

PSICOLOGIA

Revista da Associação Portuguesa de Psicologia

Volume 39(2) . 2025 . Periodicidade: Bianual

**A Série Sex Education enquanto Recurso de Educação Sexual:
Estudo Qualitativo**

Carla Jaques, Ana Cristina Rocha & Cidália Duarte

**The European Portuguese version of the Revised Anticipated
Sexual Jealousy Scale: Psychometric properties in a sample of
individuals in dating relationships**

Alexandra Martins, Isabel Narciso, Maria Cristina Canavarro &
Marco Pereira

**Wisdom and divergent problem solving as resources for
eudaimonic psychological well-being in old age**

Manuela Zambianchi

PSICOLOGIA

Revista PSICOLOGIA

(Edição *Online*)

Volume 39, Número 2, 2025

Propriedade e Edição da Associação Portuguesa de Psicologia

ISSN: 2183-2471

Directora

Marília Prada (Iscte - Instituto Universitário de Lisboa)

Directores Associados:

Secção Psicologia Social

David L. Rodrigues, Centro de Investigação e Intervenção Social do Iscte - Instituto Universitário de Lisboa
Isabel Pinto, Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto
Tomás Palma, Faculdade de Psicologia, Universidade de Lisboa

Secção Psicologia Clínica e da Saúde

Joana Pereira, Universidade de Coimbra
Raquel Pires, Universidade de Coimbra
Stephanie Alves, Universidade Lusófona

Secção Psicologia Comunitária e Aplicada

Cláudia Camilo, Faculdade de Psicologia, Universidade de Lisboa
Eunice Magalhães, Centro de Investigação e Intervenção Social do Iscte - Instituto Universitário de Lisboa

Secção Psicologia do Ambiente

Susana Batel, Centro de Investigação e Intervenção Social do Iscte - Instituto Universitário de Lisboa

Secção Psicologia dos Processos Básicos

Magda Saraiva, William James Center for Research, ISPA- Instituto Universitário
Pedro Rosa, Universidade Lusófona

Psicometria

Diogo Lamela, Universidade Lusófona

Secção de Comportamento Organizacional

Ana Sabino, Applied Psychology Research Center Capabilities & Inclusion – APPsyCI, Ispa – Instituto Universitário
Inês Carneiro Sousa, Iscte - Instituto Universitário de Lisboa

Secretariado Científico e Técnico:

Catarina Possidónio, Associação Portuguesa de Psicologia
Margarida Carmona e Lima, Associação Portuguesa de Psicologia

Conselho Editorial

Alexandra Reis (Universidade do Algarve, Portugal)
António Rosado (FMH-Universidade de Lisboa, Portugal)
Cícero Roberto Pereira (Universidade Federal da Paraíba, Brasil)
Diniz Lopes (Iscte - Instituto Universitário de Lisboa, Portugal)
Dominique Muller (Université de Grenoble Alpes, França)
Ewa Drozda-Senkowska (Université Paris Descartes, França)
Gerd Bohner (Fakultät für Psychologie und Sportwissenschaft, Universität Bielefeld, Alemanha)
Gün R. Semin (ISPA-Instituto Universitário, Portugal)
Isabel Correia (Iscte - Instituto Universitário de Lisboa, Portugal)
João Manuel de Oliveira (Iscte - Instituto Universitário de Lisboa, Portugal)
Jorge Vala (Instituto de Ciências Sociais, Universidade de Lisboa, Portugal)
José Marques (FPCE-Universidade do Porto, Portugal)
Jose-Miguel Fernández-Dols (Universidad Autónoma de Madrid, Espanha)
Liliana Sousa (Universidade de Aveiro, Portugal)
Luís Faísca (Universidade do Algarve, Portugal)
Luísa Lima (Iscte - Instituto Universitário de Lisboa, Portugal)

Manuela Calheiros (Faculdade de Psicologia, Universidade de Lisboa, Portugal)
Marcus Lima (Universidade Federal do Sergipe, Brasil)
Margarida Garrido (Iscte - Instituto Universitário de Lisboa, Portugal)
Maria Filomena Gaspar (Universidade de Coimbra, Portugal)
Mário Boto Ferreira (Faculdade de Psicologia, Universidade de Lisboa, Portugal)
Marlene Matos (Universidade do Minho, Portugal)
Miguel Gonçalves (Universidade do Minho, Portugal)
Patrícia Arriaga (Iscte - Instituto Universitário de Lisboa, Portugal)
Paulo Machado (Universidade do Minho, Portugal)
São Luís Castro (Faculdade de Psicologia e Ciências da Educação, Universidade do Porto, Portugal)
Silvia Koller (Universidade Federal do Rio Grande do Sul, Brasil)
Teresa Garcia-Marques (ISPA-Instituto Universitário, Portugal)
Themis Apostolidis (Université Aix-Marseille, França)
Theodore Alexopoulos (Université Paris Descartes, França)
Theodore E. A. Waters (New York University Abu Dhabi, Emirados Árabes Unidos)

A revista *PSICOLOGIA* é uma revista multilingue e encontra-se indexada nos *PSYCHOLOGICAL ABSTRACTS / PSYARTICLES / PSYCINFO / SCIELO / SciELO Citation Index - Thomson Reuters / SCOPUS*

Propriedade do Título, Edição, Concepção Gráfica e Composição: Associação Portuguesa de Psicologia (<http://appsicologia.org>)

Capa: © Associação Portuguesa de Psicologia

NIF: 500995818

Sede do editor/redação: Av. Forças Armadas, Ed. ISCTE, 1649-026 Lisboa, Portugal

Depósito Legal número: 129 801/98

Registo na Entidade Reguladora para a Comunicação Social: N.º 124021

ISSN: 2183-2471

Revisão de textos: Maria do Carmo Carvalho e Mick Greer

Periodicidade: Bimodal

As normas para a preparação e submissão de manuscritos podem ser consultadas em <http://appsicologia.org> ou através do portal da revista em <http://revista.appsicologia.org/index.php/rpsicologia/about/submissions#onlineSubmissions>

Índice

A Série Sex Education enquanto Recurso de Educação Sexual: Estudo Qualitativo

(pp. 1-11)

Carla Jaques, Ana Cristina Rocha & Cidália Duarte

The European Portuguese version of the Revised Anticipated Sexual Jealousy Scale:

Psychometric properties in a sample of individuals in dating relationships

(pp. 12-25)

Alexandra Martins, Isabel Narciso, Maria Cristina Canavarro & Marco Pereira

Wisdom and divergent problem solving as resources for eudaimonic psychological well-being in old age

(pp. 26-39)

Manuela Zambianchi

A Série *Sex Education* enquanto Recurso de Educação Sexual: Estudo Qualitativo

Carla Jaques¹, Ana Cristina Rocha  ¹ & Cidália Duarte  ¹

¹ Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto

Resumo: A educação sexual (ES) é um tópico de investigação em crescente interesse, sendo os estudos unâimes quanto aos seus efeitos positivos. A utilização de meios de comunicação pelos adolescentes vem igualmente aumentando e sabe-se que são utilizados para obter informação sobre sexualidade. A série *Sex Education* tem-se destacado neste contexto, tendo sido produzidas várias temporadas. Assim, este estudo pretende analisar as perspetivas de jovens e profissionais sobre o impacto da série *Sex Education* nos mais novos e explorar de que forma pode constituir-se um recurso pedagógico para a ES. Para o efeito, foram realizadas nove entrevistas a jovens e três a profissionais cujos dados foram tratados através da análise de conteúdo. Os resultados mostram que a série apoia o desenvolvimento psicossexual, promovendo conhecimentos, atitudes e competências; é um ótimo recurso pedagógico na ES com adolescentes, por ser educativa, lúdica e realista, abordando a sexualidade com naturalidade.

Palavras-chave: Educação sexual; Sexualidade; Série sex education; Media.

The Sex Education Series as a Resource for Sexuality Education: A Qualitative Study: Sexuality education (SE) is a growing research topic. Studies have unanimously shown positive resulting effects off SE. The media use by teenagers is increasing and one of its purposes is to obtain information on sexuality. The series "Sex Education" has gained relevance in this context, having already been renewed for several seasons. Thus, this study aims to analyse teenagers' and professionals' perspectives about the impact of the previously mentioned series on younger people and explore its use as an educational resource for SE. In order to achieve those goals, we conducted nine interviews with teenagers and three with professionals and then analyzed the data through context analysis. The results show that "Sex Education" supports the psychosexual development, promoting knowledge, attitudes and competences. It is a great teaching resource for ES with teenagers, as it's educational, playful and realistic, approaching sexuality in a natural way.

Keywords: Sexuality education; Sexuality; Sex education series; Media.

A sexualidade é uma componente multidimensional e central no desenvolvimento humano, desempenhando um papel preponderante no bem-estar dos indivíduos, nomeadamente no seu equilíbrio físico e psicológico (Sánchez, 2005; WHO, 2010; 2015). Segundo a UNESCO (2019, p.17), "a sexualidade pode ser entendida como uma dimensão central do ser humano que inclui: compreensão e relacionamento com o corpo humano, vínculo emocional, amor, sexo, género, identidade de género, orientação sexual, intimidade sexual, prazer e reprodução". Assim, a sexualidade expressa-se e assume funções distintas ao longo do ciclo vital, conforme a fase do desenvolvimento psicossexual do ser humano (Sánchez, 2005; WHO, 2015).

Segundo a abordagem socio desenvolvimental, o desenvolvimento psicossexual, embora tenha início nos aspetos biológicos, nomeadamente nos cromossómicos, decorre predominantemente na esfera sociocultural, sendo resultado da interação entre as bases biológicas e os fatores socioculturais (Zapiain, 2013). Entre estes fatores, destaca-se a Educação Sexual (ES) cuja influência no desenvolvimento psicossexual tem sido amplamente reconhecida. A Organização Mundial da Saúde (WHO, 2015) distinguiu a abordagem holística da ES como a mais adequada para a promoção do desenvolvimento psicossexual. De acordo com esta abordagem, a ES é conceptualizada como a aprendizagem sobre os aspetos cognitivos, emocionais, sociais, interativos e físicos da sexualidade, e deve ser baseada nos direitos humanos internacionalmente reconhecidos, com especial ênfase no direito ao conhecimento. Independentemente da abordagem, a ES pode decorrer de modo formal, não formal e informal (WHO, 2015).

¹ Morada para correspondência: Entrada 5, Rua Nossa Senhora de Fátima, nº1, São Roque do Faial, Ilha da Madeira, Portugal E-mail: carla.jaques@hotmail.com

A ES informal, enquanto processo de aprendizagem não estruturado e sem intencionalidade, inerente ao processo de socialização, assume um papel particularmente relevante no desenvolvimento psicossexual. Este impacto resulta, em grande parte, da modelagem exercida pelos agentes de socialização nos diversos contextos de vida (WHO, 2015). A modelagem é o processo pelo qual o ser humano aprende, através da observação e imitação de modelos significativos (e.g., família, pares, *media*) comportamentos, atitudes e normas, entre os quais os relacionados com a sexualidade. O modo como a criança vivencia a infância e como os seus cuidadores abordam a sexualidade nesse período tem influência, nomeadamente, na evolução das atitudes e dos comportamentos sexuais durante a adolescência (UNESCO, 2020; WHO, 2015; Zapiain, 2013). As crenças e valores sexuais de familiares e outros significativos, mas também as interações com conteúdos mediáticos, como os comentários sobre notícias nos jornais, programas televisivos e conteúdos *online*, constituem-se modelos e referências relevantes no processo de socialização. Atualmente, o mundo digital representa um meio de socialização particularmente influente entre os jovens, exercendo um impacto significativo na construção da sua identidade global e, especificamente, da sua identidade psicossexual enquanto construção subjetiva e dinâmica do “eu” em relação ao outro (Pérez-Torres, 2024).

O desenvolvimento psicossexual está, portanto, interligado e assume um papel fundamental nas tarefas desenvolvimentais de construção da identidade, individuação e autonomização das figuras parentais (Drury & Bukowski, 2013; Erikson, 1968). Nesta reorganização dos laços afetivos com pais, a comunicação é central não só na relação entre pais e filhos, mas também no desenvolvimento psicossexual, ao longo da adolescência e etapas seguintes do ciclo de vida. A literatura tem evidenciado o poder de influência da comunicação entre pais e adolescentes no desenvolvimento psicossexual e no comportamento sexual dos últimos. Quando a comunicação é adequada (e.g., abordagem gradual e contínua, encorajamento do diálogo bidirecional, atitude de abertura e respeito), esta tem estado associada a comportamentos mais responsáveis (e.g., maior uso de contracetivos, menos comportamentos de risco, atraso no início da atividade sexual) (Dias & Matos, 2013; Flores & Barroso, 2017; Rocha & Duarte, 2011). Contudo, a investigação tem também evidenciado dificuldades de comunicação acerca de temas relacionados com a sexualidade (European Expert Group on Sexuality Education, 2016), nomeadamente por desconforto e receio por parte dos jovens de serem julgados (Grossman et al., 2021), mas também por atitudes negativas e clima de desconforto quanto à sexualidade por parte dos pais e da sociedade (European Expert Group on Sexuality Education, 2016; UNESCO, 2020).

Paralelamente a estas dificuldades de comunicação, observa-se uma crescente utilização dos *media* por parte dos jovens (Prinstein et al., 2020), o que tem contribuído para que estes se constituam um recurso importante de ES informal (Nikkelen et al., 2020). Apesar das evidências sobre a influência negativa da comunicação social nos comportamentos sexuais de risco (e.g., menor probabilidade do uso do preservativo, gravidez não planeada), os *media* têm também sido apresentados como um meio promissor para promover a saúde sexual (Coyne et al., 2019; Jones et al., 2019; Landry et al., 2017; Smith et al., 2016; Vannucci et al., 2020), precisamente por se constituírem uma alternativa para colmatar as dificuldades na comunicação direta sobre sexualidade e combater abordagens predominantemente moralistas e/ou centradas excessivamente numa perspetiva sanitária da ES (Simon & Daneback, 2013).

Neste sentido, os *media* têm sido considerados uma plataforma promissora para a educação para a saúde (Jones et al., 2019), com potencial para ser incluída na ES formal, enquanto processo estruturado, sistemático e intencionalmente integrado em contextos educativos formais. Moran (2007, como citado em Santos et al., 2020) refere que os *media* funcionam como pontes que abrem a sala de aula para o mundo, representando e mediando o conhecimento sobre o mesmo. Neste contexto, tem sido advogada a integração das produções provenientes de plataformas de *streaming*, como as séries, no ambiente escolar. A sua utilização como recurso didático na ES oferece oportunidades de trazer ao debate temas e conteúdos complexos ou difíceis de abordar em sala de aula, através de uma linguagem acessível e mais atrativa para os jovens (Lopes et al., 2019; Silva et al., 2020).

A série *Sex Education* da Netflix, que integra conteúdos de ES ao longo da trama de uma comédia romântica passada numa escola sem um projeto formal de ES, tem-se destacado pela ótima receção do público. O seu sucesso justificou a produção de várias temporadas (três à data de recolha dos dados) e suscitou o interesse da comunidade científica. Ainda que em número reduzido, os estudos têm revelado o potencial pedagógico da série em diferentes contextos pela identificação com os problemas retratados pelas personagens e pelo estímulo à formação de atitudes, crenças e competências (e.g., Bréda, 2020; Rodríguez et al., 2020; Santos et al., 2020; Silva et al., 2020).

A investigação tem sido realizada em vários países na Europa (e.g., Bréda, 2020; Rodríguez et al., 2020), mas sobretudo em países de língua portuguesa não europeus, em particular no Brasil, onde é notório o interesse (e.g., Lopes et al., 2019; Rosa et al., 2021; Santos et al., 2020; Santos & Almeida, 2022); pelo contrário, em Portugal, desconhecemos estudos sobre o conteúdo, o impacto ou a utilização pedagógica da

série. A discrepância entre Portugal e o Brasil pode acontecer devido ao clima repressivo quanto à sexualidade, no Brasil, e, por isso, mais desfavorável à implementação da ES, em particular quando comparado com o contexto português, no qual existe uma lei que define a obrigatoriedade e orienta a implementação da ES nas escolas (Lei nº 60/2009; Portaria nº 196-A/2010). Por estes motivos, investigadores brasileiros debruçaram-se sobre as vivências dos jovens na série *Sex Education* como forma de demonstrar a relevância de incluir nas instituições de ensino discussões sobre temas como o corpo, o desejo, o prazer e as relações sexuais (Rosa et al., 2021). Interessará, contudo, compreender o valor ou papel da série num contexto mais favorável à ES.

Assim, a presente investigação tem como objetivos analisar as perspetivas de jovens e profissionais sobre o impacto da série *Sex Education* nos jovens e explorar de que forma este conteúdo multimédia pode constituir-se um recurso pedagógico para a ES. O estudo foca-se no contexto português, onde, por um lado, o quadro político e sociocultural parece ser mais favorável à implementação da ES nas escolas e, por outro lado, os jovens identificam-se pouco com o tipo de recursos e estratégias utilizadas na ES (Matos et al., 2014; Rocha & Duarte, 2015; Rocha et al., 2016).

MÉTODO

Participantes

Conforme apresentado na Tabela 1, selecionaram-se nove jovens e três profissionais pelo método de bola de neve, após a divulgação do estudo junto de contactos da equipa de investigação, em instituições-chave (e.g., escolas). Todos os participantes visionaram as três temporadas da série *Sex Education* e pertenciam ao mesmo contexto, a Região Autónoma da Madeira. Os jovens eram, na sua maioria, do sexo feminino, tinham idades compreendidas entre os 17 e os 20 anos, frequentando quer o ensino secundário, quer o universitário. As profissionais pertenciam à área da educação, enfermagem e psicologia, e todas tinham experiência profissional na implementação da ES. As suas idades variaram entre os 23 e os 54 anos.

Tabela 1. Caracterização dos Participantes

Participante	Sexo	Idade	Situação profissional	Área
J1	F	18	Estudante	Licenciatura em Psicologia
J2	F	18	Estudante	12.º ano - Artes Visuais
J3	F	18	Estudante	12.º ano - Artes Visuais
J4	F	17	Estudante	12.º ano - Línguas e Humanidades
J5	M	17	Estudante	11.º ano - Línguas e Humanidades
J6	M	18	Estudante	12.º ano - Línguas e Humanidades
J7	F	18	Estudante	Licenciatura em Psicologia
J8	F	20	Estudante	Licenciatura em Psicologia
J9	F	19	Estudante	Licenciatura em Engenharia Civil
ENFER	F	23	Empregada	Enfermagem
PSIC	F	28	Empregada	Psicologia
PROF	F	58	Empregada	Docência

Procedimentos de Recolha de Dados

A recolha de dados foi realizada, entre julho e agosto de 2022, através de entrevista semiestruturada, efetuada por videoconferência com recurso à plataforma *Zoom Video Communications Inc. (Zoom)*, dada a familiaridade dos jovens com as novas tecnologias e a maior conveniência para os participantes (e.g., menor tempo de recolha). As entrevistas ocorreram num ambiente privado e silencioso, de forma a garantir o mínimo de distrações e interrupções possíveis.

O guião da entrevista com os jovens estava dividido em cinco partes: 1) expectativas e experiências sobre a série; 2) sexualidade e educação sexual; 3) relações amorosas e de amizade; 4) novos conhecimentos, pesquisas e aprendizagens; e 5) a série como recurso na ES. Já o guião da entrevista com as profissionais, embora se estruturasse em cinco partes também, diferia no terceiro e quarto pontos, que se prendiam com o impacto da série nos jovens e a sua utilização na prática profissional com os mesmos, respetivamente. Ambos os guiões foram previamente avaliados por profissionais da área da ES e sexualidade (e.g., psicólogos e professores com especialização) e testados em entrevistas piloto, não tendo sido necessário proceder a nenhuma alteração.

Procedimentos de Análise dos Dados

Os dados foram tratados através da análise de conteúdo, segundo a proposta de Bardin (2011). Na pré-fase, a primeira autora organizou os dados, realizou a transcrição integral da totalidade das entrevistas, incluído alguma da linguagem analógica, e fez uma leitura flutuante. Na exploração do material, os dados brutos foram categorizados tendo por base a sua semelhança, o que deu origem, através do critério semântico, a três categorias principais. A primeira diz respeito às motivações, expectativas e apreciações sobre a série *Sex Education*; a segunda, intitulada impacto da série *Sex Education* nos jovens, inclui as percepções sobre as mudanças desencadeadas pela visualização da série; e a terceira explora a série *Sex Education* como um recurso de ES com jovens, retratando as experiências prévias de recurso à série na ES, as percepções sobre a sua eficiência e as sugestões para a utilização da série como um recurso de ES (formal e informal). Por fim, procedeu ao tratamento, inferência e interpretação dos resultados.

RESULTADOS

Expectativas e Apreciações sobre a Série *Sex Education*

Motivações e expectativas. Muitos jovens decidiram ver a série *Sex Education* quer por ter sido recomendada e ser famosa, quer pela curiosidade suscitada pelo próprio título (J2: “Foi só pelo nome”), mas também pelas temáticas abordadas (J6: “São tudo temáticas que eu gosto e, portanto, achei prudente vê-la”). Já os motivos que levaram as profissionais a vê-la prenderam-se, maioritariamente, com a recomendação por outrem, a aquisição de conhecimentos e também a curiosidade (ENFER: “Percebemos que tinha muito a ver com o nosso trabalho e que nós fomos aprender muito mais com aquilo”).

