PSICOLOGIA

Revista PSICOLOGIA

(Edição *Online*)

Volume 38, Número 1, 2024

PSICOLOGIA

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Separação-individuação aos pais e resiliência nos conflitos no namoro em jovens adultos

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Resumo: A qualidade da vinculação com as figuras parentais tem um papel privilegiado no desenvolvimento da individuação dos jovens adultos, na forma como estes experienciam as suas relações amorosas e na aptidão de lidarem com acontecimentos adversos. O presente estudo tem como objetivo testar o papel preditor da separação-individuação aos pais e da resiliência nos conflitos no namoro, assim como testar o papel moderador da resiliência na associação entre a separação-individuação aos pais e os conflitos no namoro. A amostra foi constituída por 948 sujeitos com idades compreendidas entre os 18 e os 30 anos de idade (*M* = 21.76, *DP* = 3.31). Os resultados apontam que os conflitos no namoro são preditos pela separação- individuação aos pais e pela resiliência. Os dados sugerem ainda o efeito moderador da resiliência na associação entre a intrusividade e autoconfiança na mãe e as estratégias de resolução de conflitos não abusivas e os comportamentos violentos.

Palavras-chave: Separação-individuação; Conflitos no namoro; Resiliência; Jovens Adultos.

Separation-individuation to parents and resilience in dating conflicts in young adults: The quality of attachment with parents has a privileged role in developing individuation in young adults, in how they experience their romantic relationships and face their problems. This research aims to analyse the predictor role of parental separation-individuation and resilience in dating conflicts and test the role of resilience in the association between the separation-individuation of parents and dating conflicts. The sample comprised 948 people between 18 and 30 years of age (*M* = 21.76, *DP* = 3.31). The results show that the conflicts in dating are predicted by separation- individuation to parents and resilience. The collected data suggest the moderating effect of resilience in the association between intrusiveness and self-confidence on mothers and the resolution strategies of non-abusive conflicts and violent behaviours.

Keywords: Separation-individuation; Conflicts in date; Resilience; Young Adult.

Processos de separação-individuação aos pais

A consolidação da identidade começa na adolescência e estende-se até ao início da idade adulta com a exploração dos diferentes papéis sociais (Erikson, 1968), possibilitando a construção da autonomia (Arnett, 2014). A teoria do desenvolvimento psicossocial desenvolvida por Erikson (1968) tem sido a alavanca de vários modelos teóricos que explicam a construção da identidade, especificamente o modelo dos estados identitários (Márcia, 2002).

Segundo Márcia (2002), o desenvolvimento da identidade pode ser compreendido a partir do cruzamento de dois processos: o compromisso (aquisição de um conjunto de valores e crenças), e por outro lado a exploração (questionamento das decisões tomadas, e dos objetivos alcançados). O autor destacou quatro estatutos de identidade: a identidade realizada (construção de compromissos depois da exploração de alternativas), difusão da identidade (inexistência de exploração de alternativas e compromissos), identidade fechada (estabelecimento de compromissos e objetivos, sem uma fase de exploração) e a identidade moratória (o processo de exploração condicionado pela dificuldade da tomada de decisão, e da criação de compromissos) (Márcia, 2002).

Arnett (2014) define a adultez emergente como o período que ronda os 18 e os 25 anos, em que se desenvolve a passagem para a adultícia. É neste período que se verifica uma significativa exploração dos jovens em relação a si e ao mundo exterior, traduzindo-se na autonomia em relação aos pais. O processo de separação-individuação é promovido pelo sistema vinculativo saudável (Erikson, 1968), em que as figuras

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significativas conferem à criança sentimentos de segurança e apoio na exploração de si e do mundo prestando-lhe proteção perante circunstâncias adversas (Bowlby, 1988). A evolução da autonomia e identidade da criança desenvolve-se a partir da base segura em que são transmitidos, quando a criança estabelece representações positivas de si e dos outros (Bowlby, 1988).

