day practices, positive and stressful life experiences, and psychological profiles that underpin different perceptions of quality of life and personal satisfaction. 1,095 adults and elderly people from Spain participated in the study. An online instrument designed using the tool *Google Forms* was administered to them. Descriptive and multivariate analysis was performed using the General Linear Model (GLM). Three types of finding were obtained. First, we identified everyday practices that promote perceived quality of life and personal satisfaction. Second, we established the relationship between certain positive and stressful life experiences, their consequences, and different perceptions of quality of life and personal satisfaction. Finally, we identified the distinguishing psychological profiles associated with these constructs. The results obtained here can contribute to the development of more successful psychological and social interventions. They reveal a set of indicators that, based on empirical evidence, should be part of any intervention design.

Keywords: everyday practices; life experiences; psychological profiles; perceived quality of life; personal satisfaction

Acknowledgements

C. Díaz-Prieto received funds through a PhD Fellowship (FPU-MECD REF.12/04517) for the four-year period 2013-2017.

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1. Introduction

Perceived quality of life and personal satisfaction are two distinct but closely related constructs. One could say that personal satisfaction is a domain that is part of quality of life. Both concepts transcend the objective and fall within the level of appraisals and personal assessments. In many cases, this level is even more important than the strictly objective when it comes to defining well-being (Cardona and Agudelo 2007; Chaves et al. 2016). Although there are data that point to the impact of certain everyday practices, experiences and psychological traits on quality of life (Dardas and Ahmad 2015; Thomsen et al. 2016; Marcus-Varwijk et al. 2016), the truth is that none of the studies reviewed focuses on analysing the types of daily practices, life experiences and psychological profiles that lie behind high perceived quality of life and personal satisfaction.

Different studies have identified what could be termed *practices* based on empirical evidence that contribute to optimizing quality of life. For example, physical exercise, mental stimulation, the frequent establishment of social connections, social affiliation and even work may be associated with a higher life quality and satisfaction (Barreto et al. 2017; Foster and Walker 2015; Hommerich and Tiefenbach 2017; Hongthong et al. 2015; Kim et al. 2015; Marcus-Varwijk et al. 2016). In spite of this, no studies have been conducted on the relationship that may exist with personal satisfaction, and even less has been done to identify the distinguishing patterns associated with the different perceptions of quality of life within a rating scale. Within these practices, and in response to the current context, special mention should be made of the *use of Web 2.0 tools*. Even though there has been abundant research with regard to predictors, patterns of use and the benefits of these tools among different age groups (Díaz-Prieto and García-Sánchez 2016; Marston et al. 2016), little is known about the distinguishing patterns of use and benefits on the basis of the perception held of quality of life and personal satisfaction.

Usually, when *life experiences* have been studied, the techniques of reminiscence and a life review or a review of significant life events have been turned to. While some studies refer to benefits derived from the memory of life experiences at a

psychological, emotional and social level, when it comes to life satisfaction, well-being and quality of life (El Haj and Antoine 2017; Hyams and Scogin 2015; Latorre et al. 2015; Lopes et al. 2016; Wren 2017), others question such benefits (Hofer et al. 2017). The majority of research has focused on the analysis of so-called stressful life events, their consequences and the mediating role of resilience and coping strategies in this relationship (Lasgaard et al. 2016; Misheva 2016). Through these studies, a number of experiences that may affect quality of life and well-being (Misheva 2016) have been identified, including physical- and mental-health, social, work and economic problems. Despite this, there is a gap in the research regarding the patterns of positive and stressful life experiences that underpin a high quality of life and personal satisfaction.

Certain psychological and personality traits have traditionally been associated with quality of life (Grinde 2016; Husson et al. 2017; Heidemeier and Göritz 2016; Marino et al. 2016). Moreover, particular personal tools that may contribute to regulating well-being have been identified, including emotional intelligence, social support and certain coping styles (Krabbenborg et al. 2016; Zeidner et al. 2016). Another group of studies has focused on analysing the psychological consequences that stem from particular difficulties, mainly in relation to physical and mental health, and that inevitably have an impact on quality of life, personal satisfaction, well-being and mental health (Adeyeye et al. 2017; Migaou-Miled et al. 2016). That said, few studies have concentrated on an analysis of the *psychological profiles* that underpin a high perceived quality of life, which could be very relevant for the purposes of outlining emotional and psychosocial variables that, owing to their protective role, contribute to enhancing quality of life and well-being (Anagnostis et al. 2014). The idea, then, is the provision of a positive viewpoint that encourages the undertaking of effective social and psychological interventions within the framework of the new approaches that extol individual strengths as the nucleus of such activities (Lyons et al. 2016).

The present study aims to answer the following research question: What kinds of daily practices, life experiences and psychological profiles lie behind different perceptions of quality of life and personal satisfaction? In answering this research

question, we seek to determine the relationship between perceived quality of life, the personal satisfaction of adults and the elderly, the daily practices that they undertake, their life experiences (both positive and stressful ones), and their psychological profiles.

2. Method

2.1. Participants

We surveyed 1,095 adults and elderly people in Spain who were recruited through different centres, associations, organizations, institutions, public and private universities and university programmes for older people (Table 1). Of these, 439 were men and 656 women, distributed by age groups as follows: (i) under 55 years ($n = 498$; $\bar{X}_{\text{age}} = 33.5$); (ii) 55-60 years ($n = 138$; $\bar{X}_{\text{age}} = 58$); (iii) 61-65 years ($n = 177$; $\bar{X}_{\text{age}} = 63$); (iv) 66-70 years ($n = 163$; $\bar{X}_{\text{age}} = 68$); y, (v) over 70 years ($n = 119$; $\bar{X}_{\text{age}} = 75.5$). All participants were adults who had a basic knowledge of working with ICT and sufficient autonomy to respond to the instruments administered.

Table 1

Distribution of participants by age and sex (n=1095)

	< 55	55-60	61-65	66-70	>70	Total
Male	176	59	77	75	52	439
Females	322	79	100	88	67	656
Total	498	138	177	163	119	1095

2.2. Instrument and variables

The *Practices in Adults and the Elderly* (PRAEL) instrument consists of 6 scales. It was designed based on a review and adaptation of numerous questionnaires used in various national and international studies, including the *Scale of Social Support Networks for Older Adults* (Mendoza-Núñez and Martínez-Maldonado, 2009), the *Expectations of Self-Efficacy to Perform Activities of Daily Living in Older Adults Instrument* (González-Celis, 2009), the *Quality of Life in Alzheimer's Disease* instrument (QOL-AD; Logsdon, Gibbons, McCurry, and Teri, 2002) and the *Internet and Elderly People* instrument (Díaz-Prieto and García-Sánchez, 2016), among many others. Google

Forms was used to design and administer the survey. The instrument as a whole displayed adequate psychometric properties with satisfactory content, theoretical and construct validity, as well as reliability in the form of a Cronbach alpha of 0.720.

Table 2 shows the structural and psychometric description for each of the scales included in the instrument.

Table 2

Structural and psychometric description of the scales contained in PRAEL

SCALE	FOCUS	SPECIFIC VARIABLES	CRONBACH'S ALPHA
PRAEL-SD	Sociodemographic data	1. Sex	-
		2. Age	
		3. Marital status	
		4. Place of origin	
		5. Place of residence	
		6. Educational level	
		7. Employment status	
		8. Occupation	
		9. Economic level	
		10. Indicator of independent living	
		11. Degree of independence	
PRAEL-PQoL	Perceived quality of life	1. Physical health	0.748
		2. Mood	
		3. Memory	
		4. Family	
		5. Friends	
		6. Intimate relationships	
		7. Place of residence	
		8. Ability to meet basic needs	
		9. Ability to perform household tasks	
		10. Ability to perform tasks outside the home	
		11. Leisure and entertainment	
		12. Money	
		13. Occupation	
		14. Personal satisfaction	
		15. Life in general	

Table 2

Structural and psychometric description of the scales contained in PRAEL (Continuation)

SCALE	FOCUS	SPECIFIC VARIABLES	CRONBACH'S ALPHA
PRAEL-EP	Everyday practices	<ol style="list-style-type: none"> 1. Physical exercise 2. Mental activity 3. Self-care activities 4. Meetings and contact with relatives and friends 5. Intimate relationships 6. Training activities 7. Leisure and social activities 8. Tourist activities Volunteering	0.819
PRAEL-LE	PRAEL-LE-FAV Favourable life experiences	<ol style="list-style-type: none"> 1. Close circle 2. Stage 3. Description of the most important life event from a small narrative 4. Emotions 5. Affect in the short and medium term Present influence 6. Coping strategies- <i>acceptance, denial, active, planning, self-distraction, emotional support, instrumental support, emotional discharge, resignation, self-criticism, positive reformulation, humour and religion.</i> 	0.641
PRAEL-LE-STR	Stressful life experiences		
PRAEL-psychological	Psychological profiles	<ol style="list-style-type: none"> 1. Emotional intelligence 2. Achievement motivation 3. Social dimension 4. Self-efficacy in active ageing 	0.769
PRAEL-Internet	Patterns of use	<ol style="list-style-type: none"> 1. Use of web 2.0 tools: -Social or emotional applications: <i>communication tools; social networks; email, image and sound tools and Apps.</i> -Instrumental applications: <i>browsers and search engines; cloud tools; functional tools; educational tools; tools for selecting, classifying and sharing information and office automation tools</i> 2. Perceived benefits 	0.742

2.3 Design and procedure

Having designed the PRAEL instrument, we conducted a pilot study. Forty-five of its participants were enrolled in a university programme at the Universidad de León (Spain) for elderly people, and fifty-eight were enrolled in a course on technological tools organized by the local authorities. The aim was to determine the estimated time required to complete the instrument, as well as to detect possible problems related to interpretation of the items or any other issue that might arise during completion of the questionnaire. Once the different problems identified had been addressed, we made contact with the potential sample in person or via telephone, fax or the Internet in order to inform them about the objectives of the study and to request their participation. The participants gave their informed consent to participate in the study in accordance with the ethical and professional-conduct standards applicable to all scientific research. The maximum amount of time required to complete the instrument was 30-35 minutes, though there were differences based on participants' level of digital competence. Once the questionnaires had been completed, the results were extracted and coded for the purpose of conducting descriptive analysis (frequencies and percentages, means and standard deviations). After confirming the normality of the variables, multivariate analysis was performed based on the general linear model (GLM). To these ends, we used the IBM statistical software package SPSS Statistics 24.0.

3. Results

The (GLM) multivariate contrasts indicated statistically significant results, taking as grouping variables quality of life [λ Wilks = .060; $F(579, 2676) = 7.212$; $p \leq .001$; $\eta^2 = .609$] and personal satisfaction [λ Wilks = .099; $F(579, 2676) = 5.371$; $p \leq .001$; $\eta^2 = .537$]. The tests for intersubject effects for the variables related to everyday practices, life experiences and psychological profiles provided statistically significant results with effect sizes that were in general average, as will be shown in the following paragraphs.

Everyday practices according to perceived quality of life and personal satisfaction

According to perceived quality of life

There is a general trend that supports the existence of practices based on empirical evidence that promote the quality of life (Table 3). In general, the higher the frequency of these practices, the greater the perceived quality of life. That said, there seem to be certain practices that have a greater impact on a positive perception of quality of life. Among these, worth highlighting are those relating to the *psychological* domain (e.g. Control of negative emotions, $M_{\text{bad}}=2.857$ versus $M_{\text{excellent}}=4.343$, $p=0.01$); to *self-care* (e.g. health self-care, $M_{\text{bad}}=3.714$ versus $M_{\text{excellent}}=4.670$, $p=0.01$); to *self-determination* (e.g. Taking day-to-day decisions, $M_{\text{bad}}=4.143$ versus $M_{\text{excellent}}=4.865$, $p=0.01$); to the *social* sphere (e.g. family contacts, $M_{\text{bad}}=2.714$ versus $M_{\text{excellent}}=4.570$, $p=0.01$); and to *leisure and recreation* (e.g. Recreational activities, $M_{\text{bad}}=2.143$ versus $M_{\text{excellent}}=3.557$, $p=0.01$).