Quanto às expectativas, para alguns jovens elas foram correspondidas e para outros até foram superadas (J2: “A série passou as expectativas”). Apenas para uma jovem a série ficou um pouco aquém, já que “pensava que no fim da primeira temporada eles iam ter uma, uma aula sobre o mesmo, *sex education*, mas isso não aconteceu” (J7). Houve também quem não as tivesse criado (J4: “Eu acho que não criei expectativas”). Já a psicóloga referiu que a série correspondeu às suas expectativas, embora não na totalidade, pois esperava que tivessem sido abordados mais temas. Contrariamente, a enfermeira e a professora referiram que ficaram surpreendidas pela positiva, realçando, a primeira, o facto de a série ser educativa e falar “sobre o desenvolvimento da sexualidade nos jovens, [...] desta maneira tão aberta, tão... tão alternativa” (ENFER).

Apreciações e sugestões. No que diz respeito às apreciações sobre a *Sex Education*, tanto os jovens, como as profissionais revelaram ter ficado agradados com a série, por esta tratar “de problemas muito reais e tratá-los de uma maneira real” (J9). Em consonância, a psicóloga referiu que “isso é o benefício da série, pegar por coisas que são recorrentes e que são comuns a muitos jovens e tentar transpor”. Na generalidade, os entrevistados referiram não ter críticas a fazer à produção. Porém, alguns jovens mencionaram alguns pontos menos positivos relacionados com o enredo e com a breve abordagem de alguns temas (J1: “Nem sempre explica (...) e não informa assim a cem por cento, eu acho”). As profissionais também identificaram o pouco aprofundamento dos temas como um ponto menos positivo (PSIC: “Às vezes, as coisas eram introduzidas de uma certa forma e deixavam ali *hum* a dúvida, quando podia ser um bocadinho mais esmiuçado”), assinalando a enfermeira que “deixar coisas no ar por responder pode ser perigoso”. A linguagem neutra é outro aspeto que, na opinião da psicóloga, poderia ser melhorado, assim como uma abordagem diferente ao *bullying*, por considerar que a série o retrata de forma positiva. Por fim, esta profissional alerta ainda para a desatualização da série quanto ao termo doenças sexualmente transmissíveis [DST], que deveria ser substituído por infeções sexualmente transmissíveis [IST].

Quanto a novos temas a serem introduzidos numa próxima temporada, os jovens propuseram que a *Sex Education* inclua a transsexualidade, além das perturbações do comportamento alimentar, do *bullying*, da violência doméstica e do consumo de substâncias. Adicionalmente, sugeriram o aprofundamento de tópicos como as IST, a gravidez não planeada, as aparências e o aborto (J2: “Com esta... confusão agora do aborto nos Estados Unidos (...) gostava que introduzissem o tema outra vez”). As profissionais concordaram que a transexualidade e o consumo de substâncias deveriam ser abordados numa próxima temporada. Sugeriram também conteúdos relacionados com as questões identitárias, como a “expressão de género”, a “identidade de género”, o não binarismo, as dificuldades e o prazer sexual em casais homossexuais lésbicos, as “pessoas intersexo” (PSIC: “Pessoas intersexo nós damos sempre que é o nome de... hermafrodita. Hermafrodita está errado, (...) era importante, por exemplo, esta série dar alguma informação nesse sentido”). Por fim, a enfermeira mencionou ainda que “era interessante ver explorado outras formas de prazer para desmistificar o que é uma relação sexual”.

Impacto da Série *Sex Education* nos Jovens

Mudanças nas atitudes, valores e vivências da sexualidade. Ao longo das entrevistas, os jovens foram evidenciando mudanças nas atitudes no sentido de uma maior abertura à sexualidade, porque “a série mostrou que a sexualidade não é um tabu” (J1) e validou a abordagem natural à temática, através da identificação com personagens e situações (J1: “Eles estão sempre ali uns com os outros a falar sobre essas coisas e eu também tenho muito isso com os meus amigos”). As profissionais concordaram com o efeito da identificação com as personagens, considerando que a série “é capaz de normalizar as experiências dos jovens, nomeadamente os “medos”, “a insegurança (...) e a mudança” (ENFER). As mudanças na vivência da sexualidade e na sua identidade, pela reflexão sobre si próprio que a série estimula, foram corroboradas pelos jovens (J7: “Fez-me pensar um pedacinho sobre a minha vida do dia, que estava a acontecer à minha volta”; J9: “E eu acabei por eu própria descobrir a minha sexualidade, também falando mais com as pessoas e vendo também, pronto, os casos representados”). A maior abertura às temáticas relacionadas com a sexualidade repercutiu-se numa mudança na atitude de curiosidade sobre esta dimensão, muito potenciada pelo confronto com vivências que eram novidade para os jovens, como, por exemplo, a prática da masturbação e a emoção de vergonha durante o orgasmo (J4: “Estavam a ter relações sexuais e a rapariga não gostava que o rapaz visse a reação dela quando ela se vinha. Isso, para mim, para mim isso nunca, nunca tinha pensado que isso realmente podia acontecer”). Este confronto com novos temas suscitou questionamento em alguns jovens, nomeadamente acerca do realismo de toda a história e do clima da série (J1: “Eu questionei se aquilo realmente acontece tipo, se os adolescentes realmente têm aquela vida todos os dias”; J7, referindo-se ao assédio sexual: “Ela estava ali, claramente aflita, e ninguém fez nada, o que é que se está a passar?!”). Este questionamento desencadeou a pesquisa por parte dos jovens sobre diversos temas (J2: “A série fez com que me interessasse mais sobre estes temas e que pesquisasse sobre eles”). Eles referiram que procuraram informação sobre o vaginismo, a masturbação feminina, as IST, as pessoas não binárias, a homofobia internalizada, a transexualidade, o termo transgênero, o uso dos pronomes e o ato sexual entre parceiros homossexuais. Quanto às fontes a que recorreram para a pesquisa, estas prenderam-se maioritariamente com os media, mais concretamente com a internet, tendo os jovens revelado o seu desconforto em questionar os adultos (J2: “Não era confortável o suficiente para irmos a um médico, um ginecologista”; J3: “Na altura não me sentia confortável o suficiente para realmente ir falar com uma pessoa que soubesse mais sobre o assunto”).

Mudanças nas competências. Além das mudanças nos conhecimentos, as profissionais acreditavam que a série promove também o desenvolvimento de competências relacionadas com a comunicação e as estratégias de *coping* (ENFER: “Acho que eles aprendem muito em termos de resolução de problemas, mecanismos para resolver os seus problemas”). Os jovens mencionaram que esta produção também os ajudou nas relações românticas, notadamente ao nível da comunicação, da expressão das suas necessidades e da própria atividade sexual. No que concerne à comunicação sobre sexualidade, alguns jovens reconhecem que a *Sex Education* teve um impacto positivo (J6: “Fez-me ser mais aberto *hum* conseguir comunicar de uma forma mais acessível, dizer aquilo que eu gosto, aquilo que não gosto, aquilo que me sinto preparado, aquilo que não me sinto preparado”). O impacto positivo foi explicado pelo recurso à série como um estímulo de quebra-gelo ou um mote para iniciar a conversação sobre um tópico relacionado com a sexualidade, mas também pela ponderação das consequências que advêm da (não) comunicação das dúvidas e necessidades. Adicionalmente, os jovens referiram que a série demonstra que a sexualidade não é um tabu, o que os ajudou a abordar o tema com naturalidade. Outros jovens consideraram que a série não teve muito impacto no campo da comunicação, porque já falavam abertamente sobre sexualidade, notando, no entanto, que as pessoas em seu redor começaram a abordar mais este tópico. As profissionais partilharam da visão dos jovens. Tal como eles, elas concordaram que a série auxilia a comunicação mais aberta sobre sexualidade por quebrar o tabu associado e por se constituir um mote que estimula a conversação de forma menos embaralhada e menos reveladora de experiências pessoais (PSIC: “É muito mais fácil nós termos uma conversa de café a falar sobre uma série, não é tão invasivo”; “se eu falar “ai, a Aimee teve um caso de assédio, isto foi assim, assim e assim”, se calhar, tenho mais abertura para alguém me dizer “olha, eu também passei por isso””). Ainda sobre a comunicação, a maioria dos jovens acreditava que a série incentiva a comunicação entre filhos e pais devido ao bom modelo de comunicação existente entre as personagens (J6: “Baseio-me, essencialmente, na relação que o Otis tem com a mãe que é uma relação boa”). Houve alguns jovens que recomendaram a visualização da *Sex Education* aos pais, outros que viram a série com eles, e uma entrevistada que mencionou ter começado a falar com a mãe sobre os temas da sexualidade graças à série. As conversas estabelecidas entre pais e filhos sobre esta produção centraram-se, sobretudo, em temas como a orientação sexual e a identidade de género. Todavia, um outro grupo de jovens não falou com os pais acerca da série, explicando que tem pais conservadores e que estes

iam achar que a *Sex Education* não trata temas adequados às suas idades (J4: “Ia ser “ah ok, viste essa série, fogo, a sério? Isso nem sequer fala de coisas para a tua idade””). Por fim, acrescentaram ainda que reconhecem que os pais ficam envergonhados ao falar sobre sexualidade e, que, muitas vezes, os filhos decidem não os abordar com medo de julgamento e falta de compreensão. Na perspetiva das profissionais, a *Sex Education* incentiva a comunicação entre jovens e pais sobre sexualidade porque exibe bons modelos de práticas parentais e reforça os benefícios da comunicação aberta (ENFER: “Temos diversos exemplos de diversas famílias onde a comunicação com (...) os nossos cuidadores... é importante”). No entanto, a psicóloga evidenciou algumas dúvidas, relativamente a “incentivar todos os jovens e [a] todos se identificarem com aquele género de pais”.

Mudanças nos comportamentos de proteção sexual. Outro dos impactos da série nos jovens evidenciado nas entrevistas prendeu-se com a adoção de comportamentos de proteção. A grande maioria dos jovens concorda que a série contribui para a adoção destes comportamentos por abordarem tópicos associados à proteção, entre os quais o aborto realizado em segurança, a adesão ao uso do preservativo, e a gravidez na adolescência, como incentivo ao uso de métodos contracetivos (J5: “Por exemplo... o caso da Maeve, quando ela engravidou, *hum...* incentiva mais ao uso de preservativo, métodos contracetivos”). Neste contexto, foi referenciada também uma cena na qual um rapaz é alérgico ao preservativo, como exemplo de incentivo a adotar comportamentos seguros, como a consulta médica. Alguns jovens destacaram ainda a personagem que é sexóloga como um contributo importante para a vivência da sexualidade de forma mais segura pela pertinência da informação que disponibiliza (J5: “A mãe do Otis (...) como ela é terapeuta sexual também há (...) aspetos que ela fala na série que podem ser utilizados para a vida real”). Por fim, embora em menor número, alguns entrevistados justificaram não achar que a série contribua para a aquisição de comportamentos de proteção, porque não é uma aula de ES e porque a visualização não garante uma mudança de comportamento. Para as profissionais, foi unânime que os jovens podem adquirir comportamentos de proteção, através do conteúdo multimédia em estudo, por serem abordados temas relacionados com o cuidado e com a segurança como, por exemplo, os métodos contracetivos e os comportamentos de risco (PROF: “Ensina (...) a ter cuidado com (...) os perigos que existem”). No entanto, para a enfermeira, apesar de esta ser uma série que promove a saúde e aborda formas positivas de vivermos a sexualidade, a prevenção do risco podia ser abordada de forma mais clara (ENFER: “Podia-se mostrar aos jovens como é que se responde e como é que se comporta perante uma situação de pressão porque o uso do preservativo ainda é um problema por causa da pressão do par que não quer usar”).

Sex Education como um Recurso de ES com Jovens

Utilidade da série. Segundo os participantes, a mais-valia desta série enquanto recurso para a ES prendia-se com a naturalidade em abordar a sexualidade “de uma forma descontraída [e com uma] linguagem super acessível” (PSIC), apresentando-a numa perspetiva educativa e positiva (PSIC: “a *Sex Education* (...) não retrata e retrata muito pouco *hum* os malefícios ou as coisas prejudiciais, aliás, tenta-lhe dar uma volta muito bem-feita *hum* e... e não reprime os jovens”). Foi destacado, também, o valor de veicular informação diversificada, fidedigna e realista (J9: “Representa imensas coisas, algo que nunca, eu nunca vi representado noutra lugar e, por isso, uma pessoa quando está a ver algo que nunca viu está a aprender bastante, obviamente, e a abrir mais a mente”). Supre, assim, lacunas identificadas nos conteúdos abordados na ES na escola (J2: “A mim ensinou-me bastantes coisas que na escola não ensinam e acho que era super importante ensinarem”). A este respeito, a psicóloga mencionou que a série permite a seleção de excertos de acordo com diversas temáticas mais específicas, nomeadamente os temas associados à comunidade LGBTIQ+ (ie., pessoas que se identificam como lésbicas, gays, bissexuais, transgénero, intersexuais ou *queer*). Realçaram-na, ainda, como “uma maneira divertida de aprenderem e lúdica” (J7), porque “acabam por [se] identificar e é muito mais fácil aprender assim” (J4) e porque “ao ser uma série acaba por ser mais interessante do que ir ao *Google* e pesquisar” (J5). No entanto, alguns jovens chamam a atenção para a faixa etária do público de intervenção, considerando ser necessária alguma maturidade para compreender a série (J6: “É preciso ter uma certa maturidade para ver esta série”), e ser igualmente necessário o acompanhamento de um profissional, para fazer uma integração dos assuntos abordados pela produção.

Propostas para a utilização da série. As profissionais revelaram que recomendavam aos jovens a visualização da *Sex Education*, por esta auxiliar na resolução de problemas (ENFER: “Porque é uma forma de eles obterem (...) soluções, de eles se aperceberem de mecanismo de *coping*...”). A psicóloga, em particular, referiu já ter recorrido a excertos da série para explorar temas na intervenção com jovens (“eu utilizo muito o vídeo da assexualidade”; “utilizamos algumas imagens da série ou alguns clipes”) ao contrário da enfermeira e da professora. No entanto, todas as profissionais, assim como os jovens

exploraram sugestões para que a *Sex Education* se constituísse um recurso de ES a ser utilizado por professores, animadores socioculturais, médicos, nomeadamente médicos de família e ginecologistas, enfermeiros, psicólogos, terapeutas sexuais, assistentes sociais ou agentes da polícia. Assim, as sugestões de utilização deste recurso remeteram quer para a ES informal, quer para a ES formal, em particular no contexto da escola e dos cuidados de saúde primários. Independentemente do profissional e do contexto, foi unânime a sugestão de recorrer à série, através da seleção de episódios ou excertos, como um estímulo tanto para introduzir e aprofundar temas, fomentando a partilha de experiências e dúvidas, como também para corroborar a informação fornecida previamente pelos profissionais (J1: "Ah, pegar numa série que os jovens adoram, porque os jovens adoram ver séries e, se calhar, usar uma coisa que eles gostem para explicar algo muito mais a fundo"; J6: "Como um exemplo que corrobore determinados argumentos, por exemplo"). Foi sugerido que a série fosse utilizada por profissionais de saúde no contexto de intervenção individual e de grupo. No âmbito da intervenção individual, a psicóloga destacou o seu potencial para "empatizar com o cliente e [...] a pessoa trazer dúvidas, questões e trabalhar sobre elas". No contexto de grupo, a enfermeira referiu que faria "grande insistência para verem a série e para a irmos discutindo", propondo a visualização da série como atividade extra à sessão e a sua discussão na sessão, funcionando, assim, como estímulo para a exploração das temáticas associadas à saúde sexual. Relativamente à utilização da série no meio escolar, a enfermeira explicou que teria de ser feito, primeiramente, um trabalho com os pais/família devido ao conflito intergeracional e ao facto de os encarregados de educação serem responsáveis pela educação dos seus educandos (ENFER: "Os pais ainda são responsáveis pela educação dos menores e essa é uma barreira que temos de desconstruir primeiro (...) para a seguir podermos disponibilizar isto para os estudantes"). No mesmo seguimento, a professora sugeriu que em reuniões de pais/encarregados de educação se mostrasse aos mesmos a importância da ES através de excertos, que seriam utilizados também na intervenção com os jovens, recomendando a visualização da série às famílias. Tanto profissionais, como jovens propuseram que a *Sex Education* poderia assumir um carácter transversal e de visualização obrigatória. Contudo, defenderam que a sua introdução deveria ocorrer apenas a partir do 3.º ciclo e ensino secundário (12-18 anos), com uma seleção das temáticas abordadas, de forma a garantir a adequação dos conteúdos à idade e ao desenvolvimento dos jovens. A docente também se referiu ao uso de excertos para esclarecer dúvidas dos alunos. Já a psicóloga apresentou algumas propostas mais específicas para a abordagem em algumas disciplinas, nomeadamente na disciplina de Inglês com o objetivo de clarificar o uso de pronomes e na de Filosofia para a elaboração de um ensaio sobre a produção. A este propósito foi ressaltado o potencial da série para aumentar as competências dos docentes para a ES, por terem considerado "que o trabalho deles [professores] ia ser muito mais fácil e, como não eram eles a introduzir o tema, eles mostravam o tal vídeo da série, se calhar, sentiam-se mais confortáveis a explicar o resto" (J2). Ainda no contexto da ES na escola, foi sugerida a realização de debates em torno da série, enquanto estímulo para uma intervenção dinamizada por pares (J6: "Intervenções entre a turma, onde aqueles que sabiam sobre informação podiam educar uns aos outros"). Foram também propostas outras estratégias, como a dinamização de uma peça de teatro, e a realização de ações de sensibilização no âmbito da saúde escolar.

DISCUSSÃO

A ES escolar, no contexto internacional como no português, tem-se focado excessivamente na vertente biológica da sexualidade e na prevenção de riscos, não tendo em consideração as necessidades desenvolvimentais e os interesses dos jovens (Ketting & Ivanova, 2018; Rocha & Duarte, 2015). Paralelamente, no meio familiar, têm-se evidenciado dificuldades em abordar os temas da sexualidade (European Expert Group on Sexuality Education, 2016; UNESCO, 2020). Estas lacunas na ES, formal e informal, contribuem para a desinformação e a falta de conhecimento, assim como para o recurso às novas tecnologias para procurar responder às dúvidas e às necessidades dos jovens (Nikkelen et al., 2020). Tendo em conta este panorama, torna-se relevante explorar o impacto que os *media* têm nos jovens e de que forma estes meios podem colmatar as necessidades de conhecimento sobre sexualidade e constituir-se como potenciais aliados na ES. Assim, o presente estudo propôs-se a estudar as perspetivas de jovens e profissionais sobre o impacto da série *Sex Education* nos jovens e a explorá-la como um recurso pedagógico para a ES.

Os resultados mostram que a *Sex Education* é vista como uma série realista e educativa que naturaliza a sexualidade, sendo uma das grandes novidades para os mais novos a abertura com que aborda esta temática. Esta observação reforça a hipótese de que a nossa sociedade continua a manter um clima de desconforto quanto à sexualidade (UNESCO, 2020). De facto, no presente estudo, os jovens revelaram o seu incômodo em dialogar com adultos sobre sexualidade, incluindo os pais a quem reconhecem igualmente a dificuldade em comunicar com os filhos. Esta dificuldade de comunicação está relatada noutros estudos que revelam que os pais, por vezes, se sentem desconfortáveis em falar de temas relacionados com a

sexualidade (European Expert Group on Sexuality Education, 2016) e os jovens evitam esses diálogos com receio de serem julgados (Grossman et al., 2021). No entanto, esta série sublinha a importância de conversar sobre sexualidade, disponibiliza modelos de diálogo e pode constituir-se um estímulo para conversas entre os telespectadores jovens e os seus pais. Pois, na opinião da maioria dos entrevistados, a *Sex Education* representa de forma bastante positiva a interação entre pais e filhos quanto aos temas relacionados com a sexualidade. O embaraço ao nível da comunicação sobre sexualidade leva alguns jovens entrevistados a recorrerem maioritariamente aos *media* para responderem às suas dúvidas e necessidades, comprovando que estes meios são aliados da população juvenil quanto à exploração destes temas, conforme avançado por estudos prévios (e.g. Coyne et al., 2019; Smith et al., 2016).

Na presente investigação, os jovens revelaram que se questionaram sobre diversos assuntos durante a visualização de *Sex Education*. Este resultado parece evidenciar que os jovens são espetadores com capacidade crítica, que refletem e que se questionam sobre os conteúdos que lhes são apresentados. Portanto, indica que os jovens participantes têm, pelo menos, algumas capacidades relacionadas com a literacia mediática (Scull et al., 2018). Evidencia também o potencial da série enquanto estímulo para o aprofundamento de conhecimentos válidos, formação de atitudes e valores quanto à sexualidade (Dudek et al., 2022; Santos et al. 2020). A este respeito, a grande maioria dos entrevistados acredita que a série é capaz de normalizar experiências e proporcionar aprendizagens relacionadas com a sexualidade e os relacionamentos, realçando ainda as profissionais a capacidade para promover competências e trabalhar estratégias de *coping* nestas áreas. A *Sex Education* é percecionada como uma potencial fonte de dissipaçāo de mitos e uma aliada na promoção da comunicação sexual, assim como na adoção de comportamentos de proteção. Assim, é reconhece-se que a série tem potencial para contribuir para a persecução de alguns propósitos da ES, se tivermos em conta que esta visa fornecer informação sobre a sexualidade e o comportamento sexual, com o objetivo de promover atitudes, comportamentos e valores saudáveis e positivos. A ES pretende, portanto, que os jovens usufruam desta dimensão de forma plena, segura e responsável (Grupo de Trabalho de Educação Sexual [GTES], 2007; Matos et al., 2014; WHO, 2015).