A separação dos pais é primeiramente psicológica e, por norma, acompanha um sentimento de não identificação em relação às figuras parentais, pelo facto de os jovens não se sentirem compreendidos por estas, levando-os a procurar apoio e conforto no seu grupo de pares ou em outros adultos. É a separação face às figuras parentais que possibilita a consolidação da autonomia nos jovens (Erikson, 1968). O processo de separação-individuação pelo qual os jovens passam não implica a rutura dos laços vinculativos com as figuras parentais, uma vez que o apoio e o suporte destas ajudam a que este processo seja levado a cabo (Arnett, 2014). A separação-individuação integra dois processos desenvolvimentais que se estendem ao longo da vida do indivíduo: vinculação versus separação, o que se traduz na procura de autonomia (Arnett, 2014). A qualidade das primeiras relações de vinculação facilita o processo de separação-individuação aos pais (Buhl, 2008), uma vez que quando os pais são perial cionados como carinhosos e disponíveis estimulam a concretização do processo de autonomia e de afirmação da identidade dos jovens adultos (Bowlby, 1988; Erikson, 1968). Morais e Mota (2020) apontam para a importância da separação-individuação pautada por níveis de perceção de suporte, ligação aos pais e autoconfiança no desenvolvimento da personalidade adaptativa e no bem-estar dos jovens adultos. Por outro lado, a prática de estratégias manipuladoras pelos pais, com o intuito de terem os filhos mais perto tanto a nível físico, como emocional, conduzem a jovens mais dependentes (Cook, 2020; Dutton & White, 2012; Wang et al., 2021). A superproteção e as ligações sem limites dos designados *helicopter parents*, condicionam a vivência dos jovens adultos no exterior, no estabelecimento de novas relações e o ultrapassar de novos desafios, constituindo um entrave à autonomia dos mesmos (e.g., Wang et al., 2021). Por outro lado, relações pautadas por desinvestimento e abusos constituem fatores de risco para a continuidade de uma vivência relacional desadaptativa (e.g., Choe et al., 2022; Leadbeater et al., 2017; Monteiro et al., 2022).

Deste modo, tanto o processo de separação-individuação como a vinculação segura bem-sucedidos são fundamentais para o equilíbrio na autonomia do jovem, bem como na aptidão de confiar nos outros (Blom & Bergman, 2013). Todavia, segundo Arnett (2014), as alterações sociais, económicas e demográficas ocorridas no último século, o maior investimento académico, dificultam o processo de separação-individuação dos jovens. Embora os jovens neste período estejam mais autonomizados face às figuras parentais, muitas vezes não estão preparados, nem emocionalmente disponíveis para assumirem responsabilidades no que concerne à adultícia (e.g., Arnett, 2014; Kavčič & Zupančič, 2019). Assim, se por um lado, as figuras parentais devem garantir a vinculação, são também estas as responsáveis pelo incentivo à separação e à individuação (Erikson, 1968). Estudos recentes apontam para o papel fundamental da família no suporte emocional e financeiro dos jovens, no sentido do equilíbrio entre a ligação e a promoção da autonomia, particularmente na vivência em situações de crise (e.g., Choe et al., 2022; Oliveira et al., 2020; Permatasari et al., 2021).

Resiliência e os conflitos no namoro
A individuação realizada de forma adaptativa permite aos jovens adultos estarem mais disponíveis para os outros e a vivência exterior ao contexto familiar (Buhl, 2008). A vivência nas relações com as figuras significativas de afeto traduz-se na internalização de estratégias e competências pessoais que os jovens vão integrando na sua forma de perspetivar o mundo (Bowlby, 1988; Marcia, 2002). É a partir das interações pais-filhos que as crianças aprendem a lidar com o conflito (Alarcão, 2006). A resolução de conflitos de forma construtiva potencia o desenvolvimento de competências adaptativas nos jovens, incrementando a sua tolerância à frustração e a procura de estratégias adaptativas de resolução em torno das dificuldades (Costa & Matos, 2007). Por outro lado, o risco cumulativo e a ausência na qualidade das relações com as figuras significativas de afeto comprometem de forma significativa a capacidade de gestão emocional, e em consequência a resolução de conflitos nas relações (e.g., Bittar& Nakano, 2017; Özbay & Aydogan, 2020). A resiliência é caraterizada como um processo adaptativo que desenvolve o fortalecimento do individuo perante situações adversas, permitindo a construção de novas trajetórias (Rutter, 2006). A individuação dos jovens permite o desenvolvimento da resiliência fazendo face de forma adaptativa a experiências negativas, e tal como o desenvolvimento pessoal, o desenvolvimento de competências e habilidades do indivíduo são processos que potenciam a resiliência (Rutter, 2006). A resiliência deve ser entendida como um processo dinâmico em constante reorganização, articulando fatores de risco e de proteção na vivência dos jovens (Rutter, 2006). O processo da resiliência tem vindo a ser estudado no que concerne à violência nas relações amorosas (Flett et al., 2015), enquanto vítimas e perpetradores, sendo que a resiliência se mostra na sua maioria negativamente correlacionada com o papel de vitimização (Bisquert-Bover et al., 2019; Herrero et al., 2018; Korkmaz & Överlien, 2020; Monteiro et al., 2022). Ainda assim, a literatura