Special mention within these daily practices should go to the use of Web 2.0 tools and the perceived benefits thereof. That said, statistically significant results were only found in relation to the perceived benefits derived from the use of these tools, defining patterns that associate a higher perceived quality of life with greater perceived benefits (e.g. Benefits-general life, $M_{\text{bad}}=1.571$ versus $M_{\text{excellent}}=3.604$, $p=0.01$). Therefore, there do not appear to be any differences in the use of Web 2.0 tools according to perceived quality of life.

Table 3

Daily practices according to perceived quality of life

VARIABLES	Bad		Okay		Good		Excellent		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
Personal hygiene	4,714	0,756	4,814	0,510	4,896	0,374	4,970	0,172	5,582	0,001	0,015
Healthy eating	4,001	1,291	3,938	1,011	4,238	0,854	4,430	0,883	8,166	0,001	0,022
Sleep	2,571	0,787	2,947	0,639	3,045	0,494	3,017	0,485	3,103	0,026	0,009
Self health care	3,714	1,113	3,903	0,973	4,359	0,766	4,670	0,564	28,299	0,001	0,073
Taking daily decisions	4,143	0,900	4,319	0,759	4,630	0,634	4,865	0,367	22,910	0,001	0,060
Taking important decisions	4,000	0,817	4,265	0,791	4,581	0,706	4,835	0,493	20,412	0,001	0,053
Decisions taken by other people	3,714	1,380	3,681	0,975	4,047	0,808	4,283	0,778	13,973	0,001	0,037
Planning ahead	2,857	1,215	3,531	1,053	3,856	1,138	4,052	1,270	6,886	0,001	0,019
Control of negative emotions	2,857	0,900	3,239	0,994	4,004	0,791	4,343	0,906	48,040	0,001	0,117
Money management	4,429	1,134	4,301	0,865	4,659	0,753	4,791	0,661	11,122	0,001	0,030
Access to necessary material things	3,571	1,272	4,000	0,876	4,516	0,647	4,726	0,583	34,678	0,001	0,088
Savings	3,429	1,134	4,018	1,086	4,175	0,934	4,348	0,976	4,809	0,002	0,013
Social support	2,429	0,976	3,558	0,963	4,018	0,989	4,257	1,152	17,414	0,001	0,046
Defence of own rights	3,857	1,215	3,929	0,942	4,313	0,794	4,652	0,655	23,499	0,001	0,061
Legal help	1,571	0,787	2,327	1,176	2,698	1,196	2,904	1,395	7,450	0,001	0,020
Physical activity	3,857	1,069	3,549	1,232	4,050	0,975	4,243	0,847	12,863	0,001	0,034
Mental activity	4,000	1,414	3,965	1,253	4,381	0,944	4,626	0,861	12,257	0,001	0,033
Visits from family	1,714	0,756	2,814	1,199	3,367	0,945	3,609	1,038	22,578	0,001	0,059
Visits from friends	1,286	0,756	2,531	1,001	2,923	0,915	3,248	0,884	23,827	0,001	0,062
Family reunion outside the home	2,286	1,254	2,903	1,000	3,428	0,852	3,552	0,879	18,434	0,001	0,049
Friends reunion outside the home	1,857	1,215	3,487	0,965	3,848	0,810	4,004	0,779	23,495	0,001	0,061
Contact with family	2,714	0,756	3,965	0,963	4,405	0,781	4,570	0,688	25,865	0,001	0,067
Contact with friends	2,857	1,345	4,088	0,892	4,419	0,751	4,643	0,579	25,010	0,001	0,065
Intimate relationships	1,286	0,756	2,522	1,275	2,919	1,176	3,204	1,225	12,866	0,001	0,034
Leisure at home	3,714	1,704	4,257	0,864	4,499	0,741	4,609	0,744	7,806	0,001	0,021
Daily activities in the street	4,286	0,951	4,159	0,739	4,374	0,698	4,509	0,672	6,425	0,001	0,017
Tourism activities	1,714	0,756	2,301	0,680	2,722	0,739	2,922	0,795	21,768	0,001	0,057
Learning activities	3,000	1,155	3,575	1,280	3,907	1,091	4,083	1,001	7,039	0,001	0,019
Leisure activities	2,143	0,900	2,956	0,900	3,411	0,711	3,557	0,702	24,173	0,001	0,063
Civic participation activities	2,143	1,345	2,204	0,908	2,556	1,060	2,687	1,166	5,531	0,001	0,015
Volunteering	1,429	1,134	1,496	0,814	1,851	1,013	2,139	1,301	10,066	0,001	0,027
BENEFITS-autonomy	3,714	1,380	3,487	1,174	3,534	1,229	3,809	1,288	3,188	0,023	0,009
BENEFITS - physical and mental health	2,143	0,690	2,752	0,882	2,946	1,047	3,274	1,232	9,108	0,001	0,025
BENEFITS-social participation	2,143	1,464	2,982	1,110	3,329	1,087	3,730	1,199	15,680	0,001	0,042
BENEFITS-social network	2,571	1,512	2,717	1,214	3,154	1,075	3,526	1,242	14,316	0,001	0,038
BENEFITS-mood	2,143	1,069	2,637	0,992	3,019	0,974	3,330	1,173	13,953	0,001	0,037
BENEFITS - personal satisfaction	2,001	1,000	2,708	1,075	3,144	1,036	3,487	1,256	16,074	0,001	0,043
BENEFITS-general life	1,571	0,976	2,735	0,955	3,283	1,011	3,604	1,199	23,749	0,001	0,062
TOTAL BENEFITS	16,286	4,990	20,018	5,312	22,409	5,954	24,761	7,024	18,920	0,001	0,050

According to personal satisfaction

We observed a trend similar to that described in relation to quality of life—that is, the higher the frequency of everyday practices that promote quality of life, the greater the personal satisfaction (Table 4). There are practices that are associated with greater personal satisfaction. Included among these are some of a *psychological* type (e.g. Control of negative emotions, $M_{\text{bad}} = 2.50$ versus $M_{\text{excellent}} = 4.375$, $p =$

0.01); a *self-care* type (e.g. Health self-care, $M_{\text{bad}}= 3.501$ versus $M_{\text{excellent}}= 4.636$, $p = 0.01$); a *self-determination* type (e.g. Important decisions, $M_{\text{bad}}= 3.501$ versus $M_{\text{excellent}}= 4.830$, $p = 0.01$); a *social* type (e.g. Family contacts, $M_{\text{bad}}= 3.167$ versus $M_{\text{excellent}}= 4.581$, $p = 0.01$), and a *leisure and recreation* type (e.g. Tourist activities, $M_{\text{bad}}= 1.833$ versus $M_{\text{excellent}}= 2.945$, $p = 0.01$).

A greater use of social networks is associated with lower personal satisfaction. That said, the group who rated their personal satisfaction as excellent was the one that perceived the greatest benefits in the use of different Web 2.0 tools (e.g. Benefits-general life, $M_{\text{bad}}= 2.167$ versus $M_{\text{excellent}}= 3.585$, $p = 0.01$).

Table 4
Daily practices according to personal satisfaction

VARIABLES	Bad		Okay		Good		Excellent		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
Personal hygiene	4,501	0,905	4,846	0,449	4,901	0,369	4,953	0,213	7,746	0,001	0,021
Healthy eating	3,083	0,996	3,874	1,106	4,279	0,802	4,423	0,877	19,800	0,001	0,052
Self health care	3,500	1,243	3,923	0,920	4,385	0,751	4,636	0,599	32,979	0,001	0,084
Taking daily decisions	3,667	1,073	4,399	0,743	4,640	0,620	4,842	0,397	27,694	0,001	0,071
Taking important decisions	3,500	0,798	4,322	0,827	4,590	0,694	4,830	0,470	29,011	0,001	0,074
Decisions taken by other people	3,333	1,303	3,706	0,956	4,062	0,793	4,277	0,783	17,858	0,001	0,047
Planning ahead	2,750	0,754	3,601	1,056	3,847	1,148	4,083	1,243	9,243	0,001	0,025
Control of negative emotions	2,750	1,138	3,392	0,942	3,993	0,800	4,375	0,853	51,087	0,001	0,124
Money management	4,083	1,084	4,469	0,821	4,651	0,751	4,767	0,705	7,043	0,001	0,019
Access to necessary material things	3,250	1,138	4,231	0,802	4,513	0,658	4,680	0,601	27,559	0,001	0,071
Savings	3,583	1,311	4,028	1,014	4,199	0,934	4,289	0,988	3,847	0,009	0,011
Social support	2,500	0,905	3,685	1,024	4,029	0,987	4,213	1,121	16,914	0,001	0,045
Defence of own rights	3,333	1,073	4,007	0,843	4,316	0,802	4,648	0,666	28,604	0,001	0,073
Legal help	1,833	1,030	2,420	1,230	2,712	1,204	2,850	1,346	5,640	0,001	0,015
Physical activity	3,500	1,243	3,566	1,214	4,050	0,970	4,296	0,804	18,387	0,001	0,048
Mental activity	3,750	1,288	4,056	1,243	4,354	0,958	4,692	0,751	16,117	0,001	0,043
Visits from family	2,583	1,564	2,867	1,102	3,368	0,963	3,613	0,992	19,470	0,001	0,051
Visits from friends	2,167	1,030	2,580	0,953	2,934	0,913	3,198	0,939	16,531	0,001	0,044
Family reunion outside the home	2,333	0,888	3,070	0,998	3,416	0,869	3,561	0,836	15,464	0,001	0,041
Friends reunion outside the home	3,083	1,240	3,510	0,992	3,853	0,804	3,988	0,794	13,389	0,001	0,036
Contact with family	3,167	0,835	4,105	1,005	4,390	0,781	4,581	0,660	20,770	0,001	0,054
Contact with friends	3,750	1,288	4,203	0,893	4,410	0,749	4,609	0,631	12,515	0,001	0,033
Intimate relationships	1,917	1,165	2,434	1,231	2,971	1,169	3,138	1,238	13,965	0,001	0,037
Household chores	3,583	0,669	4,392	0,927	4,615	0,668	4,526	0,884	10,248	0,001	0,028
Leisure at home	3,833	1,193	4,294	0,854	4,510	0,738	4,585	0,754	7,564	0,001	0,021
Daily activities in the street	3,833	0,718	4,175	0,790	4,385	0,677	4,506	0,688	9,393	0,001	0,025
Tourism activities	1,833	0,577	2,322	0,577	2,726	0,737	2,945	0,829	27,339	0,001	0,070
Learning activities	2,750	1,288	3,643	1,218	3,897	1,083	4,123	1,014	10,631	0,001	0,029
Leisure activities	2,583	1,165	3,042	0,804	3,412	0,727	3,549	0,698	19,581	0,001	0,051
Civic participation activities	1,750	0,452	2,420	1,051	2,521	1,048	2,715	1,161	5,107	0,001	0,014
Volunteering	1,333	0,888	1,594	0,866	1,846	1,016	2,126	1,279	9,228	0,001	0,025
USE- Social networks	4,583	1,443	2,378	2,506	2,544	2,502	2,846	2,481	3,845	0,009	0,011
BENEFITS - physical and mental health	2,583	0,900	2,706	0,933	2,954	1,038	3,265	1,227	9,725	0,001	0,026
BENEFITS-social participation	1,750	1,288	2,091	1,150	3,331	1,080	3,664	1,216	10,190	0,001	0,027
BENEFITS-social network	2,633	1,467	2,776	1,165	3,191	1,082	3,411	1,243	9,887	0,001	0,029
BENEFITS-mood	2,500	1,087	2,727	0,921	3,034	0,983	3,257	1,189	9,275	0,001	0,025
BENEFITS-personal satisfaction	2,167	1,030	2,839	1,025	3,151	1,053	3,427	1,238	12,398	0,001	0,033
BENEFITS-general life	2,167	0,937	3,042	0,985	3,241	1,036	3,585	1,171	14,061	0,001	0,037
TOTAL BENEFITS	18,500	5,760	20,790	5,298	22,427	6,021	24,364	7,022	12,894	0,001	0,034

Life experiences according to perceived quality of life and personal satisfaction

According to perceived quality of life

Perceived quality of life seems to be particularly associated with stressful life experiences that have been had (Table 5). Individuals with a lower perceived quality of life indicated that they had experienced a greater number of negative emotions arising from stressful experiences. Moreover, it seems that the effects in the short and medium term and the current impact of these life experiences is higher in people with a lower quality of life, affecting all areas of the person's life, from physical and mental health to interpersonal relationships and even to work (e.g. Isolation effects, $M_{\text{bad}}= 2.143$ versus $M_{\text{excellent}}= 0.196$, $p = 0.01$). This may relate to a lower use of active coping strategies, with other kinds of strategies of an emotional type or ones based on denial, resignation and self-criticism being more common (e.g. Coping-self-criticism, $M_{\text{bad}}= 1.001$ versus $M_{\text{excellent}}= 0.239$, $p = 0.01$).