O processo de identificação com as personagens e situações retratadas contribui para este propósito. Os participantes jovens referiram identificar-se com determinadas situações ilustradas na trama, o que não é surpreendente, uma vez os jovens terem descrito esta produção como realista. A identificação com personagens ou situações ilustradas na *Sex Education* poderá contribuir para o processo de construção da identidade, pois, segundo Erikson (1968), a identificação com os meios de comunicação social permite-nos experimentar a realidade social a partir de outras perspetivas, moldando a identidade e as atitudes sociais. Pérez-Torres (2024) acrescenta que o processo de identificação com personagens dos *media*, pelo contacto com modelos de referência, facilita a aprendizagem de comportamentos através da imitação, mas também da exploração e posterior compromisso com comportamentos, valores e atitudes com que se identificam. Neste sentido, a *Sex Education*, enquanto recurso audiovisual, que disponibiliza personagens fictícias com as quais os espectadores, jovens e adultos, podem estabelecer uma conexão socioemocional e identificarse (Pérez-Torres, 2024), destaca-se por contemplar uma componente afetiva. Esta componente é crucial no processo de formação de atitudes e valores, ultrapassando a componente estritamente cognitiva inerente à transmissão de conhecimentos/informações adequados (Banaji & Heiphetz, 2010).

Os resultados do presente estudo confirmam, por conseguinte, o potencial da série *Sex Education* para intervir com jovens, conforme já revelado anteriormente (e.g., Santos & Almeida, 2022). Com efeito, segundo os participantes, a *Sex Education* é útil na intervenção com jovens acerca da sexualidade pelo facto de encarar a temática de uma perspetiva clara, naturalista e positiva. De facto, os jovens descreveram a série em análise como um recurso interessante e mais motivante para aprenderem e, segundo Igartua e Casanova (2014) assim como Tufte (2008), existe uma tendência crescente para se introduzirem conteúdos educativos em séries e outros formatos narrativos, progredindo no sentido de tornar os *media* instrumentos educativos relevantes. Assim, os resultados do presente estudo vão ao encontro de outros que já vinham ressaltando o potencial da *Sex Education* como um ótimo meio para os jovens adquirirem conhecimentos e se desenvolverem ao nível da sexualidade (e.g., Dudek et al., 2022; Lopes et al., 2019; Santos et al., 2020).

De facto, os participantes deste estudo realçaram que a série poderia ser utilizada na ES formal e informal. Sugeriram o recurso à *Sex Education* em contexto escolar, nomeadamente em aulas ou atividades com os estudantes e em reuniões com os pais, através da apresentação do próprio conteúdo, da realização de debates ou de dinamizações. Já no contexto da promoção da saúde, sugeriram que os profissionais recomendasssem a visualização da *Sex Education* em atendimento individual ou em intervenções em grupo, ou a utilizassem nas ações de sensibilização realizadas. No entanto, apesar das significativas potencialidades, os entrevistados reconhecem que o conteúdo multimédia não aborda de forma profunda alguns temas, deixando igualmente outros de parte, pelo que defendem ser necessário a intervenção de um

profissional, de modo a clarificar e complementar as informações transmitidas pela série, tal como sugerido noutros estudos em diferentes países.

CONCLUSÃO

Os resultados encontrados na presente investigação estão de acordo com a função pedagógica da série evidenciada anteriormente noutros estudos, em diferentes países, como Brasil, Bélgica e Espanha (Bréda, 2020; Rodríguez et al., 2020; Santos et al., 2020; Silva et al., 2020). Assim, com os resultados do presente estudo, realizado em Portugal, é reforçada a pertinência da série, inclusive num contexto sociopolítico mais favorável à ES, assim como o amplo alcance e potencial da mesma na promoção da saúde sexual, na cultura ocidental.

Os resultados do presente estudo devem, contudo, ser interpretados com cautela dada a sua natureza exploratória, que limita a generalização das suas conclusões. Esta limitação foi agravada pela impossibilidade de realizar um maior número de entrevistas, tanto com profissionais como com jovens, dada a dificuldade na seleção de participantes. Outra limitação prendeu-se com o facto de a *Sex Education* ter, no momento da recolha, três temporadas e a sua estreia ter ocorrido em 2019, pelo que alguns participantes revelaram alguma dificuldade em recordar-se de todas as temporadas, tendo inclusive feito referência a cenas de outras séries que acreditavam ser da produção em estudo. Por último, uma vez que as entrevistas com os jovens ocorreram via Zoom surgiram ocasionalmente constrangimentos na percepção das falas aquando da sua transcrição.

Assim, no que toca a investigação futura, sugerimos igualmente a replicação deste estudo com a alteração do procedimento de recolha de dados para entrevistas em grupo. As entrevistas em grupo permitirão ter acesso, num único momento e local, à partilha de informações entre os participantes, promovendo o debate acerca das suas diferentes perspetivas sobre os temas em estudo. Seria também interessante o estudo das representações de pais sobre a série *Sex Education*, assim como da sua percepção acerca do impacto desta nos jovens. Também seria pertinente a construção, implementação e avaliação de um programa de ES, com base na série, enquanto recurso pedagógico, onde os episódios ou excertos da série pudessem ser utilizados como estímulo.

Apesar das limitações apresentadas, cremos que este estudo confirma o potencial da série *Sex Education*, assim como o seu contributo para a prática da ES, principalmente no contexto português (em particular no da Ilha da Madeira) onde, contrariamente ao contexto brasileiro, nenhum estudo se tinha debruçado ainda sobre o impacto desta série e, simultaneamente, há a necessidade de utilizar recursos pedagógicos na ES que vão ao encontro das necessidades e preferências dos jovens. Ademais, este estudo apresenta sugestões para eventuais futuras temporadas deste conteúdo multimédia e explora-o como um recurso pedagógico na ES.

REFERÊNCIAS

Banaji, M. R., & Heiphetz, L. (2010). Attitudes. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th ed., pp. 353–393). John Wiley & Sons, Inc.

Bardin, L. (2011). *Análise de conteúdo*. Edições 70.

Bréda, M. (2020). *Séries télévisées et sexualité: les séries, un outil pédagogique à l'éducation à la vie relationnelle, affective et sexuelle. Analyse de la série Sex Education et du Petit Manuel Sex Education* [Dissertação de Mestrado, Université Catholique de Louvain]. DIAL.mem : UCLouvain Electronic Master theses. <https://dial.uclouvain.be/memoire/ucl/object/thesis:25926>

Coyne, S. M., Ward, L. M., Kroff, S. L., Davis, E. J., Holmgren, H. G., Jensen, A. C., Erickson, S. E., & Essig, L. W. (2019). Contributions of mainstream sexual media exposure to sexual attitudes, perceived peer norms, and sexual behavior: A meta-analysis. *Journal of Adolescent Health*, 64(4), 430-436. <https://doi.org/10.1016/j.jadohealth.2018.11.016>

Dias, S., & Matos, M. G. (2013). Educação sexual em meio escolar: percepção dos alunos. *Revista de Psicologia da Criança e do Adolescente*, 4(2), 51-71. <https://doi.org/10.34628/sp4s-0f47>

Drury, K. M., & Bukowski, W. M. (2013). Sexual development. In D. S. Bromberg & W. T. O'Donohue (Eds.), *Handbook of child and adolescent sexuality: Developmental and forensic psychology* (pp. 115–144). Elsevier Academic Press. <https://doi.org/10.1016/B978-0-12-387759-8.00005-2>

Dudek, D., Woodley, G., & Green, L. (2022). 'Own your narrative': teenagers as producers and consumers of porn in Netflix's *Sex Education*. *Information, Communication & Society*, 25(4), 502-515. <https://doi.org/10.1080/1369118X.2021.1988130>

Erikson, E. (1968). *Identity youth and crisis*. Norton.

European Expert Group on Sexuality Education. (2016). Sexuality education - what is it? *Sex Education*, 16(4), 427-431. <https://doi.org/10.1080/14681811.2015.1100599>

Flores, D., & Barroso, J. (2017). 21st Century parent-child sex communication in the United States: A process review. *The Journal of Sex Research*, 54(4-5), 532-548. <https://doi.org/10.1080/00224499.2016.1267693>

Grossman, J. M., Lynch, A. D., DeSouza, L. M., & Richer, A. M. (2021). Resources for teens' health: Talk with parents and extended family about se.g., *Journal of Child and Family Studies*, 30(2), 338-349. <https://doi.org/10.1007/s10826-020-01896-x>

Grupo de Trabalho de Educação Sexual. (2007). *Relatório final*. http://www.apf.pt/sites/default/files/media/2015/relatorio_final_gtes.pdf

Igartua, J. J., & Casanova, J. V. (2014). Ficción televisiva, edu-entretenimiento y comunicación para la salud. *Revista de Estudios de Juventud*, 106, 15-29. <https://www.injuve.es/sites/default/files/2014/47/publicaciones/1%20Ficci%C3%B3n%20televisiva%20y%20edu-entretenimiento.pdf>

Jones, K., Williams, J., Sipsma, H., & Patil, C. (2019). Adolescent and emerging adults' evaluation of a Facebook site providing sexual health education. *Public Health Nursing*, 36(1), 11-17. <https://doi.org/10.1111/phn.12555>

Ketting, E., & Ivanova, O. (2018). *Sexuality education in Europe and central Asia: State of the art and recent developments, an overview of 25 countries*. Federal Centre for Health Education. https://oegf.at/wp-content/uploads/2021/09/BZgA_Comprehensive-Country-Report_online_EN.pdf

Landry, M., Turner, M., Vyas, A., & Wood, S. (2017). Social media and sexual behavior among adolescents: Is there a link? *JMIR Public Health and Surveillance*, 3(2), e28. <https://doi.org/10.2196/publichealth.7149>

Lei nº 60/2009 da Assembleia da República. (2009). Diário da República: I Série, nº 151. <https://diariodarepublica.pt/dr/detalhe/lei/60-2009-494016>

Lopes, D. S., Franco, L. S., & Alves, L. R. (2019, agosto 26-27). *Descomplicando o Vocabulário: Contribuições para o diálogo entre educação e saúde a partir da série Sex Education*. [Paper presentation]. STAES'19 Seminário de Tecnologias Aplicadas em Educação e Saúde, Salvador, Brasil. <https://www.revistas.uneb.br/index.php/staes/article/view/8211/5283>

Matos, M. G., Reis, M., Ramiro, L., Ribeiro, J. P., & Leal, I. (2014). Educação sexual em Portugal: Legislação e avaliação da implementação nas escolas. *Psicologia, Saúde e doenças*, 15(2), 335-355. <http://dx.doi.org/10.15309/14psd150203>

Nikkelen, S. W., Oosten, J. M., & Borne, M. M. (2020). Sexuality education in the digital era: Intrinsic and extrinsic predictors of online sexual information seeking among youth. *The Journal of Sex Research*, 57(2), 189-199. <https://doi.org/10.1080/00224499.2019.1612830>

Pérez-Torres, V. (2024). Social media: a digital social mirror for identity development during adolescence. *Current Psychology*, 43. <https://doi.org/10.1007/s12144-024-05980-z>

Portaria nº 196-A/2010 do Ministérios da Saúde e da Educação. (2010). Diário da República: I Série, nº 69. <https://diariodarepublica.pt/dr/detalhe/portaria/196-a-2010-388625>

Prinstein, M. J., Nesi, J., & Telzer, E. H. (2020). Commentary: An updated agenda for the study of digital media use and adolescent development - future directions following Odgers & Jensen (2020). *Journal of Child Psychology and Psychiatry*, 61(3), 349-352. <https://doi.org/10.1111/jcpp.13219>

Rocha, A. C., & Duarte, C. (2011). Conversas em família sobre sexualidade adolescente. In P. M. Matos, C. Duarte, & M. E. Costa (Eds.), *Famílias: questões de desenvolvimento e intervenção* (pp. 59-80). LivPsic.

Rocha, A. C., & Duarte, C. (2015). Sexuality education in a representative sample of Portuguese schools: Examining the impact of legislation. *The European Journal of Contraception & Reproductive Health Care*, 20(1), 47-56. <https://doi.org/10.3109/13625187.2014.951996>

Rocha, A. C., Leal, C., & Duarte, C. (2016). School-based sexuality education in Portugal: Strengths and weaknesses. *Sex Education*, 16(2), 172-183. <https://doi.org/10.1080/14681811.2015.1087839>

Rodríguez, L. V., García-Ramos, F. J., & Hernández, F. Z. (2020). La representación de identidades queer adolescentes en "Sex Education" (Netflix, 2019-). *Fonseca, Journal of Communication*, 22(21), 43-64. <https://doi.org/10.14201/fjc2020214364>

Rosa, C. E., Zanette, J. E., & Felipe, J. (2021). Da série "Sex Education" aos desafios contemporâneos de uma educação para a sexualidade. *Textura*, 23(53), 238-259. <https://doi.org/10.29327/227811.23.53-12>

Sánchez, F. L. (2005). *La educación sexual*. Biblioteca Nueva.

Santos, L. G., Santos, A. L., & Miranda, J. R. (2020, outubro 15-17). *Sex Education: Uma análise sobre a importância da mídia para a educação sexual* [Apresentação de trabalho]. Conedu: VII Congresso Nacional de Educação, Brasil. https://editorarealize.com.br/editora/anais/conedu/2020/TRABALHO_EV140_MD1_SA7_ID696_07072020162649.pdf

Santos, M. S., & Almeida, P. B. (2022). Educação sexual na aula de espanhol: Uma proposta de ensino através da primeira temporada da série *Sex Education*. *Revista Humanidades e Inovação*, 9(8), 10-20. <https://revista.unitins.br/index.php/humanidadeseinovacao/article/view/4008>

Scull, T. M., Kupersmidt, J. B., Malik, C. V., & Morgan-Lopez, A. A. (2018). Using media literacy education for adolescent sexual health promotion in middle school: Randomized control trial of Media Aware. *Journal of Health Communication*, 23(12), 1051-1063. <https://doi.org/10.1080/10810730.2018.1548669>

Silva, R. A., Henrique, J. S., & Silva, J. G. (2020, agosto 24-28). *O potencial formativo da série Sex Education na constituição do diálogo entre educação e mídias digitais* [Apresentação de trabalho]. Congresso Internacional de Educação e Tecnologias/Encontro de Pesquisadores em Educação a Distância, Brasil. <https://cietenped.ufscar.br/submissao/index.php/2020/article/view/1393/1057>

Simon, L., & Daneback, K. (2013). Adolescents' use of the internet for sex education: A thematic and critical review of the literature. *International Journal of Sexual Health*, 25(4), 305-319. <https://doi.org/10.1080/19317611.2013.823899>

Smith, L. W., Liu, B., Degenhardt, L., Richters, J., Patton, G., Wand, H., Cross, D., Hocking, J. S., Skinner, S. R., Cooper, S., Lumby, C., Kaldor, J. M., & Guy, R. (2016). Is sexual content in new media linked to sexual risk behaviour in young people? A systematic review and meta-analysis. *Sexual Health*, 13(6), 501-515. <https://doi.org/10.1071/SH16037>

Tufte, T. (2008). El edu-entretenimiento: buscando estrategias comunicacionales contra la violencia y los conflictos. *Intercom - Revista Brasileira de Ciências da Comunicação*, 31(1), 157-182. <http://www.redalyc.org/articulo.oa?id=69830989008>

UNESCO (2019). *Orientações técnicas internacionais de educação em sexualidade: Uma abordagem baseada em evidências* (2ª ed.). <https://www.unfpa.org/sites/default/files/pub-pdf/369308por.pdf>

UNESCO (2020). *Evidências emergentes, lições e práticas da educação integral em sexualidade: Revisão global*. <https://unesdoc.unesco.org/ark:/48223/pf0000378187>

Vannucci, A., Simpson, E. G., Gagnon, S., & Ohannessian, C. M. (2020). Social media use and risky behaviors in adolescents: A meta-analysis. *Journal of Adolescence*, 79, 258-274. <https://doi.org/10.1016/j.adolescence.2020.01.014>

WHO (2015). *Sexual health, human rights and the law*. <https://www.who.int/publications/i/item/9789241564984>

WHO (2010). *Standards for sexuality education in Europe: A framework for policy makers, educational and health authorities and specialists*. <https://www.icmec.org/wp-content/uploads/2016/06/WHOStandards-for-Sexuality-Ed-in-Europe.pdf>

Zapiain, J. (2013). *Psicología de la sexualidad*. Alianza Editorial.

DECLARAÇÃO DE CONTRIBUIÇÃO DE AUTORIA CRediT

Carla Jaques: Concretualização; Análise formal; Investigação; Metodologia; Validação; Visualização; Redação do rascunho original; Redação – revisão e edição. **Ana Cristina Rocha:** Concretualização; Análise formal; Investigação; Metodologia; Validação; Visualização; Redação do rascunho original; Redação – revisão e edição. **Cidália Duarte:** Concretualização; Análise formal; Investigação; Metodologia; Validação; Visualização; Redação do rascunho original; Redação – revisão e edição.

Historial do artigo

Recebido	18/03/2024
Aceite	05/08/2025
Publicado online	-
Publicado	31/12/2025

The European Portuguese version of the Revised Anticipated Sexual Jealousy Scale: Psychometric properties in a sample of individuals in dating relationships

Alexandra Martins  ¹, Isabel Narciso  ², Maria Cristina Canavarro  ¹ & Marco Pereira  ¹

¹ University of Coimbra, Center for Research in Neuropsychology and Cognitive and Behavioral Intervention, Faculty of Psychology and Educational Sciences, Coimbra, Portugal

² University of Lisbon, Research Center for Psychological Science, Faculty of Psychology, Lisbon, Portugal

Abstract: The aim of this study was to examine the psychometric properties of the European Portuguese version of the Revised Anticipated Sexual Jealousy Scale (RASJS). The sample consisted of 578 heterosexual participants (68.3% female) in a dating relationship for an average of about 34 months. Participants completed the RASJS and self-reported measures assessing romantic attachment and relationship and sexual satisfaction. Confirmatory factor analysis corroborated the three-factor solution. The RASJS showed good reliability (Cronbach's alpha range: .77-.92; McDonald's omega range: .76-.92) as well as construct and criterion-related validity. Participants who did not report their own past history of infidelity showed higher values of reactive jealousy than those who reported these experiences; and individuals who reported a past history of a partner's infidelity presented significantly higher anxious jealousy. Sex differences in romantic jealousy were not significant. The RASJS is particularly suitable for the assessment of romantic jealousy, and its psychometric characteristics validate its use in Portugal.

Keywords: Intimate relationships; Jealousy; Psychometric properties; Reliability; Validity.

A substantial body of research has investigated jealousy in the context of romantic relationships (Elphinston et al., 2011; Martínez-León et al., 2017; Valentova et al., 2022). Romantic jealousy has been defined "as a complex set of thoughts, feelings and actions that follow a threat to self-esteem and/or threaten the existence or quality of the relationship" (White, 1981, p. 24). Jealousy may be experienced in response to a threat to or the actual loss of a valued relationship with another person due to an actual or imagined rival for a partner's attention (e.g., Buunk & Dijkstra, 2004; DeSteno & Salovey, 1996). Romantic jealousy has been associated with a multiplicity of negative relationship outcomes, such as domestic violence (Babcock et al., 2004) and relationship dissatisfaction (Barelds & Barelds-Dijkstra, 2007; Bevan, 2008), and it is commonly a focus of marital therapy (Buunk & Dijkstra, 2001). Moreover, jealousy has been associated with infidelity (e.g., Buunk & Fernandez, 2020; Richter et al., 2022), which may have a negative effect on relationships (Banfield & McCabe, 2001). However, from an evolutionary perspective, jealousy has been considered an adaptive behavior (Buss, 2000), with some authors suggesting that jealousy is a positive phenomenon that indicates partners' importance to each other and is related to higher commitment and relationship satisfaction (Barelds & Dijkstra, 2006; Rydell et al., 2004).

Jealousy has been conceptualized through various typologies, most of which are dichotomous (e.g., Parrott, 1991; Rydell & Bringle, 2007). For instance, sexual jealousy (distress about a partner's sexual infidelity) vs. emotional jealousy (distress about a partner's emotional infidelity) has been a topic of extensive research (Southard & Abel, 2010). Currently, however, most authors favor a multidimensional approach to better understand how jealousy is conceptualized and experienced (Attridge, 2013). A multidimensional approach to jealousy has been suggested by White (1981), White and Mullen (1989), and Pfeiffer and Wong (1989), who made a distinction between emotional, cognitive, and behavioral dimensions of jealousy. Building from this multidimensional approach, Pfeiffer and Wong (1989) developed the Multidimensional Jealousy Scale, which has demonstrated adequate psychometric properties across cultures (e.g., Diotaiuti et al., 2022; Elphinston et al., 2011).

Subsequently, Buunk (1997) and Buunk and Dijkstra (2006) distinguished three qualitatively different types of jealousy: reactive, anxious, and possessive (also referred to as preventive) jealousy. According to their definitions, reactive jealousy is the degree to which individuals experience negative

¹ Correspondence address: Marco Pereira E-mail: marcopereira@fpce.uc.pt

emotions, such as anger and upset, when their partner is or has been emotionally and/or sexually unfaithful with someone else. Anxious jealousy refers to the process in which individuals worry about and cognitively generate images of a partner's infidelity and experience feelings of anxiety, suspicion and distrust. Possessive jealousy refers to the considerable effort that jealous individuals may make to prevent even innocent or superficial contact between their partner and a third party. As an extreme consequence, possessive jealous individuals may even resort to violence to limit their partner's autonomy.