associa o processo resiliente com a resolução dos conflitos de forma construtiva, permitindo atribuir um novo significado às situações de risco e diminuir práticas violentas (Barreira & Nakamura, 2006; Grych et al., 2015; Korkmaz & Överlien, 2020).

A idade dos jovens pode constituir um fator relevante na vivência dos conflitos no namoro, pelo que jovens com as relações precoces pautadas por inconstância e descontinuidades emocionais parecem ser mais vulneráveis à vivência de conflitos e violência no namoro (e.g., Bittar & Nakano, 2017; Nascimento et al., 2018; Oliveira et al., 2016; Özbay & Aydogan, 2020). Nesta medida, a transferência da organização afetiva das crianças e adolescentes para o início da idade adulta não poucas vezes arrasta sentimento de baixa autoestima, ineficácia e desvalorização pessoal que se misturam com preconceitos e mitos face à desejabilidade das relações amorosas (Bisquert-Bover et al., 2019; Martín-Salvador et al., 2021; Monteiro et al., 2022) e que reflete a incapacidade para regular emocionalmente situações de abuso (Korkmaz & Överlien, 2020).

A literatura reporta ainda diferenças de sexo, pelo que apesar dos trabalhos realizados neste sentido, as mulheres continuam a ser reconhecidas como vítimas de discriminação e violência nas relações (WHO, 2023). A sociedade atual parece não proteger as mulheres deste flagelo, pelo que o avanço da tecnologia, embora positivo em muitas componentes, potencia nos jovens sentimentos de maior individualidade, isolamento e sentimentos de posse, conduzindo não poucas vezes a estratégias abusivas na relação amorosa (e.g., Schokkenbroek et al., 2022). Assim, embora tanto jovens do sexo feminino como do masculino estejam envolvidos enquanto vítimas e perpetradores em situações de conflito e violência na relação, são os jovens do sexo masculino que tendencialmente apresentam mais comportamentos abusivos e violentos (e.g., Ahmadabadi et al., 2021; Amin et al., 2023; Bisquert-Bover et al., 2019; Machado et al., 2014). Apesar da vitimização, são as mulheres que encontram mais estratégias de adaptação face aos conflitos na relação romântica (e.g., Bisquert- Bover et al., 2019; López-Fuentes & Calvete, 2015).

O presente estudo pretende compreender melhor o papel da separação-individuação aos pais e da resiliência no desenvolvimento dos conflitos no namoro, e testar o papel moderador da resiliência na associação entre a separação-individuação aos pais e os conflitos no namoro. A presente investigação procura demonstrar que o processo de separação-individuação aos pais alcançado com sucesso se reflete de forma positiva no desenvolvimento do processo resiliente. Com este estudo procurou-se também dar conta da importância do desenvolvimento da resiliência em jovens adultos, da prática de estratégias ajustadas nas relações íntimas e da remissão de condutas abusivas e violentas.

Objetivos e hipóteses

O presente estudo tem como objetivo testar de que forma os processos de separação individuação aos pais e a resiliência predizem os conflitos no namoro, bem como testar o efeito moderador da resiliência na associação entre a separação-individuação aos pais e os conflitos no namoro. Aguarda-se que os processos de separação-individuação aos pais e a resiliência predigam negativamente os conflitos no namoro em jovens adultos. Espera-se que a resiliência assuma um papel moderador na associação entre a separação-individuação aos pais e nos conflitos no namoro.