Table 5

Life experiences according to perceived quality of life

VARIABLES	Bad		Okay		Good		Excellent		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
FAVOURABLE LIFE EXPERIENCES											
Stage	12,857	2,673	10,973	4,302	12,023	3,798	12,061	3,678	2,730	0,043	0,007
Current impact	3,571	2,440	4,425	1,603	4,743	1,106	4,817	1,157	4,453	0,004	0,012
Current impact evaluation	2,571	2,225	3,646	1,598	4,317	1,176	4,548	1,199	18,093	0,001	0,048
Current impact-personal satisfaction	2,857	2,673	2,978	2,511	3,211	2,398	3,322	2,450	3,104	0,026	0,009
Current impact-social participation	0,714	1,890	0,752	1,796	1,199	2,136	1,457	2,277	2,888	0,035	0,008
STRESSFUL LIFE EXPERIENCES											
Area	59,286	34,087	43,673	26,118	38,470	29,219	35,278	30,011	3,317	0,019	0,009
Emotions-disgust	0,714	1,890	0,973	1,989	0,379	1,325	0,478	1,474	5,622	0,001	0,015
Emotions-anxiety	3,571	2,440	3,540	2,284	2,913	2,467	2,283	2,496	7,434	0,001	0,020
Emotions-hostility	2,143	2,673	0,841	1,878	0,586	1,336	0,500	1,503	6,447	0,001	0,018
Emotions-aggressiveness	2,143	2,673	0,531	1,547	0,183	0,939	0,109	1,069	11,020	0,001	0,030
Emotions-frustration	2,143	2,673	2,257	2,499	1,633	2,346	1,370	2,235	3,743	0,011	0,010
Emotions-shame	0,501	0,000	0,841	1,878	0,379	1,325	0,283	1,157	4,804	0,002	0,013
Emotions-guilt	0,714	1,890	1,150	2,114	0,623	1,653	0,522	1,532	3,832	0,010	0,010
Emotions-helplessness	4,286	1,890	1,903	2,438	0,949	1,962	0,845	2,004	13,226	0,001	0,035
Emotions-apathy	1,429	2,440	1,195	2,142	0,366	1,303	0,304	1,198	13,483	0,001	0,036
Coping-acceptance	2,143	2,673	2,080	2,475	2,812	2,482	2,935	2,467	3,468	0,016	0,010
Coping-denial	0,714	1,890	0,619	1,655	0,210	1,004	0,217	1,022	5,049	0,002	0,014
Coping-emotional support	0,714	1,890	2,080	2,475	2,696	2,494	2,804	2,498	4,200	0,006	0,011
Coping-resignation	1,429	2,440	1,770	2,402	1,172	2,120	1,001	2,004	3,445	0,016	0,009
Coping-self-criticism	1,001	0,001	0,973	1,989	0,346	1,269	0,239	1,069	8,827	0,001	0,024
Coping-positive reformulation	0,001	0,001	1,106	2,085	1,240	2,161	1,587	2,332	2,627	0,049	0,007
Effects-worse life	3,571	2,440	2,168	2,489	1,003	2,003	0,696	1,734	17,802	0,001	0,047
Effects-learning	0,714	1,890	1,726	2,388	2,785	2,485	2,957	2,463	8,498	0,001	0,023
Effects-addictions	1,000	0,001	0,265	1,126	0,088	0,658	0,001	0,001	4,225	0,006	0,012
Effects-physical health	0,714	1,890	0,664	1,704	0,312	1,210	0,326	1,237	2,697	0,045	0,007
Effects-mental health	1,000	0,001	1,681	2,373	0,495	1,494	0,413	1,380	20,115	0,001	0,053
Effects-social	0,714	1,890	1,593	2,340	0,413	1,378	0,261	1,114	24,000	0,001	0,062
Effects-finances	1,429	2,440	0,442	1,426	0,251	1,092	0,174	0,918	4,082	0,007	0,011
Effects-personal confidence	1,429	2,440	1,593	2,340	0,562	1,581	0,304	1,198	17,547	0,001	0,046
Effects-isolation	2,143	2,673	1,814	2,415	0,359	1,292	0,196	0,972	42,143	0,001	0,104
Effects-life control	0,714	1,890	0,752	1,796	0,237	1,064	0,196	0,972	7,439	0,001	0,020
Effects-neglect	0,714	1,890	0,531	1,547	0,108	0,729	0,109	0,731	9,113	0,001	0,025
Current impact	5,000	0,001	4,469	1,547	3,611	2,241	3,348	2,357	7,628	0,001	0,021
Current impact-physical health	2,857	2,673	0,885	1,917	0,440	1,418	0,435	1,412	8,946	0,001	0,024
Current impact-mental health	1,429	2,440	1,726	2,388	0,501	1,503	0,478	1,474	20,082	0,001	0,053
Current impact-mood	3,571	2,440	3,673	2,218	2,100	2,470	1,630	2,349	19,329	0,001	0,051
Current impact-social relations	2,857	2,673	2,080	2,475	1,145	2,102	0,935	1,954	9,292	0,001	0,025
Current impact-autonomy	0,714	1,890	1,062	2,054	0,556	1,572	0,457	1,443	3,913	0,009	0,011
Current impact- personal satisfaction	3,571	2,440	1,858	2,427	0,759	1,795	0,739	1,779	16,590	0,001	0,044
Current impact-social participation	0,714	1,890	1,062	2,054	0,434	1,408	0,435	1,412	6,028	0,001	0,016
Current impact-material	2,143	2,673	0,752	1,796	0,386	1,336	0,152	0,861	9,439	0,001	0,025
Current impact-work	0,714	1,890	0,487	1,489	0,264	1,119	0,130	0,799	3,001	0,030	0,008

According to personal satisfaction

The greatest personal satisfaction is associated with a more positive current impact from positive life experiences (e.g. Current impact- assessment, $M_{\text{bad}}= 2.833$ versus $M_{\text{excellent}}= 4.486$, $p = 0.01$), especially in the areas of physical and mental health, social participation and the work environment. All this combines with a lesser experiencing of the various negative emotions arising from stressful life experiences (e.g. Emotions- helplessness, $M_{\text{bad}}= 3.750$ versus $M_{\text{excellent}}= 0.949$, $p = 0.01$) as well as lesser effects in the short and medium term and a lesser current impact of these experiences (e.g. Effects- isolation, $M_{\text{bad}}= 2.917$ versus $M_{\text{excellent}}= 0.198$, $p = 0.01$). All of this may be due to a greater use of coping strategies of an adaptive type (e.g. Coping- acceptance, $M_{\text{bad}}= 1.250$ versus $M_{\text{excellent}}= 3.182$, $p = 0.01$). For more details, see Table 6.

Table 6

Life experiences according to personal satisfaction

VARIABLES	Bad		Okay		Good		Excellent		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
FAVOURABLE LIFE EXPERIENCES											
Stage	10,833	2,887	11,077	3,988	12,028	3,850	12,190	3,679	3,245	0,021	0,009
Emotions-satisfaction	2,501	2,611	3,182	2,414	3,250	2,387	3,696	2,201	2,989	0,030	0,008
Emotions-surprise	0,001	0,001	0,499	1,740	0,548	1,471	0,751	1,790	2,712	0,044	0,007
Emotions-life change	1,250	2,261	3,357	2,357	3,412	2,330	3,498	2,297	3,593	0,013	0,010
Effects-mental health	0,833	1,946	0,979	1,991	0,449	1,430	0,395	1,352	5,687	0,001	0,015
Effects-finances	1,250	2,261	0,734	1,776	0,441	1,419	0,395	1,352	2,974	0,031	0,008
Current impact-assessment	2,833	1,750	3,951	1,489	4,306	1,193	4,486	1,230	11,030	0,001	0,030
Current impact-physical health	0,417	1,443	0,839	1,875	0,993	1,996	1,924	2,211	2,623	0,049	0,007
Current impact-mental health	0,417	1,443	1,469	2,285	1,546	2,219	1,897	2,431	4,513	0,004	0,012
Current impact-social participation	0,833	1,946	0,834	1,776	1,184	2,127	1,542	2,314	4,584	0,003	0,013
Current impact-work	0,001	0,001	0,559	1,582	0,615	1,521	0,830	1,864	2,934	0,033	0,008
STRESSFUL LIFE EXPERIENCES											
Area	54,167	30,063	42,420	28,198	38,537	29,199	35,312	29,400	3,031	0,029	0,008
Emotions-disgust	1,250	2,261	0,944	1,964	0,460	1,294	0,435	1,412	7,717	0,001	0,021
Emotions-anxiety	3,750	2,261	3,252	2,393	2,978	2,456	2,233	2,491	7,760	0,001	0,021
Emotions-fear	2,917	2,575	1,888	2,433	1,493	2,290	1,245	2,167	3,967	0,008	0,011
Emotions-hostility	1,667	2,462	0,874	1,906	0,475	1,318	0,435	1,412	7,499	0,001	0,020
Emotions-aggressiveness	0,833	1,946	0,559	1,582	0,191	0,960	0,178	0,928	6,241	0,001	0,017
Emotions-frustration	2,500	2,611	2,308	2,501	1,574	2,324	1,423	2,261	5,344	0,001	0,015
Emotions-shame	1,250	2,261	0,769	1,810	0,397	1,353	0,178	0,928	7,410	0,001	0,020
Emotions-guilt	2,083	2,575	0,944	1,964	0,640	1,671	0,474	1,468	5,295	0,001	0,014
Emotions-helplessness	3,750	2,261	1,853	2,423	0,959	1,938	0,949	1,964	15,802	0,001	0,042
Emotions-envy	0,417	1,443	0,245	1,083	0,103	0,711	0,059	0,542	2,613	0,050	0,007
Emotions-apathy	2,500	2,611	0,874	1,906	0,375	1,318	0,296	1,183	14,625	0,001	0,039
Coping-acceptance	1,250	2,261	2,168	2,487	2,750	2,489	3,182	2,410	6,706	0,001	0,018
Coping-denial	0,717	1,443	0,629	1,664	0,206	0,994	0,178	0,928	6,508	0,001	0,018
Coping-emotional support	2,417	1,443	2,273	2,498	2,169	2,496	2,131	2,504	4,230	0,006	0,012
Coping-instrumental support	0,417	1,443	1,503	2,301	1,525	2,089	1,889	1,916	3,128	0,025	0,009
Coping-emotional discharging	0,000	0,000	0,734	1,776	1,316	2,204	1,328	2,025	4,771	0,003	0,013
Coping-resignation	2,917	2,575	1,538	2,316	1,154	2,109	1,047	2,039	4,354	0,005	0,012
Coping-self-criticism	1,667	2,462	0,874	1,906	0,338	1,257	0,178	0,928	12,793	0,001	0,034
Coping-positive reformulation	1,250	2,261	1,524	1,538	1,560	2,227	1,642	2,314	7,300	0,001	0,020
Effects-worse life	2,917	2,575	2,028	2,464	0,934	1,950	0,830	1,864	16,395	0,001	0,043
Effects-learning	1,250	2,261	1,503	2,301	2,882	2,472	2,945	2,465	14,905	0,001	0,040
Effects-dependency	0,417	1,443	0,245	1,083	0,081	0,631	0,000	0,000	5,345	0,001	0,015
Effects-physical health	1,250	2,261	0,629	1,664	0,301	1,191	0,296	1,183	4,746	0,003	0,013
Effects-mental health	1,667	2,462	1,469	2,285	0,485	1,481	0,356	1,288	19,364	0,001	0,051
Effects-social	2,083	2,575	1,224	2,157	0,404	1,364	0,296	1,183	18,703	0,001	0,049
Effects-personal confidence	2,500	2,611	1,573	2,330	0,529	1,540	0,237	1,065	28,349	0,001	0,073
Effects-isolation	2,917	2,575	1,224	2,157	0,397	1,353	0,198	0,976	28,551	0,001	0,073
Effects-life control	1,667	2,462	0,699	1,740	0,206	0,994	0,198	0,976	13,766	0,001	0,037
Effects-neglect	0,833	1,946	0,455	1,443	0,118	0,758	0,059	0,542	9,742	0,001	0,026
Current impact	5,000	0,000	4,091	1,935	3,684	2,204	3,261	2,386	6,092	0,001	0,017
Current impact-physical health	0,933	1,946	0,909	1,935	0,436	1,409	0,435	1,412	4,373	0,005	0,012
Current impact-mental health	1,667	2,462	1,399	2,252	0,685	1,481	0,534	1,547	14,299	0,001	0,038
Current impact-mood	5,000	0,000	3,077	2,441	2,125	2,474	1,660	2,359	15,849	0,001	0,042
Current impact-social relations	3,750	2,261	1,713	2,381	1,184	2,127	0,870	1,899	10,703	0,001	0,029
Current impact-autonomy	1,250	2,261	0,909	1,935	0,585	1,521	0,573	1,596	3,060	0,027	0,008