This typology closely resembles previous approaches (e.g., Pfeiffer & Wong, 1989; White & Mullen, 1989), as reactive jealousy contains a strong emotional component; anxious jealousy contains a strong cognitive component; and possessive jealousy contains a strong behavioral component. Although reactive, anxious, and possessive jealousy differ, to some extent, they all include emotional, cognitive, and behavioral components (Barelds & Barelds-Dijkstra, 2007; Barelds & Dijkstra, 2006). Buunk's typology considers the possibility that jealousy may occur not only in response to an actual relationship threat (e.g., when one's partner is flirting with someone else) but also in the absence of such a threat. Finally, and essential to the typology proposed by Buunk (1997), is the assumption that types of jealousy differ regarding the extent to which they are potentially problematic (Barelds & Dijkstra, 2006). Because reactive jealousy constitutes a direct response to an actual relationship threat, it can be considered relatively healthy or rational. Both anxious and possessive jealousy may be triggered not only in response to a partner's actual infidelity but also in the absence of an actual rival (Buunk & Dijkstra, 2006), and therefore may become problematic or pathological in nature.

As mentioned, several typologies have been developed to understand and assess the concept of jealousy (e.g., Buunk, 1997; Pfeiffer & Wong, 1989; Rydell & Bringle, 2007), which has led to distinct results that are often difficult to compare. Moreover, as the experience of jealousy in intimate relationships may be complex, the existence of well-validated measures that assess it properly are particularly valuable. One widely used measure of romantic jealousy (that considers jealousy as a multidimensional construct) is the Revised Anticipated Sexual Jealousy Scale (RASJS; Buunk, 1997), which is an adapted version of the Anticipated Sexual Jealousy Scale developed by the same author that measured only reactive jealousy. Anxious and possessive subscales were newly constructed at the time of Buunk's (1997) study, because no appropriate measures for these types of jealousy were available. This scale has been used in several studies, specifically with samples of heterosexual and non-heterosexual adults in romantic relationships (married, cohabiting or in a relationship, without living together), and has shown good psychometric properties in general (e.g., Barelds & Barelds-Dijkstra, 2007; Barelds & Dijkstra, 2006; Barelds et al., 2017; Kolb & Owen, 2014; Tandler & Petersen, 2020). Additionally, previous research has underlined the importance of distinguishing between distinct types of jealousy, which seem to be differently associated with other constructs (e.g., satisfaction, relationship quality; Barelds & Barelds-Dijkstra, 2007). Therefore, Buunk's (1997) typology may be useful to better understand the complex role of jealousy in romantic relationships.

Despite the diversity of measures that have been used to assess romantic jealousy, most of them are unidimensional (e.g., the Relationship Jealousy Scale, White, 1981; Interpersonal Jealousy Scale, Mathes & Severa, 1981) or based on evoking scenarios (e.g., Infidelity Dilemmas, Buss et al., 1999; Buss et al., 1992; Jealousy Evoking Scenario, Dijkstra & Buunk, 2002). Few present the advantages of the RASJS (Buunk, 1997), such as its multidimensionality, easy administration and brevity. Therefore, the aim of this study was to assess the psychometric properties of the European Portuguese version of the RASJS in a sample of individuals from the general population in intimate dating relationships.

METHOD

Participants

Participants were eligible for inclusion in the study if they met the following criteria: a) 18 years or older; b) self-defined as heterosexual; c) involved in an exclusive dating relationship for at least three months at the time of participation (however, the involvement of both members of the couple was not required); d) the ability to read and understand the Portuguese language to complete the assessment protocol; and e) agreeing to participate in the study.

The sample of this study consisted of 578 participants (395 women and 183 men) with a mean age of 23.35 years ($SD = 3.56$; range: 18-43 years). The sample characteristics are detailed in Table 1. Overall, men had a lower level of education than women and were less likely to be students and to report espousing the Catholic faith. Male participants were in their current relationship for less time than female participants. Both men and women reported that their first sexual encounter was between the ages of 17 and 18 years. Regarding a prior history of infidelity, women were more likely than men to report a past history of a partner's infidelity.

Table 1. Sample characteristics

	Men (n = 183)		Women (n = 395)		χ^2	Cramer's V
	n	%	n	%		
Education					38.13***	.26
≤12 years	66	(36.1)	54	(13.7)		
>12 years	117	(63.9)	341	(86.3)		
Professional situation					17.56**	.17
Employed	66	(36.1)	87	(22.0)		
Unemployed	10	(5.5)	45	(11.4)		
Retired	1	(0.5)	0	(0.0)		
Student	106	(57.9)	263	(66.6)		
Residence					0.13	.02
Urban	134	(73.6)	283	(72.2)		
Rural	48	(26.4)	109	(27.8)		
Religion					6.00*	.10
None	71	(39.9)	111	(28.9)		
Catholic	110	(60.8)	273	(71.1)		
Own past history of infidelity					1.19	.05
No	126	(70.8)	290	(75.1)		
Yes	52	(29.2)	96	(24.9)		
Past history of partner's infidelity					5.49*	.10
No	125	(70.2)	234	(60.0)		
Yes	53	(29.8)	156	(40.0)		
	<i>M (SD)</i>		<i>M (SD)</i>		<i>t</i>	Cohen's <i>d</i>
Age (years)	23.71 (3.48)		23.19 (3.59)		-1.64	0.15
Relationship length (months)	29.40 (24.33)		36.15 (27.40)		2.85**	0.26

Note: The Ns of variables do not add up to 578 due to missing values. The number of missing responses ranged from 0 to 14.

* $p < .05$; ** $p < .01$; *** $p < .001$

Measures

Sociodemographic and relational information. Sociodemographic (e.g., age, gender, education, religion) and relational information (e.g., “Without considering your current relationship, have you ever been unfaithful to a partner?” and “Without considering your current relationship and to your knowledge, has a partner ever been unfaithful to you?” assessed the respondent’s own past history of infidelity and the past history of a partner’s infidelity, respectively) were obtained using a self-report questionnaire developed by the researchers.

Revised Anticipated Sexual Jealousy Scale (RASJS). The RASJS (Buunk, 1997) is a 15-item self-reported measure of jealousy that assesses reactive, anxious, and possessive jealousy, with five items for each type. The items of the reactive jealousy subscale, which are assessed on a 5-point response scale ranging from 1 (*Not at all upset*) to 5 (*Extremely upset*), ask participants how upset they would feel if their partner engaged in diverse intimate and sexual extradyadic behaviors, such as “discussing personal things with someone of the opposite sex” and “having sex with someone else.” Anxious jealousy is also measured on a 5-point scale ranging from 1 (*Never*) to 5 (*All the time*) by items such as “I am concerned that my partner finds someone else more attractive than me” and “I am worried that my partner will leave me for someone else.” Finally, possessive jealousy is assessed by items such as “I expect my partner not to look at other men/women” and “I am rather possessive with regard to my partner.” For each item, possible answers range from 1 (*Not applicable*) to 5 (*Very much applicable*). The score for each subscale is obtained by the mean of the items, and higher scores denote higher levels of the respective type of jealousy. In the original study (Buunk, 1997), the three subscales were shown to have good reliability (Cronbach’s alphas all above .76).

Experiences of Close Relationships – Short Form (ECR-SF). The ECR-SF (Wei et al., 2007) is a 12-item short form of the Experiences in Close Relationships Scale (ECR; Brennan et al., 1998) that assesses attachment orientations in close relationships on a 7-point response scale (1 = *Strongly disagree* to 7 = *Strongly agree*). This measure is divided into two subscales, each comprising six items, which correspond to the dimensions of anxiety (e.g., “I get frustrated if romantic partners are not available when I need them”) and avoidance (e.g., “I try to avoid getting too close to my partner”). Higher scores on the anxiety and

avoidance subscales indicate higher levels of anxious and avoidant attachment, respectively. In the original study (Wei et al., 2007), and across the six studies, the subscales were shown to have good reliability (all Cronbach's alphas above .77). The reliabilities in the current study sample were .66 for anxiety and .74 for avoidance.

Investment Model Scale (IMS). The IMS (Rusbult et al., 1998) assesses the four constructs of the investment model: satisfaction level, quality of alternatives, investment size, and commitment level. The first three subscales (i.e., satisfaction level, quality of alternatives and investment size) are measured by two types of items, described as facet items and global items. Facet items are specific examples of the construct that are designed to prepare the participant to answer the global items, which provide a more general measure of the construct items (examples for the quality of alternatives subscale are "An alternative relationship could fulfill my needs for intimacy" [facet item] and "My alternatives to our relationship are close to ideal" [global item]). The commitment subscale uses only global items. Facet items are answered on a 4-point scale from 1 (*Completely disagree*) to 4 (*Completely agree*). The global items are answered on a 9-point response scale ranging from 0 (*Do not agree at all*) to 8 (*Completely agree*). Scores are obtained by adding the ratings for the global items, with higher scores representing higher levels of the respective concept. In the original validation study (Rusbult et al., 1998), and across the three studies, the Cronbach's alphas were all above .82. In this sample, the reliabilities ranged between .78 (investment) and .89 (commitment).

Global Measure of Sexual Satisfaction (GMSEX). The GMSEX (Lawrence & Byers, 1998) is a 5-item measure of overall sexual satisfaction that requires participants to respond to the question, "Overall, how would you rate your sexual relationship with your partner?" The items consist of five 7-point bipolar scales, Good-Bad; Pleasant-Unpleasant; Positive-Negative; Satisfying-Unsatisfying; and Valuable-Worthless, with 1 indicating dissatisfaction and 7 indicating satisfaction. The total score is calculated by summing all the items. Higher scores on the GMSEX indicate greater sexual satisfaction. In the original validation study (Lawrence & Byers, 1998), Cronbach's alpha was .90. Cronbach's alpha in this sample was .94.

Procedures

This study was approved by the Ethics Committee of the Faculty of Psychology and Educational Sciences of the University of Coimbra. First, the European Portuguese version of the RASJS scale was developed through a forward-backward translation procedure. After obtaining authorization from the authors of the original version to translate and validate the scale, two researchers independently translated the items. The two translated versions were compared, and after discussing and analyzing their similarities and differences, the first Portuguese version was obtained. This preliminary version was subsequently translated back into English by another individual who was fluent in English and was not familiar with the questionnaire. Finally, the original and the back-translated versions were compared, and translation difficulties were analyzed and resolved between translators to obtain a comprehensible instrument that was conceptually consistent with the original.

Participants were recruited through convenience sampling by two methods: 1) in a community context ($n = 178$) and 2) through an online survey ($n = 400$). Regarding the first method, participants were recruited in different outdoor areas of the faculties of the university. Information was provided about the objective and the general procedures of the study as well as the inclusion criteria and ethical considerations, particularly the confidentiality and anonymity of the responses. In the paper version, to guarantee the confidentiality of the participants, an envelope was provided with the assessment protocol with instructions to place the completed set of self-report questionnaires in the envelope. The participants could give the envelope to the researcher directly or leave it in a previously established place at their faculty (to be collected by the researcher). The envelopes were not opened until the data collection was completed. It was also explained to the participants that they should not complete the online survey if they had answered the paper version.

At the same time, data were collected through a web-based version of the set of questionnaires (Limesurvey ©) placed on the university's website. A web page was created on the social network Facebook where the study's aims, ethical considerations, inclusion criteria, and participants' and researchers' roles were described. A link to the online survey was provided on the same page that gave access to the research protocol. In both contexts, participants were informed that their participation in the study was voluntary and that no monetary or other compensation would be provided. Data collection was conducted between January 2012 and December 2014.

Data analyses

Data analyses were conducted using the Statistical Package for Social Sciences (IBM SPSS, version 29.0). In this study, only completed questionnaires in the measures of interest were retained for analyses (dropout rate: 39%); therefore, there were no missing cases in the main variables. Descriptive statistics were computed to analyze the sample's sociodemographic characteristics and the item's distributional characteristics (e.g., mean, standard deviation, skewness and kurtosis, floor and ceiling effects). Chi-square tests and Student's *t* tests were conducted to compare the two groups (men vs. women) on categorical and continuous variables, respectively. Item-level confirmatory factor analysis (CFA) and measurement invariance (by data collection method) was performed using the JASP software (version 0.19.3), with the Robust Maximum Likelihood (MLR) estimator, as evidence of multivariate normality was not found. Goodness of fit was verified by the following fit indices: the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA; 90% confidence interval [CI]), and standardized root mean squared residual (SRMR). These models are considered to have an acceptable fit when CFI and TLI $> .90$, RMSEA $< .08$, and SRMR $\leq .08$ (Byrne, 2010). We also examined the χ^2 statistic, which indicates whether the covariation pattern in the data can be explained by the postulated factor structure. We examined the $\chi^2/\text{degrees of freedom ratio}$ (χ^2/df), which decreases and approaches zero as the fit of the model improves (values between 2 and 5 indicate an acceptable fit; Byrne, 2010). In measurement invariance, we followed the criteria of the invariance test suggested by Chen (2007): $\Delta\text{CFI} \leq .01$, $\Delta\text{RMSEA} \leq .01$, and $\Delta\text{SRMR} \leq .025$. The presence of multicollinearity was assessed with a Variance Inflation Factor (VIF).

To explore the internal consistency of the RASJS, Cronbach's alphas were obtained for each subscale. Cronbach's alphas and McDonald's omega were calculated to analyze the internal consistency indices. For both indices, values above .70 were considered acceptable (Dunn et al., 2013). The average inter-item correlation (AIIC) was computed to assess item homogeneity, while the average item-rest correlation (AIRC) was used to examine the discriminating power of the RASJS items. Pearson correlations were computed to determine content and criterion-related validity. The average variance extracted (AVE) was computed to examine evidence regarding convergent validity (Fornell & Larcker, 1981). Finally, a multivariate analysis of variance (MANOVA) was conducted to examine differences in the three types of jealousy by gender and past infidelity experiences. Effect sizes were calculated for all statistical tests (small effects: Cohen's *d* ≥ 0.20 , Partial eta-squared = .01, Cramer's *V* $\geq .01$; medium effects: Cohen's *d* ≥ 0.50 , Partial eta-squared = .06, Cramer's *V* $\geq .03$; large effects: Cohen's *d* ≥ 0.80 , Partial eta-squared = .14, Cramer's *V* $\geq .05$; Cohen, 1988, 1992). All tests were two-tailed, and a *p* value $<.05$ was defined as the cut-off for statistical significance.

RESULTS

Descriptive analyses of the RASJS items

Descriptive statistics for the items are presented in Table 2. Floor and ceiling effects were detected for most items (i.e., more than 15% of respondents achieved the lowest or highest possible score, respectively; Terwee et al. 2007). The floor effect was detected in most items of anxious and possessive jealousy subscales, while the ceiling effects were detected for most items of reactive jealousy. Overall, no substantial deviations from normality were observed in the distribution of most items, considering a coefficient of absolute skewness > 2 and a coefficient of absolute kurtosis > 7 as reference values for samples with more than 300 participants (West et al. 1995), except for Items 3, 5 and 12, which displayed substantial skewness and kurtosis.

Confirmatory factor analysis

No multicollinearity was found (all items presented a VIF < 5). The CFA supported the original three-domain structure but had an unacceptable fit to the data, with $\chi^2 = 606.55$, *df* = 87, *p* $< .001$; CFI = .89; TLI = .86; RMSEA = .102 (90% CI .094–.109), SRMR = .083. Inspection of the modification indices suggested that Items 7 and 8 (MI = 229.31) might be correlated, which was added, as they were theoretically plausible. The modified model had an acceptable fit, with $\chi^2 = 425.09$, *df* = 86, *p* $< .001$; CFI = .926; TLI = .91; RMSEA = .083 (90% CI .075–.091), SRMR = .076. The standardized factor loadings of all items but one (Item 2) on their respective factors were above .50 (see Figure 1) and all were statistically significant with *p* $< .001$.

We also analyzed the measurement invariance of data collection method. Overall, the RASJS satisfied the metric invariance test ($\Delta\text{CFI} = .008$, $\Delta\text{RMSEA} = .001$, $\Delta\text{SRMR} = .009$), the scalar invariance test ($\Delta\text{CFI} = .001$, $\Delta\text{RMSEA} = .003$, $\Delta\text{SRMR} = .006$), but not the strict invariance test ($\Delta\text{CFI} = .046$, $\Delta\text{RMSEA} = .016$, $\Delta\text{SRMR} = .008$).

Table 2. Descriptive statistics of the RASJS items

Item [Portuguese translation]	Min-Max	M	SD	Skewness	Kurtosis	Floor (%)	Ceiling (%)
1. Flirt [<i>flirting</i> com outra pessoa]	1-5	4.38	0.91	-1.70	2.843	2.1	58.5
2. Private matters [assuntos pessoais]	1-5	3.25	1.15	-0.32	-0.64	9.3	13.8
3. Sexual contact [sexo com outra pessoa]	1-5	4.87	0.54	-5.31	30.95	1.0	92.6
4. Intimate dancing [dançar intimamente com alguém]	1-5	4.38	0.95	-1.79	3.00	2.6	60.2
5. Kiss on mouth [beijar na boca alguém ao cumprimentar ou a despedir-se]	1-5	4.70	0.77	-3.21	10.77	1.9	82.0
6. Find someone attractive [encontrar alguém atraente]	1-5	2.71	1.21	0.32	-0.83	16.6	9.3
7. Sexual relationship [relação sexual com outra pessoa]	1-5	2.30	1.28	0.74	-0.53	33.9	8.8
8. Sexual interest [interesse sexual noutra pessoa]	1-5	2.36	1.27	0.66	-0.62	31.3	8.5
9. Worry about contact with other sex [preocupação com o que pode acontecer quando se entra em contacto com pessoas do sexo oposto]	1-5	2.23	1.14	0.77	-0.17	31.1	5.4
10. Leave me [deixar-me]	1-5	2.51	1.29	0.55	-0.78	25.6	11.1
11. Contact with other sex [contacto com pessoas do sexo oposto]	1-5	2.12	1.21	0.84	-0.31	42.4	5.7
12. Friendship with other sex [amizades do sexo oposto]	1-5	1.41	0.88	2.51	6.11	76.3	2.4
13. Look at other sex [olhar para pessoas do sexo oposto]	1-5	2.18	1.19	0.72	-0.49	37.9	4.5
14. Claiming [ser bastante possessive]	1-5	2.08	1.19	0.87	-0.25	43.3	4.8
15. No freedom [não dar espaço suficiente]	1-5	1.73	0.97	1.34	1.39	54.0	2.1

Reliability

The reliability coefficients were very satisfactory for the three types of jealousy. The Cronbach alphas for the three types of jealousy were: .77 for reactive jealousy (.77 for women and .76 for men), .92 for anxious jealousy (.93 for women and .89 for men), and .81 for possessive jealousy (.80 for women and .84 for men). The McDonald's omega for the three types of jealousy were: .76 for reactive jealousy (.76 for women and .75 for men), .92 for anxious jealousy (.93 for women and .89 for men), and .83 for possessive jealousy (.82 for women and .85 for men). The average inter-item correlations (AIIC) were .45, .69 and .48 for reactive, anxious, and possessive jealousy, respectively. Apart from anxious jealousy, all AIIC were within the range proposed by Clark and Watson (1995; i.e., .15-.50), suggesting a reasonable item homogeneity (Piedmont, 2014). The average item-rest correlations (AIRC) were .57, .79 and .61 for reactive, anxious, and possessive jealousy, respectively, indicating that all items contribute to the score of the RASJS dimensions.

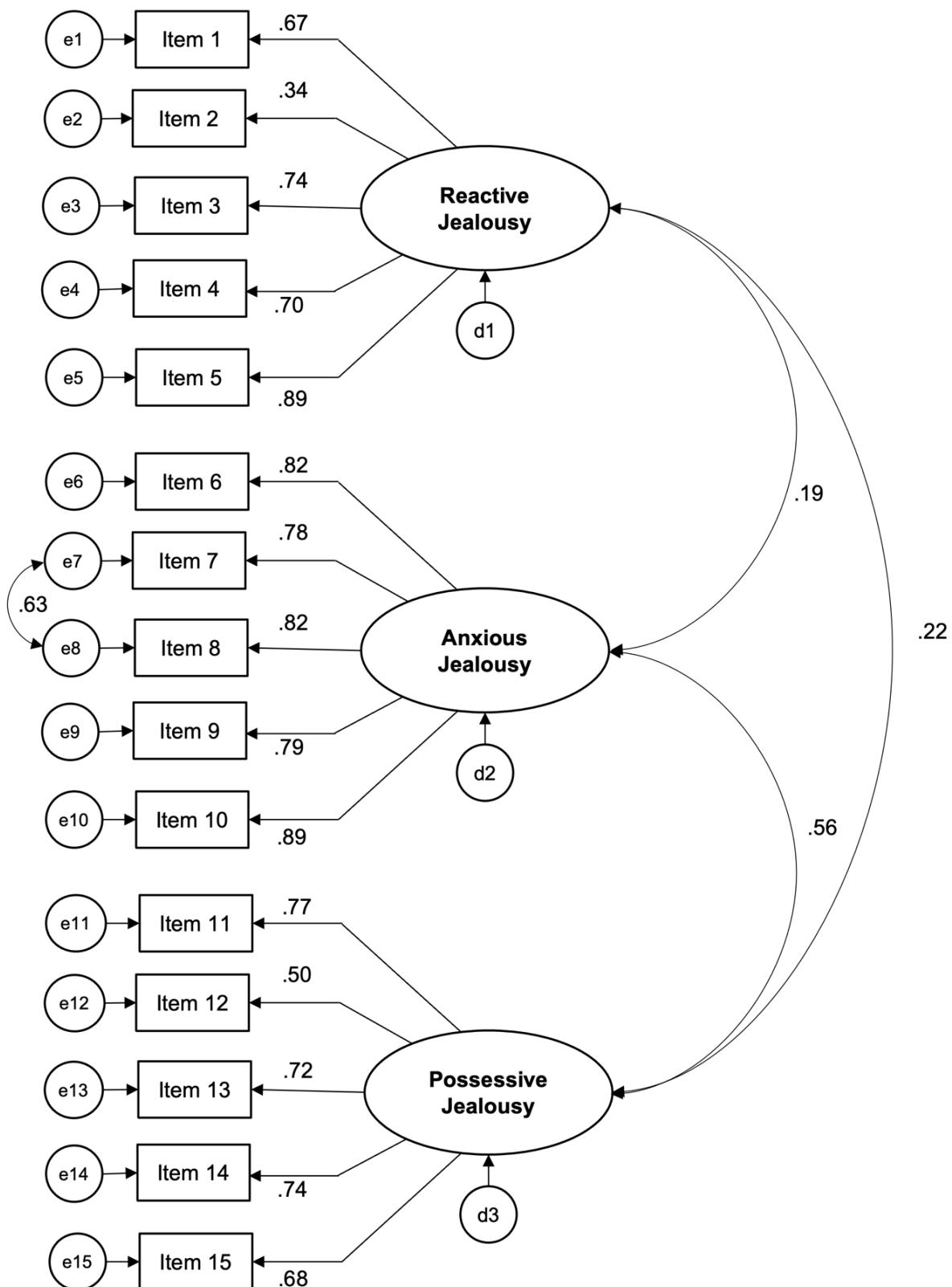


Figure 1. The three-factor CFA model of the RASJS

Correlations between RASJS subscales

The three factors of the scale were significantly associated with each other. In the total sample, the correlations between the different factors were positive and small to moderate, with a range between $r(456) = .22$ (between anxious jealousy and reactive jealousy) and $r(456) = .47$ (between anxious jealousy and possessive jealousy). The pattern of correlations was similar for men and women (see Table 3).