MÉTODO

Participantes

A amostra deste estudo é constituída por 817 jovens adultos (530 do sexo feminino – 64.8 %) com idades compreendidas entre os 18 e os 30 anos de idade ($M = 21.46$, $DP = 3.21$). Os jovens compreendem habilitações entre o 8.º ano (3.º ciclo) e o ensino superior (mestrado) ($M = 12.44$, $DP = 1.03$), sendo que 25.2% são estudantes universitários. Verifica-se quanto às relações, que dos 817 jovens adultos em estudo, 493 (52%) têm presentemente uma relação amorosa, com uma duração média de 30.95 meses, correspondendo aproximadamente a 2 anos e 7 meses ($M = 30.95$, $DP = 33.30$), 324 (34.2%) já tiveram uma relação amorosa, com uma duração média de 14.96 meses, correspondendo aproximadamente a 1 ano e 3 meses ($M = 14.96$, $DP = 17.03$), 129 (13.6%) nunca tiveram algum tipo de relacionamento e 27 (2.8%) sustentam ter um relacionamento amoroso mas sem compromisso. Foi critério de exclusão jovens que nunca tinham tido uma relação romântica ou tiveram uma relação romântica sem compromisso.

Instrumentos

No sentido de obter informações pessoais acerca dos participantes e das figuras parentais, foi utilizado um Questionário de Dados Sociodemográficos que tem como objetivo avaliar aspetos como a identificação pessoal, familiar e relação romântica (e.g., idade, sexo, escolaridade, configuração familiar, ter ou ter tido relação amorosa e a sua duração).

Para avaliação da individuação aos pais utilizou-se o Individuation Test for Emerging Adults (ITEA-Komidar et al., 2013), adaptado por Nunes et al. (2019). O teste comporta 36 itens distribuídos em cinco fatores avaliados para o pai e mãe separadamente: suporte de si (e.g., "Quando eu estou com problemas nas minhas relações pessoais eu peço-lhe conselhos"); ligação (e.g., "Ele(a) respeita as minhas vontades"); intrusividade (e.g., "Eu acho que ele(a) quer saber demasiado sobre mim"); autoconfiança que descreve atitudes e condutas dos indivíduos pautadas pela autossuficiência, autonomia, independência e maturidade (e.g., "Eu tomo decisões sobre a minha carreira, independentemente da opinião dele (a).") e medo de desapontar os pais (e.g., "Quando eu faço algo de errado, preocupo-me com a reação dele (a)". No ITEA os valores mais altos equivalem a maiores níveis de suporte de si, ligação, intrusividade, autoconfiança, medo de desapontar os pais. Os itens apresentam-se numa escala de Likert através de uma gradação de 5 pontos (1-5) que varia entre "completamente falso" e "completamente verdadeiro". A análise da consistência interna, na presente amostra, do instrumento total para a mãe e para o pai, respetivamente, é de .81/.85 , e para as dimensões revelou valores de alfa de Cronbach: suporte de si = .82/.84; ligação = .85/.86; intrusividade = .85/.83; autoconfiança = .80/.79; medo de desapontar os pais = .77/.82. A análise fatorial confirmatória para a mãe e para o pai, respetivamente, apresenta índices de ajustamento adequados com os seguintes valores: $\chi 2(53) = 256.29$; $\chi 2(52) = 314.82$, $p < .001/ .001$, CFI = .96/.95, TLI = .94/.93, RMR = .05/.06, RMSEA = .06/.07.