Current impact- personal satisfaction	3,750	2,261	1,608	2,344	0,757	1,794	0,692	1,730	18,555	0,001	0,049
Current impact-social participation	1,250	2,261	0,769	1,810	0,471	1,461	0,395	1,352	3,043	0,028	0,008
Current impact-material	2,500	2,611	0,490	1,491	0,404	1,364	0,178	0,928	12,810	0,001	0,034
Current impact-work	1,250	2,261	0,385	1,337	0,257	1,106	0,158	0,877	4,500	0,004	0,012

Psychological profiles according to perceived quality of life and personal satisfaction

According to perceived quality of life

The most positive levels of perceived quality of life were associated with psychological profiles characterized by higher rates of emotional intelligence (e.g. Total emotional intelligence, $M_{\text{bad}}= 17.429$ versus $M_{\text{excellent}}= 23.613$, $p = 0.01$), of achievement motivation (e.g. Total achievement motivation, $M_{\text{bad}}= 10.514$ versus $M_{\text{excellent}}= 12.001$, $p = 0.01$) and of self-efficacy in active ageing (e.g. Total self-efficacy, $M_{\text{bad}}= 37.714$ versus $M_{\text{excellent}}= 43.848$, $p = 0.01$), as well as by higher scores in the different items that assess the social dimension (e.g. Total social dimension, $M_{\text{bad}}= 28.857$ versus $M_{\text{excellent}}= 42.374$, $p = 0.01$) (Table 7).

In particular, and following the trend described above, with regard to emotional intelligence, distinguishing patterns were found in relation to the identification of individuals' own emotions and external emotions, emotional expression, emotional control and assertiveness. Adults and elderly people who perceive their quality of life in a more positive way obtained higher scores in intrinsic motivation (e.g. Total intrinsic motivation, $M_{\text{bad}}= 2.714$ versus $M_{\text{excellent}}= 4.404$, $p = 0.01$). In addition, they have a broader social network, better social skills and fewer feelings of loneliness, and they perceive social, instrumental and informational support. Although self-efficacy was high for the different variables analysed, it was greater in the group of individuals who perceived their quality of life in a more positive way (e.g. Self-efficacy social relations, $M_{\text{bad}}= 3.001$ versus $M_{\text{excellent}}= 4.883$, $p = 0.01$).

Table 7

Psychological profiles according to perceived quality of life

VARIABLES	Bad		Okay		Good		Excellent		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
Emotional intelligence - own emotions	2,001	1,000	3,841	0,714	4,194	0,642	4,348	0,655	15,381	0,001	0,041
Emotional intelligence-external emotions	2,857	1,069	3,593	0,775	3,831	0,601	4,039	0,593	19,613	0,001	0,051
Emotional intelligence - emotional expression	2,429	1,618	3,044	0,900	3,503	0,937	3,752	0,995	17,014	0,001	0,045
Emotional intelligence-emotional control	2,429	1,397	3,221	0,853	3,579	0,817	3,891	0,821	22,319	0,001	0,058
Emotional intelligence-assertiveness	2,857	1,215	3,478	1,010	3,848	0,880	4,126	0,900	16,403	0,001	0,043
TOTAL EMOTIONAL INTELLIGENCE	17,429	3,690	20,611	2,867	22,346	2,619	23,613	2,777	40,420	0,001	0,101
Achievement motivation	2,001	1,155	3,752	0,750	4,107	0,670	4,413	0,633	25,664	0,001	0,066
Motivation - intrinsic	2,714	1,113	3,673	0,784	4,106	0,703	4,404	0,728	27,364	0,001	0,070
TOTAL MOTIVATION	10,514	1,799	10,646	1,535	11,420	1,491	12,000	1,484	21,389	0,001	0,056
Attribution-success	6,286	6,800	4,274	4,770	3,211	3,402	2,857	2,757	6,056	0,001	0,016
SOCIAL DIMENSION-size	1,429	0,535	2,540	1,203	3,576	1,012	3,952	0,950	59,198	0,001	0,141
SOCIAL DIMENSION-social skills	3,571	1,272	3,106	1,175	3,774	0,912	4,152	0,758	33,174	0,001	0,084
SOCIAL DIMENSION-loneliness	1,714	1,113	2,628	1,174	3,904	1,029	4,365	0,860	85,755	0,001	0,192
SOCIAL DIMENSION - emotional support	2,714	1,704	3,487	1,087	4,184	0,838	4,548	0,651	47,549	0,001	0,116
SOCIAL DIMENSION-instrumental support	2,286	1,254	3,531	1,061	3,982	0,877	4,409	0,729	36,769	0,001	0,092
SOCIAL DIMENSION - information support	2,429	1,618	3,407	1,155	3,921	0,894	4,365	0,740	36,867	0,001	0,093
SOCIAL DIMENSION - subjective assessment	3,001	1,528	3,327	0,930	4,092	0,747	4,583	0,561	78,663	0,001	0,179
TOTAL SOCIAL DIMENSION	28,857	6,466	32,673	5,514	38,854	4,906	42,374	3,806	114,998	0,001	0,241
SELF-EFFICACY - personal care	4,571	1,134	4,708	0,593	4,881	0,426	4,978	0,174	12,007	0,001	0,032
SELF-EFFICACY - physical exercise	4,001	1,414	4,062	1,063	4,500	0,778	4,748	0,589	20,418	0,001	0,053
SELF-EFFICACY - mental activity	4,001	1,291	4,230	0,845	4,667	0,592	4,874	0,370	32,852	0,001	0,083
SELF-EFFICACY - household tasks	4,171	1,134	4,381	0,869	4,612	0,729	4,813	0,516	9,947	0,001	0,027
SELF-EFFICACY - activities outside the home	4,571	1,134	4,425	0,742	4,707	0,597	4,917	0,291	19,613	0,001	0,051
SELF-EFFICACY – social relationships	3,001	1,414	3,894	1,012	4,615	0,641	4,883	0,373	60,598	0,001	0,144
SELF-EFFICACY-learning activities	4,001	1,414	4,381	0,686	4,684	0,593	4,839	0,413	19,113	0,001	0,050
SELF-EFFICACY - leisure	4,001	1,414	4,221	0,810	4,654	0,611	4,865	0,401	31,294	0,001	0,080
SELF-EFFICACY - management of finances	4,001	1,732	4,416	0,776	4,696	0,573	4,930	0,287	25,670	0,001	0,066
TOTAL SELF-EFFICACY	37,714	9,995	38,717	4,819	42,018	4,048	43,848	2,155	47,126	0,001	0,115

According to personal satisfaction

The psychological profiles of adults and elderly people with a high perceived quality of life and high personal satisfaction are identical (Table 8). As a result, they are characterized by high scores in emotional intelligence (e.g. TOTAL EMOTIONAL INTELLIGENCE, $M_{\text{bad}}= 18.167$ versus $M_{\text{excellent}}= 23.802$, $p = 0.01$), achievement motivation (e.g. TOTAL EMOTIONAL INTELLIGENCE, $M_{\text{bad}}= 9.917$ versus

$M_{\text{excellent}} = 12.119$, $p = 0.01$), social dimension (e.g. TOTAL SOCIAL DIMENSION, $M_{\text{bad}} = 27.417$ versus $M_{\text{excellent}} = 42.340$, $p = 0.01$) and self-efficacy in active ageing (e.g. TOTAL SELF-EFFICACY, $M_{\text{bad}} = 39.001$ versus $M_{\text{excellent}} = 43.692$, $p = 0.01$).