Evidence for convergent validity was generally supported by values slightly lower or above the threshold of .50 (AVE _{Reactive} = .41; AVE _{Anxious} = .70; AVE _{Possessive} = .50).

Table 3. Correlations between the three subscales of jealousy

	Reactive jealousy	Anxious jealousy	Possessive jealousy
Reactive jealousy	-	.22**	.29***
Anxious jealousy	.22***	-	.35***
Possessive jealousy	.26***	.52***	-

Note: The correlations between the three types of jealousy for women and men are respectively presented below and above the diagonal.

** $p < .01$; *** $p < .001$.

Criterion-related validity

The correlations between the three types of jealousy and the measures assessing romantic attachment orientations, the constructs of the investment model and sexual satisfaction are presented in Table 4. Reactive jealousy was significantly and positively associated with anxious attachment, investment, commitment, and sexual satisfaction and negatively associated with attachment-related avoidance and the quality of alternatives. Anxious jealousy was significantly and positively associated with anxious and avoidant attachment and negatively associated with satisfaction (with the relationship). Possessive jealousy was significantly and positively correlated with the anxious dimension of attachment, investment and satisfaction (with the relationship).

Table 4. Correlations between the three types of jealousy and the attachment dimensions, investment model dimensions and sexual satisfaction

	Reactive jealousy	Anxious jealousy	Possessive jealousy
ECR-SF			
Anxiety subscale	.15**	.49**	.34**
Avoidance subscale	-.09*	.14**	.06
IMS			
Quality of alternatives	-.21**	.04	-.01
Investment	.20**	.06	.14**
Satisfaction	.05	-.22**	.17**
Commitment	.22**	-.06	-.03
GMSS			
Sexual satisfaction	.12**	-.06	-.06

* $p < .05$; ** $p < .01$.

Known-groups validity: Differences in jealousy by sex and past infidelity experiences

The multivariate effect of sex was not significant, Wilks' $\Lambda = .99$, $F(3, 574) = 2.19$, $p = .088$. The multivariate effect of the respondent's own past history of infidelity was significant, Wilks' $\Lambda = .99$, $F(3, 560) = 2.86$, $p < .05$. Univariate tests indicated significant differences in reactive jealousy, with participants who did not report a past history of infidelity showing higher values of reactive jealousy than those who reported that experience. The multivariate effect of a past history of a partner's infidelity was significant, Wilks' $\Lambda = .99$, $F(3, 564) = 2.66$, $p < .05$. Participants who reported a past history of a partner's infidelity presented significantly higher anxious jealousy than those who did not report that experience (see Table 5).

Table 5. Comparison of the three types of jealousy by sex and past infidelity experiences

Variables	Reactive jealousy <i>M (SD)</i>	Anxious jealousy <i>M (SD)</i>	Possessive jealousy <i>M (SD)</i>
Sex			
Female	4.36 (0.62)	2.48 (1.11)	1.93 (0.93)
Male	4.23 (0.69)	2.31 (1.00)	1.85 (0.82)
	<i>F</i> (1, 576)	4.69*	3.28
	η_p^2	.008	.006
Own past history of infidelity			
Yes	4.21 (0.74)	2.51 (1.17)	1.96 (0.91)
No	4.35 (0.60)	2.40 (1.04)	1.89 (0.80)
	<i>F</i> (1, 562)	4.99*	1.29
	η_p^2	.009	.002
Past history of partner's infidelity			
Yes	4.29 (0.68)	2.55 (1.13)	1.89 (0.84)
No	4.33 (0.62)	2.36 (1.04)	1.92 (0.83)
	<i>F</i> (1, 566)	0.72	4.47*
	η_p^2	.001	.008
			.0002

* $p < .05$.

DISCUSSION

In this study, which examined the psychometric properties of the European Portuguese version of the RASJS, our results demonstrated that this scale is a reliable and valid measure of romantic jealousy. Consistent with the original version, the three-factor structure was clearly reproduced in the confirmatory analyses, and the subscales assessing reactive, anxious, and possessive jealousy were found to represent empirically distinct types of jealousy. The three subscales were significantly associated with each other; however, these correlations were low to moderate. This pattern of correlations was consistent with evidence from previous studies (e.g., Barelds & Barelds-Dijkstra, 2007) and revealed that although reactive, anxious and possessive jealousy are part of romantic jealousy, they are relatively independent dimensions. The correlations between the different factors were generally similar for men and women. The reliability for the three types of jealousy was quite similar to the original scale, and all Cronbach's alphas were above the .70 threshold.

The descriptive statistics of the RASJS items show the presence of floor and ceiling effects. Floor effects were observed in items related to anxious and possessive jealousy, while ceiling effects were more noticeable for items related to reactive jealousy, particularly items 3 (92.6%) and 5 (82%), where participants responded in the highest category ("extremely upset"). Floor and ceiling effects are population-dependent (Hyland, 2003). Therefore, in the context of intimate relationships, these results are not surprising, as these items ask how the subject would feel if their partner were to have sexual contact with someone else or kiss someone else on the mouth. With respect to content, these items are expected to elicit a much higher level of reactive jealousy. Despite the highly skewed distribution, these items are important for discriminating between individuals in terms of their degree of jealousy. In contrast, when a romantic relationship is positively evaluated (in our sample, the mean Satisfaction score [IMS] was 6.34, range: 0-8), concerns about the partner's behavior toward others (i.e., items related to anxious and possessive jealousy) may be less dominant, which justifies the floor effects.

In the present study, after correlating the errors of Item 7 (I am worried that my partner has a sexual relationship with someone else) and Item 8 (I am afraid my partner is sexually interested in someone else), which are both part of the anxious jealousy dimension, the model fit improved. Although the procedure of correlating errors may compromise the model's parsimony, allowing these correlations may have theoretical value. Indeed, since these two items share similar concerns (sexual interest and sexual relationships), it is reasonable to assume that individuals who report concerns about one aspect (e.g., sexual infidelity) may also express anxiety about the other.

The correlations between the types of jealousy assessed by the RASJS and the measures assessing romantic attachment, the constructs of the investment model and sexual satisfaction adequately supported the criterion-related validity of this measure. Our findings indicated a significant association between both

attachment orientations and the three different types of jealousy. Specifically, anxious attachment was positively associated with all types of jealousy, with a higher association between anxious attachment and anxious jealousy. Avoidant attachment was negatively associated with reactive jealousy and positively associated with anxious jealousy. This is consistent with the previously documented association between these attachment orientations and insecure attachment styles (i.e., higher scores in attachment-related anxiety and/or avoidance) and romantic jealousy (e.g., Buunk, 1997; Richter et al., 2022). Because jealousy often arises from a distressing and threatening relationship situation, it likely activates the attachment system to manage the feelings and behaviors that stem from relationship threats (Simpson & Rholes, 1994). This may be particularly important for individuals who are high in attachment-related anxiety and who worry and ruminate about being rejected or abandoned by their partners (Mikulincer & Shaver, 2012; Wei et al., 2007). Conversely, as also noted by Richter et al. (2022), individuals high in attachment-related avoidance may feel uncomfortable with closeness and emotional intimacy and invest less in the relationship, revealing lower levels of jealousy. In fact, an earlier study by Buunk (1997) concluded that among people with an insecure style, anxious-ambivalent individuals were consistently more jealous than avoidant individuals.

In this study, overall, each of the three types of jealousy were associated with the relationship dimensions proposed by the investment model scale (Rusbult et al., 1998) as well as with sexual satisfaction. Our findings suggest that individuals who have substantially invested in their relationship, who are highly committed to their romantic relationship, who perceive few appealing alternatives in relation to their partner, and who are sexually satisfied present higher levels of reactive jealousy. To the best of our knowledge, no previous studies have analyzed the association between the constructs of the investment model and the three types of jealousy. However, Barelds and Dijkstra (2006) suggested that reactive jealousy may serve a positive function in terms of sexual satisfaction, stemming from the desire to protect a valued relationship. Furthermore, individuals in more committed relationships who perceive unattractive relationship alternatives should react more jealously when their relationship is threatened because their stake in the current relationship is especially large (Rydell et al., 2004). Surprisingly, in our study, satisfaction with the relationship was not significantly associated with reactive jealousy, contrary to the results found by Barelds and Barelds-Dijkstra (2007). On the other hand, and in line with this same study, satisfaction with the relationship showed a negative association with anxious jealousy. This seems to suggest that increased satisfaction with the romantic relationship seems to decrease feelings of anxiety, suspicion and distrust about a partner's fidelity. However, Bevan (2008) found that emotional jealousy (which partly resembles reactive jealousy because of the strong emotional component) presented a negative association with satisfaction. In fact, this finding agrees with the previous literature: these three qualitatively different types of jealousy, to some extent, all include emotional, cognitive, and behavioral components and may serve different functions within the intimate relationship (Barelds & Barelds-Dijkstra, 2007; Barelds & Dijkstra, 2006).

Individuals with higher levels of possessive jealousy revealed a higher investment in the relationship, as well as higher satisfaction with it. A possible explanation, as previously suggested, is that individuals may use positive mate retention tactics to prevent their romantic partner from becoming unfaithful, such as enhancing their appearance and displaying resources, which may increase satisfaction with the relationship (Buss & Shackelford, 1997). However, these findings conflict with previous studies (Barelds & Barelds-Dijkstra, 2007; Barelds & Dijkstra, 2006), which have suggested that possessive jealousy is a relatively neutral phenomenon with regard to satisfaction with the relationship. Future research to clarify these associations with relationship dimensions is of utmost importance.

In the present study, no sex differences in the three types of jealousy were found despite the higher levels of reactive jealousy among women (in the univariate tests), which is congruent with the original validation study (Buunk, 1997) and other studies that used the same measure (Barelds & Barelds-Dijkstra, 2007; Swami et al., 2012). Concerning previous infidelity experiences, the results indicated that individuals who did not report their own past history of infidelity showed higher values of reactive jealousy than those who reported this history. We may hypothesize that individuals who never engage in infidelity behaviors themselves may be more upset when they discover that their partner is or has been emotionally and/or sexually unfaithful. On the other hand, individuals who reported a past history of a partner's infidelity presented higher anxious jealousy than those who did not report this history. Although no previous hypothesis has been made regarding these differences, one study conceptualized anxious jealousy as similar to the fear of partner infidelity (Kolb & Owen, 2014), because it is expressed through anxiety, suspicion, worry, mistrust and rumination about a partner engaging in infidelity. It seems reasonable to suggest that previous partner infidelity may be associated with higher levels of rumination and suspicion about the future possibility of the partner being involved with someone else.

This study is not without limitations. A convenience sampling method was used, which limits the

generalizability of the results. It is also noteworthy that our sample was collected between 2012 and 2014. Since then, social and interpersonal dynamics, advances in technology (e.g., the dominance of social media), and relationship norms have evolved. These changes likely impact how jealousy is experienced and expressed in relationships; as such, our results may not fully capture contemporary experiences of jealousy. Additionally, because the present study was part of a larger research project, participants were required to self-define as heterosexual. Hence, inferences drawn from our data must be interpreted within the context of this particular sample and the timing of the data collection. Although combining online and offline methods in research can offer a broader range of data and more diversity, it also introduces challenges related to bias, particularly concerning sensitive issues such as romantic relationships. For example, in the online method, participants self-select into the study, which means they may be more willing to share their personal experiences in relationships; while in the offline method, they might be more prone to social desirability bias. Moreover, because the RASJS exhibits varying degrees of measurement invariance across data collection methods, future studies with more balanced samples examining measurement invariance across these different methods would be valuable. The cross-sectional design of this study does not allow the examination of the instrument's temporal stability, which is an important outcome of reliability. Given the sensitive nature of many of the survey questions (e.g., history of infidelity), it is possible that some participants provided socially acceptable responses. However, we believe that the predominance of data collection through a web-based survey may have allowed us to achieve more reliable results. Because previous infidelity experiences were measured with only one question, future studies should examine the nature of infidelity (sexual vs. emotional) through more complete questions or appropriate measures of extradyadic behaviors, such as the Extradyadic Behavior Inventory (Luo et al., 2010; Martins et al., 2016). This may allow for a more complete understanding of our results.

The results of this study provide evidence supporting both the reliability and the validity of the RASJS and attest to its use in the assessment of romantic jealousy in the Portuguese population. The psychometric characteristics of the scale are satisfactory, with demonstrated construct and criterion-related validity and internal consistency across the three factors. Moreover, this study underlines the importance of distinguishing between different types of jealousy when studying romantic jealousy, because the three types of jealousy relate differently to distinct relationship dimensions and attachment orientations in close relationships. Additional strengths of this study include a reasonable sample size in current dating relationships and the direct application of a theoretically derived measure to a sample from the general population. These results also provide further empirical evidence in favor of a multidimensional model of jealousy and offer an initial psychometric foundation for future studies to examine the RASJS in larger samples with diverse relational characteristics (e.g., marriage/cohabitation), genders and sexual orientations.

The RASJS may be particularly important for practice because it represents a time-efficient way to collect information about jealousy in romantic relationships. In this context, this scale has the potential to be an important tool for guiding the assessment and treatment of individuals and couples with relationship problems, by helping them understand the emotional responses within their relationship, as well as promoting more adaptive forms of interpersonal emotional regulation, enhancing communication, and building commitment and mutual understanding. Educating individuals about different types of jealousy, what they consist of, and how they are associated with relationship outcomes seems to be one of the first steps in treating couples who struggle with jealousy issues in their relationship (Barelds & Barelds-Dijkstra, 2007). Although further empirical evidence is needed, this study underlines the importance of delineating the relative contribution of different relationship dimensions given that some are more important than others for romantic jealousy (e.g., satisfaction with the relationship in anxious jealousy). Finally, mental health professionals should consider that past infidelity experiences (one's own or one's partner's experiences) may also cause different types of jealousy, which can be specifically addressed in therapy with individuals or couples who are coping with the consequences of infidelity.

REFERENCES

Attridge, M. (2013). Jealousy and relationship closeness: Exploring the good (reactive) and bad (suspicious) sides of romantic jealousy. *SAGE Open*, 3(1), 1–16. <https://doi.org/10.1177/2158244013476054>

Babcock, J. C., Green, C. E., & Robie, C. (2004). Does batterers' treatment work? A meta-analytic review of domestic violence treatment. *Clinical Psychology Review*, 23(8), 1023–1053. <https://doi.org/10.1016/j.cpr.2002.07.001>

Banfield, S., & McCabe, M. P. (2001). Extra relationship involvement among women: Are they different from men? *Archives of Sexual Behavior*, 30(2), 119–142. <https://doi.org/10.1023/A:1002773100507>

Barelds, D., & Barelds-Dijkstra, P. (2007). Relations between different types of jealousy and self and partner perceptions of relationship quality. *Clinical Psychology & Psychotherapy*, 14, 176–188. <https://doi.org/10.1002/cpp>

Barelds, D. P. H., & Barelds-Dijkstra, P. (2007). Relations between different types of jealousy and self and partner perceptions of relationship quality. *Clinical Psychology and Psychotherapy*, 14(3), 176–188. <https://doi.org/10.1002/cpp.532>

Barelds, D. P. H., & Dijkstra, P. (2006). Reactive, anxious and possessive forms of jealousy and their relation to relationship quality among heterosexuals and homosexuals. *Journal of Homosexuality*, 51(3), 183–198. https://doi.org/10.1300/J082v51n03_09

Barelds, D. P. H., Dijkstra, P., Groothof, H. A. K., & Pastoor, C. D. (2017). The Dark Triad and three types of jealousy: Its' relations among heterosexuals and homosexuals involved in a romantic relationship. *Personality and Individual Differences*, 116, 6–10. <https://doi.org/10.1016/j.paid.2017.04.017>

Bevan, J. L. (2008). Experiencing and communicating romantic jealousy: Questioning the Investment Model. *Southern Communication Journal*, 73(1), 42–67. <https://doi.org/10.1080/10417940701815626>

Buss, D. M. (2000). *The dangerous passion: Why jealousy is as essential as love and sex*. Free Press.

Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology, and psychology. *Psychological Science*, 3(4), 251–255. <https://doi.org/10.1111/j.1467-9280.1992.tb00038.x>

Buss, D. M., Shackelford, T. K., Kirkpatrick, L. A., Choe, J. C., Lim, H. K., Hasegawa, M., Hasegawa, T., & Bennett, K. (1999). Jealousy and the nature of beliefs about infidelity: Tests of competing hypotheses about sex differences in the United States, Korea, and Japan. *Personal Relationships*, 6(1), 125–150. <https://doi.org/10.1111/j.1475-6811.1999.tb00215.x>

Buunk, B. P. (1997). Personality, birth order and attachment as related to various types of jealousy. *Personality and Individual Differences*, 23(6), 997–999. [https://doi.org/10.1016/S0191-8869\(97\)00136-0](https://doi.org/10.1016/S0191-8869(97)00136-0)

Buunk, B.P., & Dijkstra, P. (2001). Extradadic relationships and jealousy. In C. Hendrick & S.S. Hendrick (Eds), *Close relationships: A sourcebook* (pp. 316-329). Sage.

Buunk, B. P., & Dijkstra, P. (2004). Gender differences in rival characteristics that evoke jealousy in response to emotional versus sexual infidelity. *Personal Relationships*, 11(4), 395–408. <https://doi.org/10.1111/j.1475-6811.2004.00089.x>

Buunk, A. P., & Dijkstra, P. (2006). Temptations and threat: Extradadic relations and jealousy. In A. L. Vangelisti & D. Perlman (Eds.), *The Cambridge handbook of personal relationships* (pp. 533–555). Cambridge University Press. <https://doi.org/10.1017/CBO9780511606632.030>

Buunk, A. P., & Fernandez, A. M. (2020). Don't cheat like I did: Possessive jealousy and infidelity in close relationships. *Interpersona: An International Journal on Personal Relationships*, 14(2), 211–216. <https://doi.org/10.5964/ijpr.v14i2.4265>

Byrne, B. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). Routledge

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 14(3), 464–504. <https://doi.org/10.1080/10705510701301834>

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309–319. <https://doi.org/10.1037/1040-3590.7.3.309>

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155–159. <https://doi.org/10.1037/0033-295X.112.1.155>

DeSteno, D. A., & Salovey, P. (1996). Evolutionary origins of sex differences in jealousy? Questioning the "fitness" of the model. *Psychological Science*, 7(6), 367–372. <https://doi.org/10.1111/j.1467-9280.1996.tb00391.x>

Dijkstra, P., & Buunk, B. P. (2002). Sex differences in the jealousy-evoking effect of rival characteristics. *European Journal of Social Psychology*, 32, 829–852. <https://doi.org/10.1002/ejsp.125>

Diotaiauti, P., Valente, G., Mancone, S., Girelli, L., Cavicchioli, E., & Chirico, A. (2022). Validation study of the Italian brief version of the Multidimensional Jealousy Scale: Psychometric properties, measurement invariance across gender, and convergent validity. *Frontiers in Psychology*, 13, 1013584. <https://doi.org/10.3389/fpsyg.2022.1013584>

Dunn, T. J., Baguley, T., & Brunsden, V. (2013). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology*, 105(3), 399–412. <https://doi.org/10.1111/bjop.12046>

Elphinston, R. A., Feeney, J. A., & Noller, P. (2011). Measuring romantic jealousy: Validation of the multidimensional jealousy scale in Australian samples. *Australian Journal of Psychology*, 63(4), 243-251. <https://doi.org/10.1111/j.1742-9536.2011.00026.x>

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.2307/3151312>

Hyland, M. E. (2003). A brief guide to the selection of quality of life instrument. *Health Qual Life Outcomes*, 1, 24. <https://doi.org/10.1186/1477-7525-1-24>

Kolb, S., & Owen, J. (2014). Fear of extradyadic involvement: Contextual, relationship, intrapersonal, and partner factors. *Journal of Couple and Relationship Therapy*, 13(3), 240-261. <https://doi.org/10.1080/15332691.2014.921264>

Lawrence, K., & Byers, E. (1998). Interpersonal exchange model of Sexual Satisfaction Questionnaire. In C. M. Davis, W. L. Yarber, R. Bauserman, G. Schreer, & S. L. Davis (Eds.), *Sexuality-related measures: A compendium* (2nd ed., pp. 514-519). Sage.