Para avaliação dos diferentes tipos de abuso utilizou-se o Conflict in Adolescent Dating Relationships Inventory (CADRI; Wolfe et al., 2001) adaptado para a população portuguesa por Saavedra et al. (2008). É constituído por 35 itens e apresentam-se numa escala de Likert através de uma gradação de 3 pontos (0-3) que varia entre "Nunca" e "Frequentemente". Foi usado para avaliar os tipos gerais das estratégias ou formas de resolução de conflitos nas relações de intimidade utilizadas pelo próprio(a), todavia as formas específicas de abuso associadas a cada dimensão estão implícitas. É constituído por três dimensões que agregam formas específicas de abuso: estratégias de resolução não abusivas (e.g., "Eu apresentei os meus motivos"), estratégias de resolução abusivas (e.g., "Eu tentei pôr os amigos dele(a) contra ele(a)"), e comportamentos violentos ("Eu toquei-o(a), sexualmente, contra a vontade dele(a)"). No CADRI os valores mais elevados traduzem maiores níveis da adoção de estratégias de resolução de conflitos não abusivas, estratégias de resolução de conflitos abusivas, e comportamento violento. A dimensão do comportamento do parceiro(a), na presente investigação não foi utilizada porque não apresentava propriedades psicométricas ajustadas pelo que foi retirada. A escolha do presente instrumento deve-se ao facto de inexistirem instrumentos validados para a população portuguesa para as faixas etárias do nosso estudo que são jovens adultos entre os 18 e 30 anos. A análise da consistência interna, na presente amostra, para a totalidade do instrumento é de .82. E para as três dimensões apresenta os seguintes valores: estratégias de resolução não abusivas = .74, estratégias de resolução abusivas = .80 e para os comportamentos violentos = .69. A análise fatorial confirmatória apresenta índices de ajustamento adequados com os respetivos valores: $\chi 2 (21) = 109.68$, $p < .001$, CFI = .95, TLI = .92, RMR = .42, RMSEA = .07.

Para a avaliação dos níveis de adaptação psicossocial positiva face a eventos de vida adversos utilizou-se a Resilience Scale (Wagnild & Young, 1993), adaptada para a população portuguesa por Araújo e Mota (2011). É composta por 26 itens, agrupados em 5 dimensões: perseverança (e.g., "Quando faço planos levo-os até ao fim"), autoconfiança (e.g., "Eu sou disciplinado"), serenidade (e.g., "Sinto-me orgulhoso(a) das coisas que já concretizei na vida"), sentido de vida (e.g., "Sou amigo(a) de mim mesmo(a)"), e auto-suficiência (e.g., "Normalmente aceito as coisas como elas são"). Na Resilience Scale os valores mais altos refletem maiores níveis de perseverança, auto-confiança, serenidade, sentido de vida e autossuficiência Os itens apresentam-se numa escala de Likert através de uma gradação de 7 pontos (1-7) que varia entre "Discordo Totalmente" e "Concordo Totalmente". Na escala de Resiliência realizou-se uma análise fatorial exploratória em componentes principais, uma vez que se consideraram preenchidos os requisitos básicos para a realização desta, sendo os valores respetivamente para o Teste de Kaiser-Meyer-Olkin (KMO) .909 e para o Teste de Barlett de 6389.825 com uma significância de $p < .001$. Os resultados revelam que na sua maioria os itens saturam em dimensões diferentes dos originalmente propostos pelos autores. Na presente amostra, os resultados apontam então para uma proposta de uma estrutura unidimensional na escala de Resiliência, oferecendo desta forma maiores garantias de consistência interna. Importa ainda ressaltar que os itens 11, 12 e 22 foram retirados do estudo, uma vez que estes não se ajustam ao modelo e baixam a consistência interna do instrumento. Na presente amostra, o instrumento apresenta um valor de alpha de Cronbach na totalidade de .88. A análise fatorial confirmatória apresenta valores ajustados $\chi 2(204) = 1232.11$, $p < .001$, CFI = .83, TLI = .81, RMR = .06, RMSEA = .07.

Procedimentos e estratégia de análise de dados

Procedeu-se à elaboração do protocolo, sendo submetido ao conselho de Ética da Universidade de Trás-os-Montes e Alto Douro (UTAD) e aprovado com o n.º 20/2016. Posteriormente, foi pedida autorização às

respetivas escolas/faculdades da UTAD para proceder à realização da recolha de dados. A recolha da amostra foi realizada na UTAD mediante a seleção aleatória de turmas em vários cursos, assim como através do procedimento em bola de neve, na população em geral da região Norte e Centro de Portugal continental. A participação e a recolha de dados foram presenciais, solicitando o preenchimento do protocolo e a sua entrega à equipa de investigação em envelope selado. A duração média de preenchimento do protocolo foi de 30 minutos. Foi necessária a realização de um consentimento informado onde foram apresentados os objetivos gerais do estudo e todos os pressupostos referentes à participação voluntária e à confidencialidade dos dados prestados.