Table 8

Psychological profiles according to personal satisfaction

VARIABLES	Mala		Regular		Buena		Excelente		F	p	η^2
	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ			
Emotional intelligence - own emotions	3,833	0,718	3,951	0,715	4,171	0,642	4,387	0,649	15,399	0,001	0,041
Emotional intelligence-external emotions	3,167	1,030	3,678	0,737	3,821	0,600	4,032	0,603	15,917	0,001	0,042
Emotional intelligence - emotional expression	2,500	1,168	3,049	0,944	3,509	0,923	3,783	0,986	22,981	0,001	0,060
Emotional intelligence-emotional control	3,001	1,206	3,245	0,833	3,547	0,816	3,972	0,794	29,548	0,001	0,076
Emotional intelligence-assertiveness	2,417	0,669	3,601	0,958	3,829	0,887	4,166	0,871	24,728	0,001	0,064
TOTAL EMOTIONAL INTELLIGENCE	18,167	2,855	20,860	2,734	22,279	2,627	23,802	2,676	50,208	0,001	0,122
Achievement motivation	3,417	0,900	3,776	0,716	4,103	0,659	4,455	0,632	38,710	0,001	0,097
Motivation - intrinsic	3,501	0,798	3,748	0,755	4,087	0,708	4,455	0,698	35,074	0,001	0,088
TOTAL MOTIVATION	9,917	1,311	10,734	1,529	11,402	1,469	12,119	1,459	33,165	0,001	0,084
Attribution-success	10,667	6,125	4,336	4,681	3,088	3,257	2,791	2,587	26,181	0,001	0,068
SOCIAL DIMENSION-size	1,667	0,985	2,839	1,191	3,554	1,021	3,960	0,959	49,320	0,001	0,120
SOCIAL DIMENSION-social skills	2,583	1,379	3,343	1,108	3,750	0,908	4,178	0,779	33,914	0,001	0,086
SOCIAL DIMENSION-loneliness	1,750	0,622	2,979	1,196	3,893	1,053	4,348	0,867	70,810	0,001	0,164
SOCIAL DIMENSION - emotional support	3,000	1,348	3,615	1,068	4,203	0,812	4,490	0,764	40,448	0,001	0,101
SOCIAL DIMENSION-instrumental support	2,667	1,073	3,629	1,026	3,984	0,876	4,379	0,765	33,655	0,001	0,085
SOCIAL DIMENSION - information support	2,667	1,436	3,524	1,106	3,926	0,887	4,324	0,790	33,134	0,001	0,084
SOCIAL DIMENSION - subjective assessment	3,167	1,267	3,503	0,949	4,093	0,741	4,542	0,613	65,147	0,001	0,153
TOTAL SOCIAL DIMENSION	27,417	5,648	34,168	5,354	38,804	4,863	42,340	4,138	113,445	0,001	0,239
SELF-EFFICACY - personal care	4,750	0,866	4,892	0,694	4,894	0,377	4,960	0,232	13,572	0,001	0,036
SELF-EFFICACY - physical exercise	4,083	1,165	4,126	1,074	4,512	0,767	4,715	0,596	18,345	0,001	0,048
SELF-EFFICACY - mental activity	4,333	0,888	4,315	0,834	4,651	0,600	4,897	0,341	30,917	0,001	0,079
SELF-EFFICACY - household tasks	4,667	0,888	4,329	0,970	4,653	0,667	4,739	0,626	10,892	0,001	0,029
SELF-EFFICACY - activities outside the home	4,367	0,888	4,476	0,777	4,715	0,562	4,881	0,429	15,443	0,001	0,041
SELF-EFFICACY - social relationships	3,583	1,311	4,147	0,927	4,599	0,669	4,877	0,363	46,311	0,001	0,114
SELF-EFFICACY-learning activities	4,333	0,888	4,441	0,784	4,666	0,584	4,874	0,378	19,151	0,001	0,050
SELF-EFFICACY - leisure	4,250	0,965	4,315	0,859	4,650	0,603	4,858	0,403	25,945	0,001	0,067
SELF-EFFICACY - management of finances	4,333	1,231	4,448	0,775	4,709	0,562	4,889	0,372	20,247	0,001	0,053
TOTAL SELF-EFFICACY	39,001	7,520	39,287	5,443	42,049	3,872	43,692	2,502	41,072	0,001	0,102

4. Discussion

The established objective has been achieved, and we have been able to obtain a response to the question that guided this study. There are differences in the daily practices, life experiences and psychological profiles of adults and elderly people according to perceived quality of life and personal satisfaction.

The results obtained support the existence of various *practices* that, based on empirical evidence, may contribute to promoting quality of life and personal satisfaction. Therefore, a high perceived quality of life and high personal satisfaction are associated with a higher frequency of carrying out such practices. One of the main contributions of this study is the identification of the practices that have the most positive influence on both constructs. Five main categories can be highlighted: (i) *psychological practices* (e.g. control of negative emotions); (ii) *self-care practices* (e.g. self-care health practices: going to the doctor as a preventive measure, controlling blood pressure levels, sugar intake-, healthy eating, maintaining personal hygiene); (iii) *self-determination practices* (e.g. decision making, planning for the future); (iv) *social practices* (e.g. contact with family and friends, social support), and (v) *leisure and recreation practices* (e.g. recreational activities, tourist activities). That said, we must not forget the impact on these two constructs of other practices such as those related to learning, civic participation and volunteering. Therefore, this study identifies the practices to be taken into account when promoting the different dimensions of quality of life included in a large proportion of the existing theoretical approaches to this construct (Gómez et al. 2015). Within these practices, a special place is reserved for discussion of the *use of Web 2.0 tools* and the *perceived benefits*. With regard to *use*, we only detected a trend that suggests that the increased use of social networks is associated with lower levels of personal satisfaction. In line with previous investigations, this may be due to the use of social networks as a means of coping, refuge or escape, with the object of promoting mental disconnection, a search for information and support (Chan 2015; Li et al. 2010; van Ingenn et al. 2016). That said, in relation to *benefits*, it can be observed that the adults and people who describe both their quality of life and personal satisfaction as excellent also perceived greater benefits derived from the use of Web 2.0 tools, in terms mainly of

the benefits on physical health and mental health of an emotional and social kind. Other studies had already described benefits of a cognitive, social, affective-emotional, physical, self-regulatory and behavioural management, and self-efficacy kind, and in general, they had demonstrated the potential of these tools to promote physical and mental health, quality of life, well-being and life satisfaction (Chen and Schulz, 2016; Díaz-Prieto and García-Sánchez, 2016; Khosravi and Ghapanchi, 2016; Zhan et al. 2016). However, until now, there had been no study of the inverse relationship—that is, patterns of use and perceived benefits that underpin a particular perception of quality of life and personal satisfaction. This is what our study provides.

With regard to *life experiences*, stressful life experiences seem to be the ones that have the greatest impact, in terms of both quality of life and personal satisfaction. Accordingly, adults and elderly people with a lower quality of life and personal satisfaction experience a greater number of negative emotions arising from such experiences, coupled with a greater impact in the short and medium term and a greater current impact (Grinde 2016). All of this may be due to the increased use of disadaptive strategies such as denial, resignation and self-criticism, at the expense of active coping strategies. In contrast, people with a high quality of life and personal satisfaction may exhibit a more positive impact from life experiences, as well as lesser emotional consequences and effects on other dimensions of their lives (physical and mental health; autonomy; and social, economic and work factors, among others). These results support previous studies. For example, Hentschel et al. (2017) found that certain life events such as deteriorating finances or serious injury/illness have a greater impact on emotional well-being. However, although distinguishing patterns exist, these are not clear. This may confirm the hypothesis of adaptation analysed in previous studies, according to which human beings apparently have the ability to cope with life events, both positive and stressful, by always returning to a state of life satisfaction (Misheva 2016).

Hentschel et al. (2017) have pointed out how certain personality traits such as emotional stability and extraversion have a greater impact on emotional well-being. These findings combine with those obtained in this study with respect to the

distinguishing psychological profiles resulting from the various perceptions of quality of life and personal satisfaction. It should be noted that, in general, adults and elderly people with higher levels of perceived quality of life and personal satisfaction presented higher scores in all the psychological indicators evaluated, namely: emotional intelligence, achievement motivation, self-efficacy in active ageing and social dimension. With regard to emotional intelligence, people with a high quality of life and personal satisfaction are more skilled in identifying and acknowledging their own emotions and those of others, in expression and emotional control, and in assertiveness. In terms of the social dimension, their social support networks are larger and they display better social skills and a greater perception of emotional, instrumental and informational support. Probably for this reason, a lesser feeling of loneliness and a more positive subjective evaluation of their social support network were detected. With regard to self-efficacy in active ageing, higher scores were found in self-efficacy in personal care, physical exercise, mental activity, household chores, activities outside the home, leisure activities, learning activities and activities focused on the establishment of social relations and the management of personal finances. Finally, higher scores were detected in achievement motivation and, in particular, in intrinsic motivation. As a result, there may be certain psychological tools that exercise a protective role, contributing to an enhancement of quality of life and satisfaction with oneself, and that, therefore, should be taken into consideration in any intervention aimed at the improvement of these constructs (Boyer et al. 2017).

In spite of the contributions described above, this study presents a number of methodological limitations relating to the sample, and these must be taken into consideration. First, we should point out the issues stemming from the tool used to implement the instrument, *Google Forms*. Problems related to privacy, the inability to set a password and save the answers without the need to finish the questionnaire and certain technical problems that led to the deletion of some answers were the main constraints encountered in this regard. That said, in general, the researchers were able to solve most of these problems during the design and implementation phases of the instrument. Necessary adjustments were made, and these difficulties did not to a large extent affect the results obtained. Thinking about the future, these

methodological limitations could be overcome by implementing the instrument through other tools such as *SurveyMonkey*. In relation to the sample, and probably due to the voluntary nature of participation in the study, factors such as the motivation of participants to respond to the instrument, which in turn could be influenced by the socio-economic level of the participants, had their impact on the sample obtained. In addition, the need for technological resources and basic digital competence also affected the final sample obtained. This leads us to consider the possibility that the results obtained here may vary in populations with different demographic, educational and economic characteristics, meaning that there are difficulties in drawing generalizations from them.

Ultimately, this study shows the types of daily practices, life experiences and psychological profiles that lie behind different perceptions of perceived quality of life and personal satisfaction in adults and the elderly in Spain. The results obtained here could contribute to the development of more successful psychological and social interventions. They reveal a set of indicators that, based on empirical evidence, should be part of any intervention design oriented toward promoting quality of life, personal satisfaction and well-being.

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**Otras publicaciones
generadas durante la
formación predoctoral**

Junto a los estudios que integran la tesis doctoral, se generaron otras publicaciones que complementan la formación investigadora de la doctoranda y contribuyen al cumplimiento de los objetivos planteados al inicio de esta tesis doctoral, a saber: (i) Hacer una tesis de calidad dentro de los estándares en el campo a nivel internacional, y (ii) crear un currículum competitivo y de excelencia.

Capítulos de libro

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Discusión y conclusiones

Discusión y conclusiones

Los objetivos de esta tesis doctoral se han logrado, respondiendo a las preguntas de investigación que guiaron la misma. Esta tesis doctoral identifica los factores que repercuten en el uso de internet y de las herramientas de la web 2.0 en adultos y mayores, incluyendo factores relativos a las propias herramientas, así como a los perfiles psicológicos y las experiencias vitales personales. Asimismo, se ha constatado el impacto de todos estos constructos sobre la calidad de vida y la satisfacción personal.

De acuerdo con los objetivos y las preguntas de investigación que guiaron este estudio, se presentan las principales aportaciones de esta tesis doctoral.

Los resultados obtenidos confirman los constructos psicosociales y emocionales como focos de interés emergentes de la investigación gerontológica. Lo cierto es que en la actualidad, a pesar de constituirse como competencias fundamentales para favorecer la calidad de vida y el bienestar, contribuyendo a mejorar la salud física y mental y repercutiendo sobre las diferentes dimensiones de la persona (cognitiva, social, afectivo-emocional, entre otras), se ha detectado un bajo interés de la investigación por estos constructos, enfocándose ésta principalmente sobre aspectos físicos y cognitivos.

Atendiendo al contexto actual, marcado por el imparable avance la tecnología y especialmente, de internet y de las diferentes herramientas virtuales y de la web 2.0, nuestro interés se volcó en la revisión de la literatura existente en relación al uso de estas herramientas como medio para la implementación de intervenciones con personas adultas y mayores, dadas las plausibles ventajas de éstas al permitir la eliminación de barreras de espacio y tiempo. De nuevo se confirmó un escaso interés por parte de la investigación, especialmente en relación al uso de las herramientas de la web 2.0 y sobre todo, enfocados a la optimización de constructos psicosociales y emocionales, centrándose en la mayoría de las ocasiones sobre las facetas cognitiva y física del adulto mayor (García-Casal, 2017).

Dada la escasa investigación existente, el siguiente paso fue analizar la viabilidad de la implementación de intervenciones virtuales sobre envejecimiento activo, analizando los factores que condicionan la eficacia de las intervenciones y comparándola con la modalidad presencial. De este modo, se pretendía determinar si existían razones fundamentadas que justificasen la escasez de estudios al respecto. Se constató que la eficacia de las intervenciones sobre envejecimiento activo y calidad de vida no está condicionada por la modalidad de intervención, lo que ya se había confirmado también en otros grupos de edad y campos (Chen, Siau, & Nah, 2012; Wagner, Horn, & Maercker, 2014), sino por el cumplimiento de los indicadores de las intervenciones basadas empíricamente y por otras variables moduladores relativas al diseño y la muestra.