Luo, S., Cartun, M. A., & Snider, A. G. (2010). Assessing extradyadic behavior: A review, a new measure, and two new models. *Personality and Individual Differences*, 49(3), 155-163. <https://doi.org/10.1016/j.paid.2010.03.033>

Martínez-León, N. C., Peña, J. J., Salazar, H., García, A., & Sierra, J. C. (2017). A systematic review of romantic jealousy in relationships. *Terapia Psicológica*, 35(2), 203-212. <https://doi.org/10.4067/s0718-48082017000200203>

Martins, A., Pereira, M., Andrade, R., Dattilio, F. M., Narciso, I., & Canavarro, M. C. (2016). Infidelity in dating relationships: Gender-specific correlates of face-to-face and online extradyadic involvement. *Archives of Sexual Behavior*, 45(1), 193-205. <https://doi.org/10.1007/s10508-015-0576-3>

Mathes, E. W., & Severa, N. (1981). Jealousy, romantic love, and liking: Theoretical considerations and preliminary scale development. *Psychological Reports*, 49(1), 23-31. <https://doi.org/10.2466/pr0.1981.49.1.23>

Mikulincer, M., & Shaver, P. R. (2012). Adult attachment orientations and relationship processes. *Journal of Family Theory & Review*, 4(4), 259-274. <https://doi.org/10.1111/j.1756-2589.2012.00142.x>

Parrott, W. G. (1991). The emotional experiences of envy and jealousy. In P. Salovey (Ed.), *The psychology of jealousy and envy* (pp. 3-30). Guilford Press.

Pfeiffer, S. M., & Wong, P. T. P. (1989). Multidimensional jealousy. *Journal of Social and Personal Relationships*, 6(2), 181-196. <https://doi.org/10.1177/026540758900600203>

Piedmont, R. L. (2014). Inter-item correlations. In A. C. Michalos (Ed.), *Encyclopedia of quality of life and well-being research* (pp. 3303-3304). Springer. https://doi.org/10.1007/978-94-007-0753-5_1493

Richter, M., Schlegel, K., Thomas, P., & Troche, S. J. (2022). Adult attachment and personality as predictors of jealousy in romantic relationships. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.861481>

Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, 5, 357-391. <https://doi.org/10.1111/j.1475-6811.1998.tb00177.x>

Rydell, R. J., & Bringle, R. G. (2007). Differentiating reactive and suspicious jealousy. *Social Behavior and Personality: An International Journal*, 35(8), 1099-1114. <https://doi.org/10.2224/sbp.2007.35.8.1099>

Rydell, R. J., McConnell, A. R., & Bringle, R. G. (2004). Jealousy and commitment: Perceived threat and the effect of relationship alternatives. *Personal Relationships*, 11(4), 451-468. <https://doi.org/10.1111/j.1475-6811.2004.00092.x>

Simpson, J. A., & Rholes, W. S. (1994). Stress and secure base relationships in adulthood. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships* (Vol. 5, pp. 181-204). Kingsley.

Southard, A., & Abel, M. C. (2010). Sex differences in romantic jealousy: Evaluating past and present relationship experience. *American Journal of Psychological Research*, 6(1), 41-49.

Swami, V., Inamdar, S., Stieger, S., Nader, I. W., Pietschnig, J., Tran, U. S., & Voracek, M. (2012). A dark side of positive illusions? Associations between the love-is-blind bias and the experience of jealousy. *Personality and Individual Differences*, 53(6), 796-800. <https://doi.org/10.1016/j.paid.2012.06.004>

Tandler, N., & Petersen, L. E. (2020). Are self-compassionate partners less jealous? Exploring the mediation effects of anger rumination and willingness to forgive on the association between self-compassion and romantic jealousy. *Current Psychology*, 39, 750-760. <https://doi.org/10.1007/s12144-018-9797-7>

Terwee, C. B., Bot, S. D., de Boer, M. R., van der Windt, D. A., Knol, D. L., Dekker, J., & de Vet, H. C. (2007). Quality criteria were proposed for measurement properties of health status questionnaires. *Journal of Clinical Epidemiology*, 60(1), 34–42. <https://doi.org/10.1016/j.jclinepi.2006.03.012>

Valentova, J. V., Fernandez, A. M., Pereira, M., & Varella, M. A. (2022). Jealousy is influenced by sex of the individual, their partner, and their rival. *Archives of Sexual Behavior*, 51(6), 2867-2877. <https://doi.org/10.1007/s10508-022-02341-4>

Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationship scale (ECR)-short form: Reliability, validity, and factor structure. *Journal of Personality Assessment*, 88(2), 187–204. <https://doi.org/10.1080/00223890701268041>

West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with non-normal variables: Problems and remedies. In R. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56–75). Sage.

White, G. L. (1981). A model of romantic jealousy. *Motivation and Emotion*, 5, 295–310. <https://doi.org/10.1007/BF00992549>

White, G. L. & Mullen, P. E. (1989). *Jealousy: Theory, research, and clinical strategies*. Guilford.

CRDiT AUTHORSHIP CONTRIBUTION STATEMENT

Alexandra Martins: Conceptualization; Data Curation; Formal analysis; Investigation; Methodology; Writing - Original Draft; **Isabel Narciso:** Conceptualization; Supervision; Writing - Review & Editing. **Maria Cristina Canavarro:** Conceptualization; Supervision; Writing - Review & Editing; **Marco Pereira:** Conceptualization; Formal analysis; Investigation; Methodology; Project administration; Supervision; Writing - Review & Editing.

ACKNOWLEDGMENTS

This work was supported by Grants of the Portuguese Foundation for Science and Technology, FCT [SFRH/BD/100117/2014, SFRH/BPD/44435/2008].

Historial do artigo

Recebido	06/05/2024
Aceite	26/03/2025
Publicado online	-
Publicado	31/12/2025

Wisdom and divergent problem solving as resources for eudaimonic psychological well-being in old age

Manuela Zambianchi  ¹

¹ University Institute ISIA Faenza, Italy

Abstract: Theoretical perspectives on positive ageing highlight the centrality of personal resources for reaching and maintaining a high level of overall functioning in this stage of life. Personal resources such as wisdom, creativity and eudaimonic psychological well-being can give a substantial contribution to this desirable condition. The study investigated the relationships between wisdom, eudaimonic well-being and perceived efficacy on divergent problem solving in old age. It also explored the presence of differences for structural variables gender and school education on these factors. 105 Italian participants filled in the Psychological Well-being Questionnaire (PWB), the Wise Thinking and Acting Questionnaire (WITHAQ) and the Perceived Efficacy Questionnaire on Divergent Problem solving (APSP). Positive associations emerged between wisdom as pragmatic knowledge and divergent problem-solving, between wisdom as dialectical post-formal thinking and divergent problem solving. Positive associations emerged between wisdom as pragmatic knowledge and PWB, wisdom as dialectical post-formal thinking and PWB. A Hierarchical Regression Model highlighted divergent problem solving as the most powerful contributor to eudaimonic well-being (PWB), together with wisdom as pragmatic competence. Not significant statistical values for grouping variables gender and school education emerged.

Keywords: Wisdom; Divergent problem-solving; Eudaimonic well-being; Positive ageing.

Eudaimonic psychological well-being as a feature of positive ageing

The issue of positive ageing constitutes nowadays an emergent area of inquiry due to the increasing in ageing population across the world (WHO, 2025). Rowe & Khan (2015) elaborated a systemic model of successful ageing where high levels of physical resources, high level of cognitive and personal functioning converge in the active participation to the society, that is the “core” of this model. Kahana and colleagues (2014) in their “proactive complex model of successful ageing” identified several resources enabling the old person to reach a set of positive outcomes. These positive outcomes are defined as the presence of positive mood states, the presence of meaningful experiences, the maintenance of valued activities and social relationships. These models and definitions contain several common denominators, albeit expressed in different ways: the growth as a person, the presence of meaningful experiences, and the contribution to society.

These definitions and theoretical perspectives are included in the recent definition of healthy ageing proposed by World Health Organization (WHO, 2022). It elaborated a definition of healthy ageing defined as the process of developing and maintaining the functional ability that enables well-being in older age. Functional ability is having the capabilities to enable people to be and do what they value. It refers to the following ability: to meet their basic needs, to learn, grow and make decisions, to be mobile, to build and maintain relationships and to contribute to society.

The well-being perspective that can encounter the ability to grow as a person and give a contribution to society can be identified in the Ryff Model of Eudaimonia (1989; 2014; 2023).

Ryff defined this perspective as rooted into the Aristotle philosophical thought, and in his concept of “eu-daimon”, that is the “true-self” of a person, his/her talents, abilities and realisation in favour of the society Ryff (1989; 2014; 2023). Her conception of Eudaimonic well-being comprises six dimensions: 1) Autonomy: being able to resist to social pressures; evaluate self by personal standards; 2) Environmental Mastery: having a sense of competence in managing the environment; being able to create or choose contexts suitable to personal needs and values; 3) Positive relations with others: having warm, trusting relations; being capable of empathy; 4) Purpose in Life: having goals in life; feeling that there is meaning to present and past life; 5) Self-acceptance: acknowledging and accepting multiple aspects of self, including good and bad qualities; 6) Personal Growth: having a feeling of continued development; having a sense of realising his or her potentials. Longitudinal studies about Eudaimonic well-being evidenced

¹ Correspondence address: Manuela Zambianchi, E-mail: zambianchi_manuela@isiafaenza.it

the decline of Personal Growth and Purpose in Life as people become older (Springer et al., 2011), while dimensions such as Environmental Mastery and Autonomy show an inverse tendency, growing as people become older (Ryff & Singer, 2008; Schilling, 2022).

Eudaimonic well-being shows interesting and positive relations with biological markers in old age, such as lower levels of daily salivary cortisol, lower proinflammatory cytokines, lower cardiovascular risk and longer-duration REM sleep compared to those with lower well-being (Ryff, 2014). Purpose in Life, that is considered a “core dimension” of eudaimonia, is linked with patterns of gene expression known as the conserved transcriptional response to adversity (CTRA). Analyses from the MIDUS study (Hill & Turiano, 2014) found that those with high Purpose in Life lived longer over a 14-year period. Considering the amount of research on eudaimonic well-being and its role in promoting positive functioning across life-span, it is essential to identify the factors that support its enhancement or promotion in old age. Alfonso-Benlliure et al., (2021) explored the relationships between two facets of well-being, namely the hedonic well-being and the eudaimonic well-being and divergent thinking. They hypothesized a connection between the ability to think in divergent manner, a component of creativity, and the dimensions of well-being in old age, also evidencing a scarcity of studies on this topic. They found a significant, positive connection between divergent thinking and eudaimonic well-being. For this reason, we can hypothesise that perceived efficacy on divergent problem solving gives a positive contribution to this type of well-being since it is conceptualised as the striving to realise personal potential (Ryff, 2023).

Creativity in old age and its role for positive ageing and psychological well-being. The divergent problem solving as a relevant resource at this stage of life

Creativity represents an issue that has deepened as an object of academic discussion since the last century. It has been defined by Guilford (1950) in terms of two main criteria: originality, or novelty, and appropriateness, or adaptiveness. Creativity has also been defined as a complex system of thought and act that include such cognitive and personality characteristics as problem sensitivity, flexibility, the ability to analyse, synthesise, evaluate and reorganise information, engage in divergent thinking or deal with complexity (Gabora, 2013). So far, some studies (Antonietti et al., 2013; Colombo et al., 2018) have proposed that creativity can be defined as being composed of three mental operations: widening (the tendency to keep an open mind and be able to deal with a high number of elements); connecting (the capacity to establish relationships among different elements and to combine them in unusual ways); reorganising (being able to change perspective and invert relationships among elements).

Divergent thinking, one of the processes that are part of creativity, concerns the ability to generate ideas, solutions, products that are unexpected, unusual and useful and appropriate to the context (Colautti et al., 2023; Runco, 2004). It is considered a key factor of creativity, involving an open-ended mental process oriented to find many new, appropriate and different answers to open problems (Guilford, 1967). It involves associative and executive processes, such as broad retrieval ability and fluid intelligence (Beaty et al., 2014) and is considered an indicator of creative potential (Runco & Acar, 2012). Divergent thinking possesses different components: fluency (generation of different responses to fulfil specific requirements); flexibility (generation of responses belonging to different categories); originality (generation of infrequent responses); elaboration (generation of details along with basic ideas). Being able to find new solutions to everyday problems can be seen as a relevant resource at every stage of life, including old ones.

The scientific community believes that age affects the level of divergent thinking (Alpaugh & Birren, 1977; Ruth & Birren, 1985; Palmiero, 2015). However, a study by Palmiero et al., (2017) supports the idea that divergent thinking can be preserved in older people and suggests appropriate interventions for improving it.

The majority of studies have taken into consideration the objective evaluation of divergent thinking, through experimental tasks and tests. Perhaps, another measure can be useful at completion of the studies on divergent thinking in old age: the perceived efficacy in divergent problem solving. As Bandura (1997) and Caprara (2001) highlighted indeed, perceived self-efficacy can be considered a core personal construct for the comprehension of human behaviour and for positive functioning. It designates an individual's belief in his or her capacity to execute behaviours necessary to produce specific performance attainments (Bandura, 1997). Zambianchi (2019), in a study on young people, confirmed the associations between eudaimonic well-being in the conception of Ryff and perceived efficacy on divergent problem solving, both as global score and for its subcomponents, with the exception of Positive Relations with Others. To date, few studies (Galassi et al., 2022), have explored the level of creativity and the links between creative thinking and psychological functioning in older people. Existing studies highlight show, at the level of cognitive processes involved in divergent thinking, an important role is played in the elderly by the cognitive reserve, which represents the set of resources accumulated over the course of life

through schooling in developmental age, the level of complexity required by the work performed, participation in stimulating recreational activities such as visiting museums, cultural events, and represents a protective factor against the declines inherent to ageing (Colombo et al., 2018; Tymoszuk et al., 2020).

The creativity expressed in the divergent problem solving, understood as the ability to solve problems inherent in everyday life, can be relevant for eudaimonic well-being as it promotes and encourages the search for novelty, for creative, innovative solutions to possible problems, also linked to this specific life phase (such as, for example, looking for new activities, solutions to present or future conditions of fragility, life plans after the working phase or looking for volunteering or new activities of paid work).

The link that has been highlighted between divergent problem solving and crystallized intelligence could lead to reflections on how these connect to other forms of thought, including wisdom, which has been identified for centuries as a characteristic of old age and about which little is still known about its links with the creative processes of human thought. It is in fact conceivable, considering emerging studies (Candeias et al., 2021) that creativity might be linked with crystallized intelligence, that wisdom, due to its roots in experience and knowledge developed over the course of life, may have connections with creativity, yet to be explored.

Wisdom and positive ageing

Wisdom, in psychological research, constitutes a growing area of studies, from different angles and perspectives. One of the most common distinction in international literature is between wisdom as personality construct (personal wisdom, including tendencies in cognition, motivation, emotion, and behaviour, personality qualities and characteristics, (Ardelt, 2004a, 2004b; Ardel et al., 2019; Webster, 2019) and general wisdom defined in terms of the knowledge, insight and judgement a person has about life in general, conceptualised mostly in cognitive terms (Dong et al., 2023).

One of the first and important general cognitive conceptualizations of wisdom pertains to the "Berlin group" (Baltes & Smith, 2008; Baltes & Staudiger, 2000), who defined wisdom as expertise in the fundamental pragmatics of life. This group gave life to the well-known "Berlin wisdom paradigm", that defined wisdom on the basis of five criteria: rich factual knowledge (declarative knowledge about topics such as human nature, interpersonal relationships); rich procedural knowledge (how to give advice and handle life decisions); life-span contextualism (knowledge of the many contexts of life); value relativism (tolerance for different values held by other people and societies); recognition and management of uncertainty (dealing with the uncertainty that arises from human limits).

Another perspective, that integrates the pragmatic competence highlighted by the Berlin researchers with intellectual development pertains to the Post-piagetian school (Pasqual-Leone, 1987; Labouvie-vief, 1990; 2015). This approach takes into consideration, for the development of wisdom, the mature intelligence, that corresponds to the overcoming of the Piagetian stage of formal operations to reach the post formal dialectical thinking. For the post-Piagetian school indeed the stage of post formal thinking represents the ability, reached in advanced age, to integrate in a complex and innovative view, information, and dilemmatic horns (the necessity to choose between two undesirable options or solutions) about ethical questions (Zambianchi, 2020). The post-Piagetian cognitive theoretical perspective was adopted by Moraitou and Efklides (2012), which define wisdom as a specific form of thought characterised by three interconnected dimensions: the pragmatics of life, that is close to the definition of wisdom elaborated by Baltes and colleagues (2000; 2008); the post-formal dialectical thinking (the ability to deal with complex questions, often with ethical or bioethical quality and to find innovative integrated solutions that goes beyond choosing between two dilemmatic horns) and the management of future uncertainty (that corresponds to the deep awareness of uncertainty about future together with the awareness of human finitude). Kallio (2011; 2015; 2020) sustains that the so called "integrative thinking" constitutes the key of the adult reasoning, that is based not only on the ability of considering simultaneously the antinomic solutions of a dilemma, but instead of integrating them into a new, different and more complex interpretation of a certain issue. In their new holistic model of wisdom, Kallio & Tynjälä (2025) support the need to approach wisdom from multiple disciplines, including the ethical-moral perspective and research. Moral dilemmas, bioethical dilemmas often request to choose between two opposite solutions; wisdom can help approaching these dilemmas from an integrative perspective, escaping the forced choice, visualizing innovative solutions to complex issues.

Wisdom has been approached also from another perspective of study and conceptualization, the wisdom performance, related to concrete wise actions, eg. to the ability to give wise advice and take the right decisions. From this perspective, a model of wisdom defines it as a morally grounded reasoning and

problem-solving in situational domains that have the potential to affect other people (Aldwin, 2009; Grossmann et.al., 2020; Jeste et al., 2010).

Wisdom has been, through centuries, associated with age (Dong et al., 2023). But, as Ardelt & Edwards (2016) claim, ageing does not necessarily lead to wisdom; wisdom represents a possible outcome of age, but there isn't a linear, deterministic path to it, with growing older.

An area of study on wisdom tries to investigate the association of wisdom with the perceived well-being of people. This research has shown that wisdom was conducive to well-being including life satisfaction, mastery, positive affect, cheerfulness, and health (Ardelt 2003; Ardelt, 2024; Ardelt & Edwards 2016; Etezadi & Pushkar 2013; Hultsch et al. 2002). Wisdom seems to reduce depression, fear, and negative affect (Ardelt 2003; Hultsch et al. 2002).

Dong et al., (2023), in their review on wisdom, took into consideration two different conceptualizations of well-being: the Hedonic well-being (Deci & Ryan, 2008), and the Eudaimonic well-being (Ryff & Singer, 2008). They found a large positive correlation between wisdom and eudaimonic well-being, especially for the growth aspects of eudaimonic well-being (the components of Personal Growth and Purpose in life).

Law & Staudiger (2016), connecting the issue of wisdom with the conceptions of well-being, understand eudaimonia as the kind of well-being that can emerge when practising wisdom (as phronesis) to solve existential conflict and dilemmas that occur in everyday life. Referring to the conceptualization of eudaimonic well-being elaborated by Ryff & Singer (2008), Staudiger & Gluck (2011) maintained that the essence of eudaimonia is balancing individual goals with a concern for greater social and common good and especially for the good of others. For them, this vision is closely related to eudaimonia.

Crystallized intelligence, in the model developed by Baltes & Staudiger (2000), is linked, and it constitutes the prerequisite, to wisdom as expert competence in life (the pragmatics of life), as the capacity for ethical-moral judgement and expert navigation in complex, ill structured situations. In fact, the research results highlight a significant relationship between cognitive reserve and crystallized intelligence, being considered close and intrinsically interwoven. Staudiger & Baltes (1996) furthermore hypothesised wisdom as the ability to identify constructive solutions in the conditions of ill-structured problems, i.e. where it is necessary to reorganise the elements of knowledge. So, wisdom could be implied in the divergent problem-solving. Research using the Berlin Wisdom Interview has found an advanced integration of cognitive and personality characteristics at their interface that play a fundamental role for wisdom performance (Dong et al., 2022). Traits and processes such as openness to experience, social intelligence, thinking style and creativity as well as life experiences contribute uniquely to the overall variance in Wisdom Related performance (Pasupathi & Staudiger, 2001). In this case, however, the intervention of another component of wisdom, foreseen by the post-Piagetian school (Moraitou & Efklides, 2012), the post-formal dialectical thinking ability, can be hypothesised. Colautti et al. (2023) have in fact highlighted a significant and positive relationship between divergent problem solving, crystallized intelligence and cognitive reserve. The cognitive reserve dimensions, as already hypothesised by Baltes & Lindenberger, (1988) would constitute some fundamental bases for the expression of wisdom, understood as the ability to navigate expertly in the dilemmas of life, in turn linked to the presence of a solid knowledge stratified over the course of experience, the latter clearly implicated in crystallized intelligence. So, we could hypothesise that wisdom, as dialectical post-formal thinking, wisdom as pragmatic knowledge show significant associations with divergent problem-solving, a type of creative processes that is thought to be at the basis of creative performance and, for its features, useful in solving daily life problems. As highlighted above, both wisdom and creativity have been explored in its relationships with psychological well-being. However, to this date, no studies have explored the interconnected impact of both wisdom and creativity on eudaimonic well-being, namely the interaction between these two dimensions and the interaction while affecting well-being.