O presente estudo é quantitativo e de natureza transversal. O tratamento dos resultados foi realizado no programa estatístico SPSS – Statistical Package for the Social Sciencies (SPSS) versão 27.0 para o sistema Windows. Para efeitos de limpeza de dados, foram excluídos os missing values e os outliers. No que refere à estatística descritiva, foram testados os pressupostos de normalidade (medidas de assimetria e achatamento), sendo assumida a normalidade quando os valores absolutos se encontram entre -1 e 1. Foi analisada a informação estatística relativamente ao teste de Kolmogorov-Smirnov, os gráficos de Histogramas, Q-QPlots e Boxplot. Procederam-se as análises com testes paramétricos (Marôco, 2007). Foram desenvolvidas análises de regressão múltipla hierárquica para a predição dos conflitos no namoro. A partir do programa MACRO PROCESS de Andrew F. Hayes (Hayes, 2013), verificou-se o papel moderador da resiliência na associação entre separação-individuação pais e conflitos no namoro.

RESULTADOS

Papel preditor da separação-individuação aos pais e da resiliência nos conflitos no namoro

No sentido de testar o efeito preditor da separação-individuação aos pais e da resiliência nos conflitos no namoro, primeiramente foi necessário realizar regressões lineares múltiplas, utilizando como variável dependente os conflitos no namoro. Nas análises de regressão múltipla hierárquica foi necessário a inclusão de 5 blocos, especificamente, idade, sexo, resiliência, separação-individuação na figura materna e separação-individuação na figura paterna. As variáveis sexo e idade foram recodificadas em dummy (Marôco, 2007), de modo a analisar qual dos sexos (0 - masculino; 1 - feminino) e idades (0-18 aos 24 anos; 1-25 aos 30 anos) que predizem as variáveis em estudo.

Relativamente às estratégias de resolução não abusivas do próprio, observa-se que no bloco 1, a idade (dummy) não contribui de forma significativa para a variância do modelo, $F(1, 810) = 2.89$, $p = .089$, assim como o sexo (dummy), $F(2, 829) = 1.79$, $p = .168$. Quanto ao bloco 3, a resiliência contribui de forma significativa para a variância do modelo $F(3, 808) = 6.33$, $p < .001$, contribuindo com 2.3% da variância total ($R^2 = .023$) e com 1.9% de forma individual para a variância do modelo (R^2change =.019). No bloco 4 confere-se que a separação-individuação na figura materna contribui de forma significativa para a variância do modelo $F(8, 803) = 4.68$, $p < .001$, fornecendo 4.5% da variância total ($R^2 = .045$) e 2.2% de forma individual para a variância do modelo (R^2change = .022), todavia, analisando cada uma das dimensões não se verifica significância na predição das estratégias de resolução de conflitos não abusivas. Por fim, no bloco 5 a separação-individuação na figura paterna coopera de forma significativa para a variância do modelo $F(13, 798) = 3.35$, $p < .001$, contribuindo com 5.2% da variância total ($R^2 = .052$) e com .07% de forma individual para a variância do modelo (R^2change = .007). A partir da análise individual do papel de cada uma das variáveis independentes em relação à predição das estratégias de resolução não abusivas do próprio verifica-se significância nas seguintes variáveis: autoconfiança na figura paterna ($\beta = .193$) e resiliência ($\beta = .122$) (Tabela 1).