En relación a los indicadores de las intervenciones basadas en la evidencia empírica (registro de las sesiones, tipo de registro, entrenamiento de los instructores, protocolo de intervención, contraste modalidad de intervención, generalización, seguimiento), se observa cómo, independientemente de la modalidad de intervención, a partir de cuatro indicadores, el efecto de las intervenciones es grande.

Existen ciertas características relativas al diseño de las intervenciones que podrían estar condicionando también el efecto de las mismas. Así, por ejemplo, el predominio de un diseño de tan sólo dos grupos, uno control y otro experimental, pre-post generalmente sin seguimiento y con muestras por lo general bastante pequeñas y una participación mayoritariamente femenina, podría afectar a la eficacia de los programas.

Del mismo modo, otras características relativas a los participantes como son la edad media, el nivel educativo o socioeconómico, de autonomía y la presencia o no de enfermedad y/o trastorno, podrían ejercer su influencia. De hecho, se constata una tendencia definida por descenso de la eficacia de las intervenciones a medida que aumenta la edad media.

En definitiva, si las intervenciones virtuales pueden ser tan eficaces como las presenciales estando esta eficacia condicionada por el cumplimiento de los controles IBE y el cuidado de aspectos relativos al diseño y los participantes, abogamos por el uso de herramientas virtuales como medio de implementación de las intervenciones en

tanto que pueden resultar un método más eficiente y rentable (Lappalainen et al., 2014; McCutcheon, Lohan, Traynor, & Martin, 2014)

Ahora bien, si las herramientas virtuales y de la web 2.0 pueden ser importantes recursos a la hora de favorecer la calidad de vida y un envejecimiento saludable, ¿por qué adultos y mayores acceden en menor medida a ellas?; ¿cuáles son las razones que justificarían dicha brecha digital?; ¿relativas a las propias herramientas y/o a factores de tipo personal?

Uno de los principales problemas hallados es la escasez de recursos web específicamente orientados al colectivo de personas mayores para la promoción de variables de envejecimiento activo y más específicamente, competencias psicosociales y emocionales, abundando aquellos dirigidos a la mejora de variables de tipo cognitivo. Por tanto, si no existe una amplia oferta de recursos web dirigida a este colectivo y adaptada a sus necesidades, intereses y capacidades en vista de los resultados obtenidos (Yang y Chen, 2015), se halla inicialmente una importante barrera para cuya demolición se hace necesaria la implicación de estamentos gubernamentales, científicos y sociales. Ahora bien, parece ser que esta implicación por el momento es insuficiente, ya que los recursos de disponibilidad online dirigidos a adultos mayores son desarrollados principalmente por organizaciones no gubernamentales y de autoayuda, a pesar de los esfuerzos que en los últimos años se ha hecho por impulsar programas de alfabetización digital para estos potenciales usuarios (Abad, 2014). Los resultados apuntan hacia una finalidad principalmente informativa de estos recursos. Si tenemos en cuenta que la investigación previa señala como uno de los principales finalidades con la que adultos y mayores utilizan internet la informativa, se nos plantea otra duda, ¿es la finalidad principalmente informativa de los recursos la que condiciona esos resultados o por el contrario, es realmente esa una de las principales necesidades e intereses de adultos y mayores?

Asimismo, los resultados obtenidos indican que los recursos web dirigidos a adultos y mayores están principalmente desarrollados desde el ámbito de ocio y entretenimiento. Probablemente ello justifique la ausencia de evaluación funcional, lo que pone en vilo la eficacia y eficiencia, así como la rigurosidad y veracidad de la información contenida

en los mismos (Brigo, Otte, Igwe, Tezzon & Nardone, 2015). Complementariamente, a través de esta tesis doctoral se han identificado importantes limitaciones relativas a la accesibilidad y usabilidad de los recursos web dirigidos a adultos y mayores. A diferencia de lo que ocurre en otros grupos de edad, en el caso de adultos y mayores, la accesibilidad de los recursos es media, existiendo importantes carencias relativas a las ayudas de accesibilidad y uso. Aunque la modalidad de acceso es pública en la mayoría de los casos, lo cierto es que, si lo que queremos es garantizar una accesibilidad universal, se hace necesario invertir más esfuerzos orientados a simplificar el diseño y las funciones de pantalla; favoreciendo la legibilidad y fiabilidad del contenido utilizando un lenguaje claro y conciso, una adecuada disposición y presentación del contenido, y evaluaciones objetivas y profesionales que garanticen la calidad de la información; favoreciendo la interactividad con el usuario y otros usuarios; y, proporcionando información en línea y retroalimentación que sea de ayuda para el adulto mayor (Luna-García, Mendoza-González & Álvarez-Rodríguez, 2015).

Una vez detectadas importantes limitaciones relativas a las propias herramientas, el foco de la investigación se orientó a los factores de tipo personal, tanto en relación al análisis de los patrones de uso de las herramientas de la web 2.0, como otras variables de tipo psicosocial, emocional y personal, que podrían estar en la base de la brecha digital de tipo generacional actualmente existente (Wu et al., 2015).

En relación a los patrones de uso, los resultados obtenidos en esta tesis doctoral confirman los de investigaciones previas. Los adultos mayores poseen un conocimiento básico sobre el ordenador e internet, el cual está condicionado por la edad, el nivel educativo y probablemente, la escasa formación recibida (Agudo et al., 2012; Martínez-Pecino et al., 2013; González et al., 2015). A pesar de ello, la mayoría de los usuarios indican no percibir dificultades a la hora de acceder y utilizar internet, lo que podría ser resultado del impulso que en los últimos años se está dando a los planes de formación. Entre los que perciben dichas dificultades, aluden a tres tipos: (i) *Barreras de tipo intrapersonal* (falta de interés, escasa adaptación a sus necesidades, falta de percepción de utilidad y beneficios potenciales; problemas físicos o psíquicos); (ii) Barreras de tipo contextual (falta de formación; falta de medios o alto coste de los mismos); y finalmente, (iii) Barreras dependientes de la propias herramientas (aspectos de

confidencialidad, privacidad; falta de aplicaciones específicas; factores relativos a accesibilidad y usabilidad determinados por la falta de adaptación de las herramientas a sus capacidades) (Kwong, 2015; Lee & Coughlin, 2015).

El uso de las diferentes herramientas de la web 2.0 está condicionado por la edad, el nivel educativo y el género. De este modo, disminuye con la edad, aumenta con el nivel educativo y varía en función del género. Existe un uso mayoritario en este colectivo de lo que podríamos llamar herramientas “tradicionales” como son el correo electrónico, los navegadores y las herramientas de ofimática. Además, se constata un uso funcional de estas herramientas, es decir, los usuarios mayores tienden a utilizar aquellas herramientas que mejor satisfacen sus necesidades e intereses (Abad, 2014).

Dentro de este estudio de los patrones de uso, se reservó un apartado especial para el análisis de los beneficios percibidos. Estos beneficios están condicionados por la edad y el nivel educativo, aunque en líneas generales los usuarios refieren beneficios sobre la autonomía, la motivación, la dimensión social, la participación social, el estado de ánimo, la autoestima y en general, la salud física y mental, confirmando de este modo los resultados obtenidos en investigaciones previas que aluden a importantes efectos del uso de internet sobre variables que favorecen la calidad de vida y el bienestar de las personas mayores (Hayes et al., 2015).

Finalmente a este respecto, otra de las principales aportaciones de este trabajo es la identificación de los perfiles psicológicos diferenciales de usuarios y no usuarios de las diferentes herramientas de la web 2.0. A grandes rasgos, los usuarios mayores de estas herramientas presentan perfiles psicológicos marcados por mayores puntuaciones en diferentes variables de envejecimiento activo en relación a los no usuarios. Estos datos apoyarían los resultados obtenidos en investigaciones previas realizadas con otros grupos de edad que apuntan a la existencia de determinados rasgos psicológicos o de personalidad que condicionarían los patrones de uso de ciertas herramientas de la web 2.0 (Andreassen, Pallesen, & Griffiths, 2017). Sin duda, estos perfiles psicológicos podrían estar relacionados y condicionar, tanto el uso de estas herramientas como los beneficios percibidos (Blachnio, Przepiorka, Senol-Durak, Durak, & Sherstyuk, 2017; Buffardi, & Campbell, 2008). Esta información resulta de gran relevancia con vistas a

adaptar las herramientas de la web 2.0 a las necesidades y capacidades de los adultos mayores, así como de cara a diseñar o implementar programas a través de estas herramientas que pudieran favorecer variables estrechamente vinculadas a la calidad de vida en el colectivo de adultos mayores.

Si las características intrínsecas de las propias herramientas, factores relativos a los patrones de uso tales como la formación recibida, la finalidad de uso o los beneficios percibidos, y otros de tipo personal asociados al perfil psicológico de adultos y mayores podrían condicionar el uso de las herramientas de la web 2.0, otra posibilidad es que la propia historia personal también pueda ejercer su influencia. Para analizar tal cuestión, se procedió al estudio del papel de las experiencias vitales.

Se constató cómo las experiencias vitales influyen tanto en un plano más personal asociado a los perfiles psicológicos y la calidad de vida percibida de adultos y mayores, como sobre las prácticas cotidianas, incluyendo el uso de las herramientas de la web 2.0. La gran mayoría de los estudios hasta el momento se había centrado en el análisis de los eventos vitales estresantes y sus consecuencias (Kendler, & Gardner, 2016; Mayo et al., 2017; Pan et al., 2017), si bien, una de las principales aportaciones de este trabajo es el análisis del papel de las experiencias favorables, las cuales influirían especialmente sobre los perfiles psicológicos de los individuos y el uso de las herramientas de la web 2.0. Las experiencias vitales estresantes, por su parte, marcarían en mayor medida los patrones diferenciales en calidad de vida percibida y prácticas cotidianas. No obstante, en línea con estudios previos, sería el conjunto de experiencias de una persona el que perfila su identidad, su personalidad, su estilo de vida y repercute en su estado de salud física y mental y su bienestar (Blonski et al., 2016).

Estudios previos han demostrado el papel de las experiencias vitales sobre la calidad de vida y el bienestar (Pocnet et al., 2016), pero sin especificar los ámbitos de influencia. Asimismo, han observado un impacto de las experiencias, principalmente estresantes, sobre los perfiles psicológicos (Lasgaard et al., 2016). En esta tesis doctoral se constata como las experiencias vitales, en función de su signo y tipo específico, definen patrones diferenciales en relación al plano interpersonal, el ámbito económico y ocupacional, así como la satisfacción personal, la valoración de sus vidas en general y la puntuación

global en calidad de vida. Además, ambos tipos de experiencias modelan los perfiles psicológicos de los usuarios, incidiendo sobre la dimensión emocional, social y de autoeficacia, aunque tan sólo las favorables marcan diferencias en el plano motivacional.

Por otro lado, las experiencias vitales perfilan y definen las prácticas cotidianas llevadas a cabo sobre los dominios de salud física y mental, social, material, de autodeterminación y funcional, así como en el bienestar emocional. Todo ello, contribuye a la mejora de la calidad de vida, tal y como demuestran diferentes estudios previos (Gómez, Verdugo, & Arias, 2015).

Las condiciones de vida más favorables se han asociado con un mayor uso de internet y de las herramientas de la web 2.0 (Lai & Kwan, 2017), de ahí que sean las experiencias vitales favorables las que más incluyen sobre los el uso de prácticamente la totalidad de las herramientas estudiadas. Si bien, son las experiencias vitales desfavorables las que determinan mayores diferencias en los beneficios percibidos en relación a la salud física y mental y la satisfacción personal, apoyando el uso de estas herramientas como vía de afrontamiento en línea con investigaciones anteriores (Li, Zou, Wang, & Yang, 2016).