Aims and hypotheses

The study had the following aims and tested the following hypotheses:

- Evaluate the level of psychological eudaimonic well-being, the level of perceived efficacy on divergent problem-solving and the level of wisdom in a sample of Italian old people.
- Evaluate the correlations between psychological eudaimonic well-being, wisdom and perceived efficacy on divergent problem-solving. Based on international literature (e.g., Alfonso-Benlliure et al., 2021), the presence of positive correlations between the dimensions of PWB and the dimensions of wisdom are expected. (H1)
- The presence of positive correlations between PWB and perceived efficacy on divergent problem-solving has been hypothesized. (H2)
- The presence of positive correlations between wisdom as post-formal dialectical thinking and perceived efficacy on divergent problem solving are expected. (H3)

- Evaluate the relevance of grouping variables gender and school education for PWB, wisdom and divergent problem-solving. Based on existing literature (Ryff & Singer, 2008; Boylan et al., 2025) it was hypothesised that PWB increases as school education increases. (H4)
- Age is expected to influence PWB and divergent problem-solving. It is expected that as age increases PWB declines in some components such as Purpose in Life and Personal Growth. It is expected that as age increases, divergent problem-solving decreases. (H5)
- Evaluate the contribution offered by wisdom, divergent problem solving for Eudaimonic well-being (as global score and as specific sub-components), after controlling for age, gender and school education as structural variables. As highlighted in the literature (Gluck et al., 2022), it was expected that wisdom would make a significant contribution to eudaimonic well-being. (H6).
- Divergent problem solving, for the conceptualisation of eudaimonic well-being (Ryff, 2023) is expected to give a positive contribution to it (H7).

METHOD

Participants and procedure

The present study comprised 105 Italian subjects ($M_{age} = 70.58$, $SD = 4.67$; 19 males and 85 females; 4 with Elementary School; 16 with Middle School Diploma; 56 with High School Diploma and 28 with Degree) took part in the study. The data collection plan contemplated a mixed method, using both online platform and paper and pencil questionnaires. Participants were recruited through Cultural associations such as Universities of the Third age, Senior centres, personal contacts. The online questionnaires were created through Google Moduli online Platform. It created a specific online questionnaire and a specific link generated, by clicking on which people could open the application. At the beginning of it, a brief explanation of the main objectives of the study and the complete anonymity of it was inserted. No sensitive data were collected, but only demographic data. The participants gave their informed consent to the treatment of data for scientific purposes. At the end of the online questionnaire the participants could chose yes or not to the following statement: "I give my consent for the treatment of data for scientific research and publication". For the paper and pencil questionnaire, this sentence was included in the last part of the questionnaire, after the demographic data. No personal data (such as city of birth, previous work, medical problems) were collected so that it was not possible to identify the authors of the questionnaires.

Instruments

For this research the following self-report questionnaires were chosen:

Psychological Well-being Questionnaire (Ryff & Keyes, 1995; Italian validation, Ruini et al., 2003). This self-report instrument contains 60 items that evaluated six dimensions: Autonomy (the capacity to evaluate oneself by personal standards and acquire a strong sense of independence, e.g., "I have confidence in my opinions, even if they are contrary to the general consensus") $\alpha = .65$; Environmental Mastery (the individual's ability to choose or create environments suitable to her/his qualities, e.g., "In general, I feel I am in charge of my situation in which I live"), $\alpha = .60$; Positive Relations with Others (the ability to construct warm, trusting interpersonal relationships, e.g., "People would describe me as a giving person, willing to share my time with others"), $\alpha = .81$; Purpose in Life (have a clear comprehension of life purpose, a sense of directedness and intentionality, e.g., "Some people wander aimlessly through life, but I am not one of them"), $\alpha = .82$; Personal Growth (the individual's perception of being a growing and expanding person, e.g., "I think it is important to have new experiences that challenge how you think about yourself and the world"), $\alpha = .81$; Self-Acceptance (the possession of a positive attitude toward the self and the acceptance of good and bad qualities, e.g., I like most aspects of my personality"), $\alpha = .79$. The α coefficient for the overall Psychological Well-being scale is .83. The score may range from 1 to 6 (1= is not my case; 6 = is exactly so). All the Cronbach Alpha (α) are referred to the present study.

The Wise Thinking and Acting Questionnaire (WITHAQ; Moraitou & Efklides, 2012; Italian translation, Zambianchi, 2022). It contains 13 item and is composed by three dimensions: Wisdom as pragmatic competence (4 items e.g., of item: "Through the experience and the knowledge I have obtained so far, I have built well-formulated views and attitudes as far as important moral matters of modern life are concerned", $\alpha = .55$); Wisdom as integrated post-formal dialectical thinking (6 items; e.g., "When I discuss with other people or with myself about life issues, I can usually distinguish different arguments, e.g., which are the strongest in terms of reason or the strongest from a more subjective, experiential point of view"; $\alpha = .74$); Wisdom as awareness of future uncertainty (e.g., "I often think about death. This makes

me get cold feet and on the other hand, it teaches me not to pay much attention to transient glory, wealth and the small daily problems", $\alpha = .75$). The score was computed on a 5-point Likert scale (1 = completely untrue; 5 = completely true). All the Cronbach Alpha (α) are referred to the present study.

Questionnaire on Perceived Efficacy in Creative Divergent Problem Solving (APSP; Italian validation, Pastorelli et al., 2001). This questionnaire evaluates the ability to generate new and creative solutions to solve problems or to generate new ideas and consists of 14 items (e.g., "I can identify alternative, positive solutions to deal with problems"; "I am a volcano of ideas"; I am able to invent new procedures instead of simply following those established by others") with a score ranging from 1 (not well at all) to 4 (very well). The Cronbach's α of the overall scale is .84. All the Cronbach Alpha (α) are referred to the present study.

Statistical analyses

The statistical analyses were run in four steps with Statistica Package (Statsoft, 2005). Firstly, means, standard deviations, skewness and kurtosis of all variables have been calculated. After, Pearson's correlation matrices were calculated, in order to evaluate the correlations among the variables. Then, MANOVAs Models evaluated the influence of grouping variables gender and school education on the study variables wisdom Eudaimonic well-being and perceived efficacy on divergent problem-solving. Only three levels of school education (Middle school diploma; High school Diploma; Degree) were considered for into the models, due to the low number of participants with the Elementary Schools (n.4). Age was evaluated as a single continuous variable for PWB, wisdom and perceived efficacy on divergent problem-solving through Linear Regression Models. Finally, a set of Hierarchical Regression Models evaluated the contribution offered by wisdom and creative divergent problem solving on PWB as global score and on each specific its sub-components, after controlling for structural variables age (as continuous variable), gender and school education. The Hierarchical Regression Analysis was conducted in three sequential steps. First, structural variables -age, gender, and level of education - were entered. In the second step, the three dimensions of wisdom were included. Finally, in the third step, divergent problem-solving was added to the model.

RESULTS

Description of the sample for the study factors

The higher score for the wisdom questionnaire is reached in the dimension of pragmatic competence, while the lower pertains to the ability to manage future uncertainty. Divergent problem solving possesses a medium-high score. The overall level of Psychological Eudaimonic well-being (PWB) is high, and it appears to be high also for its subcomponents. Personal Growth is the dimension with the highest score, followed by Purpose in life, while the lowest score pertains to the dimension Autonomy (see Table 1).

Table 1. Descriptives of the sample

Variable	M	SD	Min	Max	Skewness	Kurtosis	Shapiro W.
Wisdom pragmatic	3.56	.46	2.25	4.50	-.09	.32	.95
Wisdom dialectical post formal	3.51	.53	2.00	4.66	-.18	-.14	.98
Wisdom future uncertainty	2.90	.97	1.00	5.00	.11	-.53	.97
Divergent problem solving	3.02	.34	2.21	3.85	-.07	.16	.98
PWB Self-acceptance	4.50	.77	2.00	6.00	-.74	.96	.96
PWB Autonomy	4.23	.63	2.90	5.50	.10	-.86	.97
PWB Environmental Mastery	4.33	.59	2.40	5.40	.59	-.49	.97
PWB Purpose in Life	4.75	.75	2.30	6.00	-.84	.47	.94
PWB Positive Relations	4.49	.92	1.80	6.00	-.34	-.34	.97
PWB Personal Growth	4.88	.76	2.80	6.00	-.80	.16	.94
PWB overall score	4.55	.54	2.75	5.55	-.62	.35	.97

Zero-order Correlations among study factors

Psychological Eudaimonic well-being appears to be positively correlated with wisdom as pragmatic knowledge and wisdom as dialectical post-formal thinking; it appears to also positively correlated with

divergent problem solving. wisdom as dialectical post-formal thinking, as pragmatic competence and uncertainty management appear to be positively correlated with divergent problem solving (see Table 2).

Table 2. Zero-order Correlations among Eudaimonic well-being, wisdom and divergent problem solving

Variables	1	2	3	4	5	6	7	8	9	10
1. Wisdom as pragm.	----									
2. Wisdom as dialectical	.53***	----								
3. Wisdom future unc.	.11	.33***	----							
4. Divergent probl.	.28**	.42***	.24*	----						
5. Self-accept.	.13	.02	-.07	.47***	----					
6. Autonomy	.40***	.35***	-.13	.32**	.24*	-----				
7. Env. mastery	.36***	.29**	-.02	.47***	.67***	.31***	-----			
8. Life projects	.17	.19+	.11	.65***	.77***	.25*	.68***	-----		
9. Positive relations	.36**	.18	-.02	.37***	.64***	.28**	.63***	.55***	-----	
11. PWB overall score	.37***	.30**	.02	.64***	.84***	.48***	.83***	.86***	.80***	.73***

Note. $p < .06$; * $p < .05$; ** $p < .01$; *** $p < .001$

Age effects on study variables. The Linear Regression Models

Age and perceived efficacy on divergent problem solving. Linear regression model highlights a decrease in the perceived efficacy on divergent problem solving (Multiple R = .30; $R^2 = .09$; Adj. $R^2 = .08$); Beta = -.303; st. error of Beta = .09; $p < .01$. (Anova overall goodness of fit index: MS = 1.02; F = 9.21; $p < .01$).

Age and wisdom as dialectical post-formal thinking. Linear Regression model highlights a decrease in post formal dialectical thinking as age increases (Multiple R = .23; $R^2 = .05$; Adj. $R^2 = .04$); Beta = -.230; st. error of Beta = .09; $p < .05$. (Anova overall of fit index: MS = 1.52; F = 5.42; $p < .05$)

Age and Personal Growth. Linear Regression model highlights a decrease in the personal growth as age increases (Multiple R = .20; $R^2 = .04$; Adj. $R^2 = .03$); Beta = -.204; st. error of Beta = .09; $p < .05$. (Anova overall of fit index: MS = 2.48; F = 4.29; $p < .05$)

Gender and school education as grouping variables for PWB, wisdom and perceived efficacy on divergent problem solving

A Manova Model highlighted that gender as grouping variable was not significant for PWB as overall score ($F = .157$; $p = .69$), and for the six its components ($F = 1.32$; $p = .21$). For gender as grouping variable for wisdom Manova model highlighted not significant value (Wilks's Lambda = .97; $F(3,79)$; $p = .5$). For gender as grouping variable Manova Model highlighted not significant value for perceived efficacy on divergent problem solving ($F = .00$). The Manova Model for school education highlighted not significant value for wisdom (Wilks's Lambda = .96; $F(6, .47)$; $p = .85$). School education as grouping variable highlighted a not significant value for PWB as overall score (Anova Model: $F = 1.09$; $p = .33$) and for its six components (Anova Model: $F = 1.32$; $p = .21$).

The contributions of wisdom and of the perceived efficacy on divergent problem solving on the Eudaimonic well-being: the Hierarchical Regression Models

The contributors to overall psychological Eudaimonic well-being. In the first step the structural variables age, gender and school education were added to the equation. The model resulted in not significant (Multiple R = .16; $R^2 = .02$; Adj. $R^2 = .00$; $F(3,84) = .79$; $p = .49$). In the second step, wisdom dimensions were added. The model resulted as significant with wisdom as pragmatic competence as statistically significant (Beta = .282; st. err. of Beta = .12; $p < .05$). Multiple R = .43; $R^2 = .18$; Adj. $R^2 = .12$. $F = (6,81) = 3.13$; $p < .01$. In the third step, divergent problem solving was added to the equation. Wisdom as pragmatic competence retained the significance (Beta = .205; st. error of Beta = .09; $p < .05$). wisdom as uncertainty management becomes as significant (Beta = -.190; st. error of Beta = .05), while divergent problem solving give a significant contribution to the model (Beta = .642; st. error of Beta = .16; $p < .001$).

The whole final model resulted as significant, with 43% of explained variance (Multiple R = .69; R² = .48; Adj. R² = .43). F = (7,76) = 1.27; p < .001. (Anova overall of fit index: MS = 1.48; F = 9.34; p < .01; see Table 3).

Table 3. The contributors to overall Eudaimonic well-being

Variable	Beta	St. error of beta	p level
<i>First step</i>			
Age	-.07	.11	< .49
Gender	.03	.11	< .76
School education	131	.11	< .23
			Multiple R = .16; R ² = .402; adj. R ² = ---; F (3,84) = 79; p < .49
<i>Second step</i>			
Age	.02	.11	< .84
gender	.03	.10	< .75
School education	149	.10	< .15
Wisdom as pragmatic	282	.12	< .05
Wisdom as dialectical post-formal thinking	196	.13	< .14
Wisdom as future uncertainty management	-.08	.11	< .42
			Multiple R = .43; R ² = .18; adj. R ² = .12; F (6,81) = 3.14; p < .01
<i>Third step</i>			
Age	.11	.01	< .21
gender	.00	.12	< .99
School education	.06	.06	< .43
Wisdom as pragmatic competence	.205	.12	< .05
Wisdom as dialectical	.002	.11	< .98
Wisdom as future uncertainty management	-.190	.05	< .05
Divergent problem solving	.642	.16	< .001
			Multiple R = .69; R ² = .48; adj. R ² = .44; F (7,76) = 1.27; p < .001

The contributors to Purpose in Life component of eudaimonic well-being. In the first step structural variables age, gender and school education were added to the equation. School education approached significance (Beta = .205; st. error of Beta = .10; p = .06. the model resulted as not significant (Multiple R = .21, R² = .04; Adj. R² = .01; F (3,91) = 1.48; p = .22. In the second step, wisdom dimensions were added. School education approached significance (Beta = .187; st. error of Beta = .10; p = .08). The model resulted as not significant (Multiple R = .30; R² = .09; Adj. R² = .02; F = (6,84) 1.44; p = .2. In the third step divergent problem solving was added. Age become significant (Beta = .193; st. error of Beta = .01; p < .05). Divergent thinking resulted as significant (Beta = .695; st. error of Beta = .22; p < .001). The whole model resulted as significant, with 39% of explained variance. (Multiple R = .66; R² = .44; Adj. R² = .39. F (7,79) = 8.99; p < .001). Anova overall goodness of fit index: MS = 3.09; F = 8.99; p < .01.

The contributors to the Self-Acceptance component of eudaimonic well-being. In the first step structural variables age, gender and school education were added to the equation. The model resulted as not significant (Multiple R = .15; R² = .02; Adj. R² = .00; F (3,94) = .80; p = .80). In the second step, wisdom dimensions were added, resulting in the model as not significant (Multiple R = .24; R² = .05; Adj. R² = .00; F (6,88) = .90; p = .49). In the third step divergent problem solving was added to the equation. Wisdom as future uncertainty management resulted as significant but with negative value (Beta = -.255; st. error of Beta = .08; p < .01), together with creative divergent problem solving (Beta = .577; st. error of Beta = .10; p < .001). The whole model resulted as significant (Multiple R = .55; R² = .30; Adj. R² = .25; F (7, 82) = 5.25,

$p < .001$), with 25% of explained variance. (Anova overall goodness of fit index: $MS = 2.41$; $F = 5.25$; $p < .001$)

The contributors to the Positive Relations with others component of eudaimonic well-being. In the first step, the structural variables age, gender and school education were added to the equation, resulting in the model as not significant (Multiple $R = .20$; $R^2 = .04$; Adj. $R^2 = .01$; $F(3,91) = 1.37$; $p = .25$). In the second step, wisdom dimensions were added. Wisdom as pragmatic knowledge resulted as significant ($Beta = .324$; st. error of Beta = .12; $p < .01$). The model resulted as significant (Multiple $R = .40$; $R^2 = .16$; Adj. $R^2 = .10$; $F(6,87) = 2.90$; $p < .01$). In the third step, divergent problem solving was added to the equation. Wisdom as pragmatic knowledge remained as significant ($Beta = .291$; st. error of Beta = .11; $p < .01$). Divergent problem solving resulted as significant ($Beta = .364$; st. error of Beta = .10; $p < .001$). The whole model resulted as significant (Multiple $R = .50$; $R^2 = .25$; Adj. $R^2 = .18$; $F(7, 82) = 3.94$; $p < .001$), with 18% of explained variance. Anova overall goodness of fit index: $MS = 2.91$; $F = 4.49$; $p < .001$.

The contributors to the component Personal Growth of eudaimonic well-being. In the first step, the structural variables were added to the equation. School education approached the significance ($Beta = .160$; st. error of Beta = .10; $p = .11$). The whole model resulted as significant (Multiple $R = .26$; $R^2 = .07$; Adj. $R^2 = .04$; $F(3,100) = .05$). In the second step, wisdom dimensions were added. Wisdom as dialectical post formal thinking resulted as significant ($Beta = .276$; st. error of Beta = .12; $p < .03$). The model resulted as significant (Multiple $R = .46$; $R^2 = .21$; Adj. $R^2 = .16$; $F(6, 89) = 4.06$; $p = .001$). In the third step, creative divergent problem solving was added to the equation. Divergent problem solving resulted as significant ($Beta = .583$; st. error of Beta = .09; $p = .001$), while wisdom as dialectical post-formal thinking became not significant. The whole model resulted as significant (Multiple $R = .66$; $R^2 = .44$; Adj. $R^2 = .40$; $F(7, 96) = 1.88$; $p = .001$). Anova overall goodness of fit index: $MS = 3.76$; $F = 11.33$; $p = .01$.

The contributors to the component Environmental Mastery of eudaimonic well-being. In the first step, structural variables age, gender and school education were added to the equation. The model resulted as not significant (Multiple $R = .17$; $R^2 = .03$; Adj. $R^2 = .00$; $F(3.95) = .98$; $p = .4$). In the second step, wisdom dimensions were added. Wisdom as dialectical post-formal thinking resulted as significant ($Beta = .266$; st. error of Beta = .13; $p = .05$), and also wisdom as future uncertainty management, but with negative value ($Beta = -.235$; st. error of Beta = .11; $p = .05$). The model resulted as significant (Multiple $R = .39$; $R^2 = .15$; Adj. $R^2 = .10$; $F(6,89) = 2.81$; $p = .01$). In the third step, divergent problem solving was added. The significance of wisdom as post-formal thinking was suppressed, becoming not significant ($Beta = .137$; $p = .17$). Wisdom as future uncertainty management remained as significant ($Beta = -.283$; st. error of Beta = .10; $p = .01$). Divergent problem solving resulted as significant ($Beta = .481$; st. error of Beta = .10; $p = .001$). The whole model resulted as significant (Multiple $R = .57$; $R^2 = .33$; Adj. $R^2 = .27$; $F(7,83) = 5.91$; $p = .001$, with 27% of explained variance. Anova overall goodness of fit index: $MS = 1.55$; $F = 5.91$; $p = .01$.

The contributors to the component Autonomy of eudaimonic well-being. In the first step, structural variables age, gender and school education were added to the equation. The model resulted as not significant (Multiple $R = .20$; $R^2 = .04$; Adj. $R^2 = .01$; $F(3,92) = 1.40$; $p = .24$). In the second step, wisdom dimensions were added. School education became as significant ($Beta = .027$; st. error of Beta = .09; $p = .05$). Wisdom as practical competence resulted as significant ($Beta = .249$; st. error of Beta = .10; $p = .05$). Wisdom as post-formal dialectical thinking resulted as significant ($Beta = .335$; st. error of Beta = .12; $p = .01$). Wisdom as future uncertainty management resulted as significant, with negative value ($Beta = -.315$; st. error of Beta = .10; $p = .01$). The model resulted as significant (Multiple $R = .52$; $R^2 = .27$; Adj. $R^2 = .22$; $F(6,86) = 5.55$; $p = .001$). In the third step, divergent problem solving was added. School education approached significance, reducing its value ($Beta = .180$; st. error of Beta = .09; $p = .06$). Wisdom as practical competence remained as significant ($Beta = .243$; st. error of Beta = .10; $p = .05$). Wisdom as dialectical post-formal thinking remained as significant ($Beta = .248$; st. error of Beta = .12; $p = .05$). Wisdom as future uncertainty management remained as significant ($Beta = -.363$; st. error of Beta = .10; $p = .001$). Divergent problem solving resulted as significant ($Beta = .296$; st. error of Beta = .10; $p = .01$). The whole model resulted as significant (Multiple $R = .60$; $R^2 = .36$; Adj. $R^2 = .30$; $F(7, 80) = 6.54$; $p = .001$). Anova overall goodness of fit index: $MS = 1.92$; $F = 6.54$; $p = .001$.

DISCUSSION

The present study regarded the issue of ageing well from the perspective of eudaimonic psychological well-being. Recognizing its relevance for reaching a satisfactory life also in the last stage of life (Ryff &

Singer, 2008; Ryff, 2014; Ryff, 2023) and the necessity for this reason to identify the factors that can improve it, the study evaluated the contribution of two factors, namely wisdom and divergent problem solving for its improvement. For this study the construct of wisdom elaborated by Moraitou & Efklides (2012) has been adopted. Results confirm the positive associations between wisdom, divergent problem solving and eudaimonic well-being.

The sample shows different levels of wisdom according to specific dimensions: the highest scores has been obtained on wisdom as pragmatic competence, while the lowest on wisdom as future uncertainty. The sample shows a high level of eudaimonic well-being, also on dimensions such as Purpose in Life and Personal Growth that are unusual for old age at this high level (Ryff & Singer, 2008; Schilling, 2022).

Age affects the divergent problem solving, in line with other studies (Colautti et al., 2023; Palmiero et al., 2017), as hypothesized. Indeed, as age increases, it linearly decreased. This data, considering the emergent studies on the relevance of creativity in its broad theoretical spectrum for positive ageing (Palmiero et al., 2017; Colombo et al., 2018), requests special attention and future planning for activities, interventions aimed at improving this ability in the old population.

Wisdom shows a robust association with overall eudaimonic well-being in its components of pragmatic competences and future uncertainty management, as hypothesized. The pragmatic competencies (ability in navigating daily situations, complexity and giving good advice to others) improve the well-being of old people, who can receive positive feedback, improving the quality of their relationships, as evidenced by the connection with the dimension of Positive Relations with Others.

The correlations that emerged between wisdom in its three components and divergent problem solving may open the door to suggestive reflection. The most robust association has been found between wisdom as dialectical post-formal thinking and divergent problem solving, as hypothesized (H3), suggesting the presence of underlying cognitive processes, such as the ability of restructuring of the informations by which a problem is composed giving life to a new gestalt, and /or the ability to recognize underlying common factors that pertains to two or more issues, such as in presence of dilemmatic horns. The ability to identify new, creative solutions could therefore belong both to divergent problem solving and to wisdom as dialectical post-formal thinking, escaping the forced choice of a dilemma and restructuring the situation in a new way or new interpretation of it. Wisdom conceived as pragmatic competence and as management of future uncertainty appears also significantly connected, albeit with less correlational strength, with divergent problem solving, an unexpected result. With being faced with complex situations, dilemmas and issues in which it is difficult to identify a fairly defined future outcome, it requires the ability to think innovatively. The ability to restructure problems, identify answers, and ways of coping that are not obvious and determined by tradition passed can be of emerging relevance in our society. For this reason, creative competence in problem solving can be integrated with wisdom for effective responses, especially in contemporary, flexible, rapidly evolving society (Bauman, 2013), and reevaluating the role of old age for the evolution of society.

Divergent problem solving emerges as the most powerful contributor for eudaimonic well-being as a global score and for most of its subcomponents, as hypothesized (H7). Wisdom also gives a significant contribution to overall eudaimonic well-being, with positive value for pragmatic competence, and with negative value for future uncertainty management, confirming the hypothesis H6. These data seem to confirm the role of wisdom as pragmatic competence and as post-formal divergent thinking for positive development in the third age. Future uncertainty management and the awareness of human finitude dimension represent, on the contrary, a threatening factor, that, in this study, compromise, instead improving, the well-being as emerged in the Hierarchical Regression Models. The awareness of personal mortality, the awareness of unpredictability of the future give rise to anxiety, perhaps, and can be perceived as a block, a detrimental factor for this type of well-being, based on the future tension toward self-realisation. It may be that other constructs related to positive functioning can be positively associated with this awareness, such as sustainable behaviours, more oriented toward the common good of the society (Zambianchi, 2024).

A relevant methodological question emerged in this study: which is the relationship between wisdom as dialectical post-formal thinking and divergent problem solving? Are they distinct constructs or overlapping constructs? Both are perceived measures, so they belong to the same type of self-report measures. Looking at the results of Hierarchical Regression Models, it seems that divergent problem solving suppresses the contribution of wisdom as dialectical post-formal thinking in all of the components of PWB, but with the exception of Autonomy (a sub-component of PWB), where they give both autonomous contributions to it. In fact, in the second step, wisdom as dialectical post formal thinking appears to be a significant contributor to the components of psychological well-being and to the PWB as global score. Only for Autonomy, both dialectical post formal thinking and divergent thinking remain as

significant. So, the question is far from a clear understanding. While wisdom and creativity share certain cognitive processes, creativity may have a more direct role in enhancing well-being across multiple dimensions. The correlations between them are of medium level, $p < .40$, not enough to clearly support the overlapping hypothesis. And then, giving a closer look to the items of the two scales, several items of the perceived efficacy on divergent problem solving such as “to be a volcano of ideas”; “to find new way to do the same things in order to avoid boredom”; “go against the grain and think differently from others” are not included in the wisdom scale. They appear to measure partially different dimensions of creativity, namely widening (deal with a high number of elements) and connecting (establish relationships among different elements and combining them in unusual ways, Antonietti et al., 2023; Colombo et al., 2018). But, only future research could disentangle this question.

Limits of the study, future directions and practical implications

The study has important limits that must be taken into account. The first limit is the small sample of participants. Broader samples are requested for disentangling the question of the relations between post formal dialectical thinking and divergent problem solving, as discussed above.

Another limit is the imbalance for school education: high levels of schooling are overrepresented. The study is cross-sectional, for this reason, only longitudinal studies could identify the causal connection between eudaimonic well-being, wisdom and divergent problem solving, important for future concrete programs and interventions. Despite these relevant limits, the study seems to indicate that cultivating both wisdom and divergent problem solving can help old people to live successfully realising their potential, for themselves and for society, requesting programs and projects aimed at improving them.

Gannì et al., (2023) proposed a set on creative exercises for enhancing creativity in old age. A further possibility for enhancing both divergent thinking, that has been demonstrated as relevant for psychological well-being and cognitive functioning in everyday life with an unexpected force, and wisdom, could be represented by the Life Skills Education Model adapted for the old age (Zambianchi, 2016; Zambianchi, 2025). This Model, elaborated by WHO (1994) for the childhood and the adolescence, could be an interesting theoretical frame for developing projects aimed at improving both divergent thinking (that is a specific Life Skill of this Model) and wisdom, pertaining the latter to the Critical Thinking, another Life Skill included in this Model. This Model can be utilized by psychologists and education professionals for improving these resources that emergent research is highlighting as key determinants for positive ageing.

REFERENCES

Aldwin, C. M. (2009). Gender and wisdom: A brief overview. *Research in Human Development*, 6(1), 8. <https://doi.org/1.1080/15427600902779347>

Alfonso-Benlliure, A., Mayordomo, T., Sales, A., & Mélendez, J.C. (2021). Divergent Thinking in Older Adults: Understanding its Role in Well-being. *Journal of Happiness Studies*, 22(7), 3285-3298. <https://doi.org/1.1007/s10902-021-00361-w>.

Alpaugh, P. K., & Birren, J. E. (1977). Variables affecting creative contributions across the adult life span. *Human Development*, 20(4), 240-248. <https://doi.org/1.1159/000271559>

Antonietti, A., Colombo, B., Memmert, D. (eds.) (2013). *Psychology of Creativity. Advances in theory, research and application*. Nova Science, New York. 227 [<http://hdl.handle.net/10807/52362>]

Ardelt, M. (2003). Empirical assessment of a three-dimensional wisdom scale. *Research on Aging*, 25(3), 275-324. <https://doi.org/1.1177/0164027503025003004>

Ardelt, M. (2004a). Where can wisdom be found? *Human Development*, 47(5), 304-307. <https://doi.org/1.1159/000079158>

Ardelt, M. (2004b). Wisdom as expert knowledge system: A critical review of a contemporary operationalization of an ancient concept. *Human Development*, 47(5), 257-285. <https://doi.org/1.1159/000079154>

Ardelt, M. (2024). Wisdom development and self-transcendence: A merging of self and Other. *Possibility Studies & Society*, 2(2), 191-196. <https://doi.org/1.1177/27538699241233092>

Ardelt, M., & Edwards, C. A. (2016). Wisdom at the end of life: An analysis of mediating and moderating relations between wisdom and subjective well-being. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 71(3), 502-513. <https://doi.org/1.1093/geronb/gbv051>

Baltes, P & Ulman Lindenberger, U. (1988). On the range of cognitive plasticity in old age as a function of experience: 15 years of intervention research. *Behavior Therapy*, 19, (3), 283-300. [https://doi.org/1.1016/S0005-7894\(88\)80003-0](https://doi.org/1.1016/S0005-7894(88)80003-0)

Baltes, P., & Smith, J. (2008). The fascination of wisdom: Its nature, ontogeny, and function. *Perspectives on Psychological Science*, 3(1), 56-64.

Baltes, P., & Staudiger, U. (2000). Wisdom: a metaheuristic (pragmatic) to orchestrate mind and virtue toward excellence. *American Psychologist*, 55 (1), 122-136.

Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. W.H. Freeman and Company, New York.

Bauman, Z. (2013). *La società dell'incertezza*. Il Mulino ed. Bologna

Beaty, RE., Benedek, M., Wilkins, RW., Jauk, E., Fink, A., Silvia, PJ., Hodges, DA., Koschutnig, K., & Neubauer, AC. (2014). Creativity and the default network: A functional connectivity analysis of the creative brain at rest. *Neuropsychologia*, 64:92-8. <https://doi.org/1.1016/j.neuropsychologia.2014.09.019>.

Boylan, J.M., Choi, J.H., Kirsch, J.A., & Ryff, CD. (2025). Educational disparities in 20-year trajectories of psychological well-being in a national sample. *Scientific Reports*, 15, 11437 <https://doi.org/1.1038/s41598-025-95058-y>

Candeias, AA., & Galindo, E. (2021). Cognitive aging: why we need creativity to increase cognitive preservation. *Health Psychology Report*, 10(4), 257-265. <https://doi.org/1.5114/hpr.2021.109537>.

Caprara, G.V. (2001). *La valutazione dell'autoefficacia*, Erickson ed. Trento.

Colautti, L., Borsa, V.M., Fusi, G., Crepaldi, M., Palmiero, M., Garau, F., Bonfiglio, N.S., Giannì, J., Rusconi, M.L., Penna, M.P., et al. (2013). The Role of Cognition in Divergent Thinking: Implications for Successful Aging. *Brain Science*, 13, 1489. <https://doi.org/1.3390/brainsci13101489>.

Colombo, B., Antonietti, A., & Daneau B. (2018). The Relationships Between Cognitive Reserve and Creativity. A Study on American Aging Population. *Frontiers in Psychology*, 23, 9-764. <https://doi.org/1.3389/fpsyg.2018.00764>

Deci, E. L., & Ryan, R.M. (2008). Facilitating Optimal Motivation and Psychological Well-Being across Life's Domains. *Canadian Psychology*, 49, 14-23. <https://doi.org/1.1037/0708-5591.49.1.14>

Depp, C., Vahia IV, & Jeste, D. (2010). Successful aging: focus on cognitive and emotional health. *Annual Review of Clinical Psychology*, 6:527-5. <https://doi.org/1.1146/annurev.clinpsy.121208.131449>

Dong, M., Weststrate, N. M., & Fournier, M.A. (2023). Thirty Years of Psychological Wisdom Research: What We Know About the Correlates of an Ancient Concept. *Perspectives on Psychological Science*, 18(4), 778-811. <https://doi.org/1.1177/17456916221114096>

Etezadi, S., & Pushkar, D. (2013). Why are wise people happier? An explanatory model of wisdom and emotional well-being in older adults. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 14(3), 929-95. <https://doi.org/1.1007/s10902-012-9362-2>

Gabora, L. (2013). *Psychology of creativity*. In E.G., Carayannis (ed). *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship* (pp.1515-1520), NEW Delhi, India, Springer.

Galassi, F., Merizzi, A., D'Amen, B., & Santini, S. (2022). Creativity and art therapies to promote healthy aging: A scoping review. *Frontiers in Psychology*, 13:906191. <https://doi.org/1.3389/fpsyg.2022.906191>.

Gluck, J., Weststrate, N.M., & Scherpf, A. (2022). Looking beyond linear: a close examination of the relationships between Wisdom and Well-being. *Journal of Happiness Studies*, 3285-3313. <https://doi.org/1.1007/s10902-022-00540-3>.

Grossmann, I., Gerlach, T.M., & Denissen JJA. (2016). Wise reasoning in the face of everyday life challenges. *Social Psychological and Personality Science*, 7(7), 611-622. <https://doi.org/10.1177/1948550616652206>.

Grossmann, I., Weststrate, NM., Ardel, M., Brienza, JP., Dong, M., Ferrari, M., Fournier, MA., Chao S. Hu., Nusbaum, HC., & Vervaeke, J. (2020). The Science of Wisdom in a Polarized World: Knowns and Unknowns, *Psychological Inquiry*, 31(2), 103-133. <https://doi.org/1.1080/1047840X.202.1750917>

Guilford, J.P. (1950). Creativity. *American Psychologist*, 5 (9), 444-454. <https://doi.org/1.1037/h0063487>.

Guilford, J.P. (1967). Creativity: Yesterday, today, and tomorrow. *The Journal of Creative Behavior*, 1(1), 3-14. <https://doi.org/1.1002/j.2162-6057.1967.tb00002.x>

Hill, PL., & Turiano, NA. (2014). Purpose in life as a predictor of mortality across adulthood. *Psychological Sciences*. 2014 Jul;25(7):1482-6. <https://doi.org/1.1177/0956797614531799>.

Hultsch, DF., MacDonald, S.W.S., Hunter, M.A., Maitland, S.B., & Dixon, R.A. (2002). Sampling and generalizability in developmental research: Comparison of random and convenience samples of older adults. *International Journal of Behavioral Development*, 26, 345-359.

Kahana, E., Kahana, B. & Lee, J.E. (2014). Proactive approaches to successful aging: one clear path through the forest. *Gerontology*, 60(5), 466-474.

Kallio, E. (2011). Integrative thinking is the key. An evaluation of current research into the development of adult thinking. *Theory and Psychology*, 1,17. <https://doi.org/1.1177/0959354310388344>

Kallio, E. (2015). From causal thinking to wisdom and spirituality. *Approaching Religion*, 2, 27-41.

Kallio, E. (2020). *From multiperspective to contextual integrative thinking in adulthood: Considerations on theorisation of adult thinking and its place as a component of wisdom*. In Kallio, Eeva (Eds.) *Development of adult thinking: Interdisciplinary perspectives on cognitive development and adult learning*. Abingdon, Oxon: Routledge, 9-32. <https://doi.org/1.4324/9781315187464-2>

Kallio, E.K., & Tynjälä, P. (Eds.). (2025). *What is Wisdom and Can it be Taught?: Philosophical, Psychological, and Pedagogical Perspectives*. Routledge. <https://doi.org/1.4324/9781003602149>

Labouvie-Vief, G. (1990). *Wisdom as integrated thought*. In R. J. Sternberg (Ed.), *Wisdom: Its nature, origins, and development* (pp. 52-83). New York: Cambridge University Press.

Labouvie-Vief, G. (2015). *Integrating emotions and cognition through the lifespan*. Springer Cham Heidelberg. <https://doi.org/1.1007/978-3-319-09822-7>

Law, A., & Staudiger, U. (2016). *Eudaimonia and Wisdom*. In Vitterso, J. (ed). *Handbook of Eudaimonic well-being. International Handbook on Quality of Life*, Springer.

Moraitou, R., & Efklides, A. (2012). The Wise Acting and Thinking Questionnaire. The cognitive facets of wisdom and its relations with Memory, Affect and Hope. *Journal of Happiness Study*, 13, 849-873. <https://doi.org/1.1007/s10902-011-9295-1>

Palmiero, M. (2015). The effects of age on divergent thinking and creative objects production: a cross-sectional study. *High Ability Studies*, 26(1), 1-26(1). <https://doi.org/1.1080/13598139.2015.1029117>

Palmiero, M., Nori, R., & Piccardi, L. (2017). Verbal and visual divergent thinking in aging. *Experimental Brain Research*, 235(4):1021-1029. <https://doi.org/1.1007/s00221-016-4857-4>.

Pascual-Leone, J. (1987). Organismic processes for neo-Piagetian theories: A dialectical causal account of cognitive development. *International Journal of Psychology*, 22, 531-57.

Pastorelli, C., Vecchio, G. M., & Boda, G. (2001). *Autoefficacia nelle Life Skills: soluzione dei problemi e comunicazione interpersonale*. In G. V. Caprara (Ed.), *La valutazione dell'autoefficacia*. Trento: Erickson.

Pasupathi M., & Staudinger U. M. (2001). Do advanced moral reasoners also show wisdom? Linking moral reasoning and wisdom-related knowledge and judgement. *International Journal of Behavioral Development*, 25(5), 401-415. <https://doi.org/1.1080/016502501316934833>

Rowe, JW, Kahn RL. (2015). Successful Aging 2.0: Conceptual Expansions for the 21st Century. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 70(4), 593-596. <https://doi.org/1.1093/geronb/gbv025>.

Ruini, C., Ottolini, F., Rafanelli, C., Ryff, C.D. & Fava, G.A. (2003). La validazione italiana delle Psychological Wellbeing Scales (PWB). *Rivista di Psichiatria*, 3, 117-129.

Runco, M. A., & Acar, S. (2012). Divergent thinking as an indicator of creative potential. *Creativity Research Journal*, 24(1), 66-75. <https://doi.org/1.1080/10400419.2012.652929>

Runco, M.A. (2004). Creativity. *Annual Review of Psychology*, 55, 657-687. <https://doi.org/1.1146/annurev.psych.55.090902.141502>

Ruth, J.-E., & Birren, J. E. (1985). Creativity in adulthood and old age: Relations to intelligence, sex and mode of testing. *International Journal of Behavioral Development*, 8(1), 99-109. <https://doi.org/1.1177/016502548500800107>

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069-1081. <https://doi.org/1.1037/0022-3514.57.6.1069>

Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 9(1), 13-39. <https://doi.org/1.1007/s10902-006-9019-0>

Ryff, C.D. (2023). Contributions of eudaimonic well-being to mental health practice. *Mental Health and Social Inclusion*, 27(3), 276-293. <https://doi.org/1.1108/MHSI-12-2022-0091>

Ryff, CD. (2014). Psychological well-being revisited: advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics*, 83(1):10-28. <https://doi.org/1.1159/000353263>.

Ryff, CD., & Keyes, CLM. (1995). The Structure of Psychological Well-Being Revisited. *Journal of Personality and Social Psychology*, 69(4):719-27. <https://doi.org/1.1037/0022-3514.69.4.719>

Schilling, OK., Wettstein, M., & Whal, HW. (2022). Associations of Wellbeing Levels, Changes, and Within-Person Variability With Late-Life All-Cause Mortality Across 12 Years: Contrasting Hedonic vs. Eudaimonic Wellbeing Among Very Old Adults. *Frontiers in Psychology*, <https://doi.org/1.3389/fpsyg.2021.750891>

Springer, KW., Pudrovska, T., & Hauser, RM. (2011). Does Psychological Well-Being Change with Age?: Longitudinal Tests of Age Variations and Further Exploration of the Multidimensionality of Ryff's

Model of Psychological Well-Being. *Social Science Research*, 40(1):392-398. <https://doi.org/1.1016/j.ssresearch.201.05.008>.

Staudinger, U. M., & Baltes, P. B. (1996). Interactive minds: A facilitative setting for wisdom-related performance? *Journal of Personality and Social Psychology*, 71(4), 746-762. <https://doi.org/1.1037/0022-3514.71.4.746>

Tymoszuk, U., Perkins, R., Spiro, N., Williamon, A., & Fancourt, D. (2020). Longitudinal Associations Between Short-Term, Repeated, and Sustained Arts Engagement and Well-Being Outcomes in Older Adults. *Journal of Gerontology, series B. Psychological Science Social Science*, 75(7), 1609-1619. <https://doi.org/1.1093/geronb/gbz085>.

Webster J. D. (2019). Self-report wisdom measures: Strength, limitations, and future directions. In Sternberg R. J., Glück J. (Eds.), *The Cambridge handbook of wisdom*(pp. 277-320). Cambridge University Press. <https://doi.org/1.1017/9781108568272.015>

WHO, (2020). *Healthy ageing and functional ability*. 16th October. <https://www.who.int/news-room/questions-and-answers/item/healthy-ageing-and-functional-ability>.

WHO, (2025). *Global Aging Population*, 21 February. <https://www.who.int/news-room/questions-and-answers/item/population-ageing>

Zambianchi, M. (2019). Benessere eudaimonico ed autoefficacia percepita nel problem solving creativo in età giovanile. *Ricerche di Psicologia (Research in Psychology)*, 4, 547-563. <https://doi.org/1.3280/RIP2018-004001>.

Zambianchi, M. (2020). Time of Wisdom and Time for Wisdom. The role of Time Perspective in Wisdom in old age. *Mediterranean Journal of Clinical Psychology*, 8, (3). <https://doi.org/1.6092/2282-1619/mjcp-2598>

Zambianchi, M. (2022). The role of wisdom for enhancing social well-being in old age. *Applied Psychology Bulletin. BPA*, 1-18. <https://doi.org/1.26387/bpa.2022.00008>

Zambianchi, M. (2024). *Old age and civic behaviour. A study on the relationship between wisdom and sustainable behaviours*. Paper presented at XIV Italian Conference on Aging Psychology, Chieti, 30-31th of May

Zambianchi, M. (2025). *Life Skill Education for the Old Age. Theoretical perspective and intervention projects*. Franco Angeli ed., Milano, Italy.

CRediT AUTHORSHIP CONTRIBUTION STATEMENT

Manuela Zambianchi: Conceptualization; Data Curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing - Original Draft; Writing - Review & Editing. Conceptualization; Data Curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing - Original Draft; Writing - Review & Editing. Conceptualization; Data Curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing - Original Draft; Writing - Review & Editing.

Historial do artigo

Recebido	06/09/2024
Aceite	21/07/2025
Publicado online	-
Publicado	31/12/2025