Tras analizar estas complejas relaciones, nuestro interés se centró en el estudio de los perfiles psicológicos, tipos de experiencias vitales y prácticas cotidianas, incluyendo el uso de las herramientas de la web 2.0, que subyacen a diferentes percepciones de calidad de vida con el fin de identificar aquellos elementos que podrían hallarse en la base de una alta calidad de vida. Así, el último estudio de la presente tesis doctoral proporciona datos al respecto.

Los adultos y mayores con alta calidad de vida y satisfacción personal tendrían un perfil psicológico marcado por más altas puntuaciones en todos los constructos psicológicos evaluados: inteligencia emocional, motivación de logro, autoeficacia en el envejecimiento activo y dimensión social. En lo que respecta a la inteligencia emocional, los adultos y mayores con altas puntuaciones en estos dos constructos puntuarían más alto en identificación y reconocimiento, tanto de las emociones propias como de las ajenas, en expresión y control emocional, así como asertividad. Además,

poseen redes de apoyo social más amplias, mejores habilidades sociales y una mayor percepción de apoyo emocional, instrumental e informativo, lo que se traduce en menores sentimientos de soledad y una evaluación subjetiva más positiva de su red de apoyo social. Además, presentan mayores niveles de autoeficacia para el cuidado personal, el ejercicio físico, la actividad mental, las tareas del hogar, actividades fuera del hogar, de ocio, formativas y para el establecimiento de relaciones sociales y el manejo de las finanzas personales. Por último, se detectan mayores puntuaciones en motivación de logro y en concreto, en motivación intrínseca. Todos estos elementos constituyen poderosas herramientas personales a tomar en consideración a la hora de favorecer la calidad de vida y la satisfacción personal (Boyer et al. 2017).

Algunos estudios previos constatan cómo ciertos acontecimientos vitales repercuten sobre el bienestar (Hentschel, Eid, & Kutscher, 2017). En esta línea, este estudio halla evidencias que asociarían las experiencias vitales estresantes con menores niveles de calidad vida y satisfacción personal, en contraposición a las favorables asociadas a niveles más altos. Los adultos y mayores con baja calidad de vida experimentan un mayor número de emociones negativas derivadas de dichas experiencias vitales, a lo que se une mayores efectos a corto y medio plazo y un mayor impacto actual (Grinde, 2016), lo que podría asociarse a un uso desadaptativo de las estrategias de afrontamiento. Sin embargo, una alta calidad de vida y satisfacción personal se asocia a un impacto actual más positivo de las experiencias vitales favorables, así como menores consecuencias emocionales y efectos sobre otras dimensiones de sus vidas (salud física y mental, autonomía, social, económico y laboral, entre otros).

Finalmente, la última aportación de este estudio tiene que ver con la identificación de aquellas prácticas que se encuentran en la base de una alta calidad de vida y satisfacción con uno mismo. En este sentido, es posible hablar de cinco grupos de prácticas que influyen de manera especialmente favorable sobre la calidad de vida, a saber: (i) *prácticas psicológicas* (e.g. control de emociones negativas); (ii) *prácticas de autocuidado* (e.g. autocuidado de salud-ir al médico de manera preventiva, controlar niveles de tensión, azúcar-, alimentación saludable, higiene personal); (iii) *prácticas de autodeterminación* (e.g. toma de decisiones, planificación del futuro); (iv) *prácticas sociales* (e.g. contacto con familiares y amigos, apoyo social), y (v) *prácticas lúdicas y de ocio* (e.g. actividades lúdicas,

actividades turísticas). Si bien, no hay que olvidar el impacto sobre estos dos constructos de otro tipo de prácticas como son las formativas, de participación ciudadana y voluntariado. Por otro lado, en lo que respecta al uso de las herramientas de la web 2.0, tan solo una baja satisfacción personal se asocia con un mayor uso de redes sociales, lo que puede explicarse en base a estudios que sugieren el uso de estas herramientas como refugio o vía de escape ante los problemas (Chan, 2015; Li et al., 2010; van Ingenn, Utz, & Toepoel, 2016). Si bien, una alta calidad de vida y satisfacción personal se relaciona con una mayor percepción de beneficios derivados del uso de las herramientas de la web 2.0, refiriéndonos principalmente a beneficios sobre la salud física y mental, de tipo emocional y social, demostrando por tanto el potencial de estas herramientas para la mejora de la calidad de vida y el bienestar de adultos y mayores (Chen & Schulz, 2016; Khosravi & Ghapanchi, 2016; Zhan, Sun, Wang, & Zhang, 2016).

A pesar de las numerosas aportaciones de esta tesis doctoral, lo cierto es que existen una serie de limitaciones que deben ser tomadas en consideración y abordadas en futuras investigaciones.

En relación al primer estudio, por razones de operatividad y la imposibilidad de acceder al material, ha sido imposible recoger y analizar toda la investigación existente en relación a los diferentes constructos abordados en esta tesis. Sin embargo, esto no reduce el valor científico de este estudio, ya que entendemos que el margen temporal establecido, así como el número de estudios analizados es lo suficientemente amplio y representativo de la investigación existente en relación a esta temática. No obstante, como futura línea de investigación sería interesante un mayor interés por los constructos psicosociales y emocionales, dada su plausible incidencia sobre la calidad de vida y el bienestar.

En cuanto al segundo estudio, por razones ajenas a los investigadores, el número de intervenciones en modalidad virtual es inferior a las presenciales. Además, a la hora de interpretar el tamaño del efecto, se recurrió a la clasificación ampliada de Rosenthal (1996), lo que podría haber limitado los resultados. A todo ello se unen las dificultades de generalización. Las futuras líneas de investigación además de subsanar estas

limitaciones, deberían orientarse al diseño de intervenciones en cualquier modalidad de intervención que tengan en cuenta el papel que desempeñan los controles IBE. No obstante, teniendo en cuenta el contexto actual, la ausencia de diferencias en la eficacia de ambas modalidades de intervención y las ventajas que ofrecen estas herramientas a la hora de superar las barreras de espacio y tiempo, se aboga por impulsar las virtuales.

Por lo que respecta al tercer estudio, cabe destacar las dificultades de generalización al ser internet un espacio dinámico. Por otro lado, el protocolo de codificación puede ser sometido a modificaciones y mejoras, a pesar de ser fruto de una minuciosa revisión de estudios en el campo. Este estudio indaga sobre una de las posibles causas de la brecha digital haciendo una revisión objetiva de recursos existentes en la web dirigidos a adultos y mayores. Si bien, estos resultados pueden y deben ser complementados con la percepción de los propios interesados, limitación subsanada en el estudio 6 de la presente tesis doctoral.

Se hallan también importantes limitaciones en los estudios que analizan los patrones de uso de las herramientas de la web 2.0 y los perfiles psicológicos. Atendiendo al cuarto estudio, de nuevo destacan las dificultades de generalización. Por lo que respecta al quinto y sexto estudio, encontramos limitaciones derivadas de la propia herramienta de implementación de las encuestas, *Google Formularios*, y que tienen que ver con la propia política de privacidad, la imposibilidad de establecer una contraseña, problemas técnicos de la herramienta que han obligado a la eliminación de respuestas, el rango limitado de cuestiones, ausencia de una lógica de exclusión, imposibilidad de guardar las respuestas a medida que se avanza en el cuestionario pudiendo perder toda la información introducida en caso de fallo en la conexión o en la aplicación, entre otras. A pesar de existir, en su mayoría, estas limitaciones fueron subsanadas durante el diseño e implementación de la encuesta, no afectando a los resultados obtenidos. No obstante, existen otras herramientas, como por ejemplo *SurveyMonkey*, que ofrecen mayores funcionalidades y que de cara al futuro, podrían ser empleadas para superar estas limitaciones. Por otro lado, determinados factores relativos a la muestra pueden haber condicionado los resultados. Entre ellos, es posible destacar la necesidad de disponer de recursos tecnológicos y una competencia digital básica, factores de motivación o el nivel socioeconómico de los participantes. Estas limitaciones son

aplicables a las dos últimas investigaciones incluidas en esta tesis. Como futura línea de investigación, sería interesante comprobar estos resultados en poblaciones con características sociodemográficas, educativas y económicas diferentes.

Se concluye pues en el creciente interés que suscitan las herramientas de la web 2.0 en el colectivo de personas adultas y mayores quienes, a pesar de las barreras que condicionan su uso, ven importantes beneficios de éstas al permitirles satisfacer sus necesidades informativas, comunicativas, de ocio, formación y gestión y por los importantes beneficios físicos, psicológicos, sociales y emocionales derivados de su uso (Myhre, Mehl, & Glisky, 2016).

Si los resultados confirman que las intervenciones virtuales para favorecer el envejecimiento activo pueden llegar a ser tan eficaces como las metodologías más tradicionales en modo presencial cuidando el cumplimiento de los indicadores de las intervenciones basadas empíricamente (IBE), es necesario promover la proliferación de estudios que empleen tecnologías virtuales en tanto que puede resultar un método más eficiente y rentable (Sijbrandij, Kunovski, & Cuijpers, 2016)

A la hora de diseñar estas intervenciones y hacer que resulten más eficaces y eficientes para el fomento de la calidad de vida y el bienestar y adaptadas a las características particulares de adultos y mayores, sería importante tener en cuenta no solo los aspectos relativos al diseño, incluyendo elementos de accesibilidad y uso, calidad de la información, existencia de evaluación funcional, entre otros, sino también diferentes constructos de tipo personal, entre los que se incluyen las diferentes variables de tipo psicosocial y emocional que integran el perfil psicológico de cada persona, así como todo cuanto conforma sus historias personales, incluyendo las experiencias vitales y prácticas cotidianas.

Si bien, se necesita una mayor implicación institucional, social y científica para aprovechar al máximo las posibilidades que brinda internet, así como para superar las limitaciones y barreras halladas, tanto de tipo tecnológico como personal, las cuales podrían constituirse como algunas de las causas de la brecha digital de tipo generacional existente.

Partiendo de los resultados obtenidos y como una futura línea de investigación, sería interesante proceder al diseño de intervenciones virtuales a través de las diferentes herramientas de la web 2.0 que promuevan la calidad de vida y el bienestar de adultos y mayores, favoreciendo una adecuada adaptación a esta etapa vital y a la coyuntura social actual.

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Referencias

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Abstract

Abstract

Background

We are witnessing a period marked by an ongoing process of population ageing, which is linked to the unstoppable advance of technology, especially the Internet and Web 2.0 tools. In this context, the needs of adults and seniors are increasingly complex, requiring urgent political, social and scientific responses as a means of guaranteeing their quality of life and well-being.

Consequently, the gerontological research has been recently concerned with the study of all those factors that contribute to active and successful ageing, especially focusing on the physical and cognitive dimensions of the elderly, with a serious knowledge gap in relation to other psychosocial and emotional aspects concerned, despite its proven impact on their quality of life.

On the other hand, although the number of Web 2.0 older adult users is increasing, there is still a significant digital gap in this age group. It seems that being 55 years old marks the moment when there is a sudden decrease in the use of these tools. If these tools have shown important physical, psychological, social and emotional benefits and, ultimately, quality of life and vital satisfaction in any age group, we cannot stop studying the reasons why adults and seniors access in a lesser extent to this new world that opens behind its doors, which could contribute to breaking the current barriers.

Within this framework, and from the psychological perspective, our goal was focused on the study of usage patterns in Web 2.0 tools by adults and seniors, including the accessibility and usage barriers and the perceived benefits. All of this was analyzed in relation to the quality of life construct, specially highlighting the psychosocial and emotional components (emotional intelligence, coping, self-efficacy, achievement motivation and social competence), life experiences and daily practices. In order to solve this issue, different reviews and descriptive/exploratory

surveys were carried out, responding to the research questions that emerged as the survey progressed and to some specific targets.

Research Questions

In this context, different research questions were asked:

Empirical background review studies

Study 1: What is the corpus of existing knowledge in relation to the constructs addressed in this dissertation, namely: psychosocial and emotional competences, quality of life and Web 2.0 tools?

Study 2: Is there a differential effectiveness of interventions depending on the implementation modality (on-site/virtual)? What factors determine this effectiveness?

Studies 3 and 4: What are the causes of the existing digital gap?

Studies on usage patterns of Web 2.0 tools and associated psychological profiles

Studies 5 and 6: Is there a relationship between the use of Web 2.0 tools and different psychosocial, emotional and active ageing factors?

Studies on the relationship between life experiences, daily practices, psychological profiles, use of Web 2.0 tools, quality of life and personal satisfaction

Study 7: Is there a relationship between favourable and stressful life experiences and quality of life, psychological profiles and daily practices, including the use of Web 2.0 tools?

Study 8: What kind of daily practices, usage patterns of Web 2.0 tools, life experiences and psychological profiles are hidden behind the different perceptions of quality of life and personal satisfaction?

Objetives

Therefore, responding to these research questions were being sought to achieve a number of specific objectives. *Empirical background review studies (Studies 1, 2, 3 and 4)*

The *first study* aimed to review the existing literature in relation to each of the constructs addressed in this dissertation. Firstly, we reviewed the existing evidence regarding emotional intelligence, coping, self-efficacy, achievement motivation and social competence in adults and seniors. Secondly, we examined different programs implemented by means of virtual tools that have been proved effective in improving the quality of life. Finally, we discussed the possibilities of working these dimensions of the elderly through the opportunities offered by the new Web 2.0 tools

Via the *second study*, it was tried to verify the viability of psychoeducational assessment and the intervention on variables of quality of life and active ageing in adults and seniors in an online way. For this purpose, we tested the differential efficacy of the virtual and in-site participation modalities, analyzing elements on empirically based evidence (EBE) that could be the basis of such differences.

Thirdly, we studied the barriers of use of Web 2.0 tools in adults and seniors through two different paths. Firstly, a study was carried out of the tools currently available in the network for the treatment of psychosocial and emotional variables through a process of searching for resources on the web and its analysis (*Study 3*). This would allow us to analyze one of the possible causes of the existing generational digital gap, the absence of resources adapted to the particular characteristics of this age group. Secondly, the *fourth study* aimed to review studies on usage patterns of Web 2.0 tools, analyzing a second possible cause of the digital gap, the lack of digital competences by adults and seniors.

Studies on usage patterns of Web 2.0 tools and associated psychological profiles (Studies 5 and 6)

A descriptive study was carried out through an online survey (*Study 5*) whose purpose was to analyze the usage patterns of Web 2.0 tools as well as the underlying psychological profiles (*Study 6*).

Studies on the relationship between life experiences, daily practices, psychological profiles, use of Web 2.0 tools, quality of life and personal satisfaction (Studies 7 and 8)

Through the *seventh study*, it was intended to study the impact of life experiences on the perceived quality of life, psychological profiles and daily practices of adults and seniors, including the use of Web 2.0 tools. In a complementary way to the previous analysis, a study was carried out to determine the daily practices, life experiences and psychological profiles that underlie different perceptions of quality of life and personal satisfaction (*Study 8*).

Results

Empirical background review studies (Studies 1, 2, 3 and 4)

After reviewing different national and international surveys, different conclusions were reached. Recent studies focus on improving the quality of life, life satisfaction and well-being of adults and seniors, while emphasizing the importance of optimizing physical, psychological and social components to achieve an active and healthy ageing. Within these components, the psychosocial and emotional ones have received scant attention from the scientific research (*Study 1*).

Traditionally, on-site programs have been implemented with the aim of improving the quality of life of adults and seniors. Recently, other types of programs have been developed using virtual tools. While some studies praise the comparable efficacy of both virtual and in-site participations, others identify a number of limitations in the design and implementation of virtual interventions that could affect their effectiveness. One of the main contributions of this dissertation is the confirmation of the absence of significant differences depending on the modality of participation, being the effectiveness of these interventions mainly conditioned by the compliance of the indicators of the empirically based participations and by other modulating variables like the average age of the participating samples or their educational level (*Study 2*).

It cannot be denied that, nowadays, the group of adults and seniors are slowing down in access to the possibilities offered by the Internet and the different tools of the Web 2.0, even though when they constitute the age group recording the strongest growth in their use. All this can place this group in a situation of social exclusion in the middle of the digital gap, despite the plausible benefits of these tools on the integral well-being.

The causes of this digital gap could be found both in the lack of resources adapted to the particularities of the adult and senior population, with important limitations of accessibility, use and quality of resources (*Study 3*), as well as other personal reasons such as the lack of training in the use of these tools, the lack of an optimal digital competence, or the lack of adequate resources for their interests, among others (*Study 4*).

Studies on usage patterns of Web 2.0 tools and associated psychological profiles (Studies 5 and 6)

We analyzed the usage patterns of Web 2.0 tools in adults and seniors, as well as the associated psychological profiles. It was verified how the older adults have a basic knowledge about the computer and the Internet. Both knowledge and usage are conditioned by age, gender and educational level. In general, they use tools such as e-mail, browsers and office software. Surprisingly, and despite the accessibility and usage limitations found in previous surveys, more than half indicated not perceiving difficulties in accessing and using the Internet. However, among those that identified certain barriers, the following are noteworthy: (i) Intrapersonal barriers; (ii) Contextual barriers; and finally, (iii) Barriers dependent on the tools themselves. In general terms, users of the different Web 2.0 tools indicated benefits in terms of autonomy, motivation, social dimension, social participation, mood, self-esteem and, in general, physical and mental health, though, there are differences depending on the type of tool and age. Differential patterns are found in the psychological profile of users and non-users of the different Web 2.0 tools. In general, it should be noted that the oldest users of the different tools have profiles characterized by higher scores on different quality of life and active ageing variables in relation to non-users.

Studies on the relationship between life experiences, daily practices, psychological profiles, use of Web 2.0 tools, quality of life and personal satisfaction (Studies 7 and 8)

The evidence suggests that the life experiences, either favourable or stressful, of any adult and senior, mark different patterns, both in their psychological profiles and perceived quality of life, as in the daily activities and practices that affect the quality of life, including the use of the different Web 2.0 tools (*Study 7*). Equally, the results obtained allowed to identify a series of practices that, based on empirical evidence, would contribute to the promotion of quality of life and personal satisfaction, including the use of Web 2.0 tools. It was noticed how stressful life experiences condition the quality of life and personal satisfaction. Finally, it was found that adults and seniors with higher levels of perceived quality of life and personal satisfaction present higher scores in all psychological indicators assessed (*Study 8*).

Conclusions

The results achieved in this dissertation provide important evidence that contribute to enhance the research in this field.

It is concluded that, despite the barriers that condition their use, the growing interest in Web 2.0 tools in the group of adults and seniors who see important benefits of these by allowing them to meet their informational, communicative, recreational, training and management needs and for the important physical, psychological, social and emotional benefits derived from its use.

If the results confirm that virtual participations can be as effective as the more traditional methodologies in the in-site modality by ensuring that indicators of empirically based participations are met, it is necessary to promote the proliferation of studies that use virtual technologies as long as they can result a more efficient and cost-effective method.

In designing these participations and making them more effective and efficient for the promotion of quality of life and well-being and adapted to the particular characteristics of adults and seniors, it would be important to take into account not

only the aspects related to accessibility and use, but also different personal constructs, including different psychosocial and emotional variables that integrate their psychological profiles, as well as everything that conforms the different personal stories, including life experiences and daily practices.

Although greater institutional, social and scientific involvement is needed to take full advantage of the possibilities offered by the Internet, as well as to overcome the constraints and barriers found, both of a technological and personal nature, which could constitute some of the causes of the generational digital gap.

Based on the results achieved and as a future line of research, it would be interesting to proceed to the design of virtual participations by means of the different Web 2.0 tools that promote the quality of life and the well-being of adults and seniors, promoting an adequate adaptation to this vital stage and the current social circumstances.

Anexos

Cartas de aceptación

Carta de aceptación del Estudio 3

Analysis of online gerontechnology resources for active ageing

Research on Ageing and Social Policy (in press)

RASP Research on Ageing
■ and Social Policy

Hipatia Press
www.hipatiapress.com



Barcelona 21 de junio de 2017

A quien corresponda,

Por la presente certifico que el manuscrito titulado "Analysis of online gerontechnology resources for active ageing" del que es co-autora Cristina Díaz Prieto, ha sido aceptado para publicación en el próximo número de nuestra revista RASP. Research on Ageing and Social Policy, a publicar el día 30 de julio del presente año 2017.

Y para que así conste firmo en nombre del equipo editorial de la revista,

Ainhoa Flecha
Co-editora de RASP
Departamento de Sociología
Universitat Autònoma de Barcelona

Carta de aceptación del Estudio 4

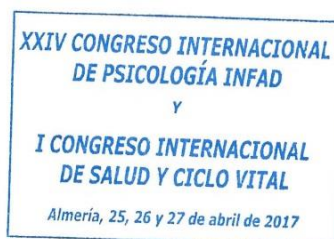
Patrones de uso de las herramientas de la web 2.0 en mayores.

International Journal of Developmental and Educational Psychology (in press)



Desde la Secretaría del XXIV CONGRESO INTERNACIONAL DE PSICOLOGÍA INFAD Y I CONGRESO INTERNACIONAL DE SALUD Y CICLO VITAL se acredita que la comunicación *Patrones de uso de las herramientas de la web 2.0 en mayores*, autoría de CRISTINA DÍAZ PRIETO, se encuentra aceptada para su publicación en **una de las siguientes modalidades:**

- Capítulo de libro de la Editorial Dykinson.
- Capítulo de libro de la Editorial de la Universidad de Almería.
- Artículo en la Revista de Psicología del Deporte (Journal of Sport Psychology)
- Artículo de la Revista INFAD de Psicología (International Journal of developmental and educational psychology)



En Almería, a 21 de junio de 2017.


Att. M^a Carmen Lozano Segura,
Secretaria técnica de organización ejecutiva,
miembro del Comité Científico y Comité ejecutivo.

Certificado de estancia

Certificado de estancia McMaster University (Hamilton, Ontario, Canadá)

**PROGRAMA ESTATAL DE PROMOCIÓN DEL TALENTO
Y SU EMPLEABILIDAD**

**CERTIFICADO DEL CENTRO RECEPTOR TRAS LA ESTANCIA BREVE O TRASLADO
TEMPORAL**
CERTIFICATE OF STAY IN A FOREIGN INSTITUTION

1. Beneficiario/ Applicant:	
Nombre y apellidos/ Name: Cristina Díaz Prieto	
D.N.I./ National identity Card: 71452126G	
Centro de adscripción de la beca/ Home Institución: Universidad de León	
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Institución/ Institution: McMaster University	
Nombre/ Name: Dr. James Gillett	
Cargo/ Post: Acting Associate Dean	
CERTIFICO: que el becario arriba mencionado ha realizado una estancia en este centro en las siguientes fechas: desde 15 / 09 / 2015 hasta 15 / 12 / 2015	
THIS IS TO CERTIFY: that the above mentioned person has performed a stay in this Institution in the following dates: From: 09 / 15 / 2015 To: 12 / 15 / 2015	
Lugar y fecha: Hamilton (Canadá), a 15 de diciembre de 2015 City and date: Hamilton, (Canada), December 15 th 2015	
Firma y Sello/ Signature & Stamp	
 Office of International Affairs	  James Gillett Faculty of Social Sciences