No que diz respeito às estratégias de resolução abusivas do próprio, verifica-se que no bloco 1, a idade (dummy) contribui de forma significativa para a variância do modelo $F(1, 810) = 4.38$, $p = .037$, explicando .05% da variância total ($R^2 = .005$) e .05% de forma individual para a variância do modelo (R^2change = .005). Relativamente ao bloco 2, o sexo (dummy) contribui de forma significativa para a variância do modelo $F(2, 809) = 5.61$, $p = .004$, e explica 1.4% da variância total ($R^2 = .014$) e .08% de forma individual para a variância do modelo (R^2change = .008). Ainda no bloco 3, a resiliência contribui de forma significativa para a variância do modelo $F(3, 808) = 8.44$, $p < .001$, contribuindo com 3% da variância total ($R^2 = .030$) e com 1.7% de forma individual para a variância do modelo (R^2change = .017). No que concerne ao bloco 4, a separação-individuação na figura materna contribui de forma significativa para a variância do modelo $F(8, 803) = 7.07$, $p < .001$, explica 6.6% da variância total ($R^2 = .066$) e contribuiu com 3.5% de forma individual para a variância do modelo (R^2change = .035). Por último, no bloco 5, a separação-individuação da figura paterna contribui de forma significativa para a variância do modelo $F(13, 798) = 5.91$, $p < .001$, explica 8.8% da variância total ($R^2 = .088$) e contribuiu com 2.2% de forma individual para a variância do modelo (R^2change = .022). A partir da análise individual do papel de cada uma das variáveis independentes em relação à predição das estratégias de resolução abusivas verifica-se significância nas

seguintes variáveis: ligação na figura paterna (β = -.184), intrusividade na figura materna (β = .142), idade-18 aos 24 anos (β = .084), sexo masculino (β = .083), resiliência (β = -.10) (Tabela 1). Quanto aos comportamentos violentos do próprio, verifica-se que no bloco 1, a idade (dummy) não apresenta um contributo significativo para o modelo $F(1, 810)$ = .00, p = .965, assim como o sexo (dummy) não contribui de forma significativa para a variância do modelo $F(2, 809)$ = .17, p = .844. No que diz respeito ao bloco 3, a resiliência contribui de forma significativa para a variância do modelo $F(3, 808)$ = 7.72, p < .001, explica 2.8% da variância total (R^2 = .028) e contribuiu com 2.7% de forma individual para a variância do modelo (R^2change = .027). Quanto ao bloco 4, a separação- individuação na figura materna contribui de forma significativa para a variância do modelo $F(8, 803)$ = 6. 12, p < .001, explica 5.7% da variância total (R^2 = .057) e contribuiu com 3% de forma individual para a variância do modelo (R^2change = .030). Finalmente, no bloco 5, verifica-se que a separação-individuação na figura paterna contribui de forma significativa para a variância do modelo $F(13, 798)$ = 4.86, p < .001, explica 7.3% da variância total (R^2 = .073) e contribuiu com 1.6% de forma individual para a variância do modelo (R^2change = .016). A partir da análise individual do papel de cada uma das variáveis independentes em relação à predição dos comportamentos violentos do próprio, verifica-se significância nas seguintes variáveis: autoconfiança na figura paterna (β = -.23), autoconfiança na figura materna (β = .21), ligação na figura materna (β = -.16), intrusividade na figura paterna (β = .14), resiliência (β = -.10) (Tabela 1).

Tabela 1. Regressão múltipla hierárquica para as estratégias de resolução não abusivas do próprio, abusivas do próprio e comportamentos violentos para o próprio

Estratégias de resolução não abusivas- CADRI EU	R^2	R^2Change	B	SE	β	t	p
Bloco 1 – Idade (dummy)	.00	.00	-.07	.05	-.05	-1.51	.13
Bloco 2 – Sexo (dummy)	.00	.00	-.00	.04	-.00	-.04	.17
Bloco 3 – Resiliência	.02	.19	.1	.03	.12	3.28	.00
Bloco 4 – Separação-individuação mãe	.05	.02					
Suporte de si			.08	.05	.12	1.69	.09
Ligação			-.04	.05	-.05	-.73	.46
Intrusividade			-.03	.03	-.06	-.95	.34
Auto-confiança			-.06	.06	-.08	-.93	.35
Medo de desapontar			.03	.05	.04	.56	.56
Bloco 5 - Separação-individuação pai	.05	.01					
Suporte de si			-.00	.05	-.01	-.08	.94
Ligação			-.03	.04	-.04	-.64	.52
Intrusividade			-.02	.04	-.03	-.57	.57
Auto-confiança			.13	.06	.19	2.18	.03
Medo de desapontar			.04	.05	.07	.92	.36
Estratégias de resolução Abusivas – CADRI EU	R^2	R^2Change	B	SE	β	t	p
Bloco 1 – Idade (dummy)	.01	.01	.09	.04	.08	2.40	.02
Bloco 2 – Sexo (dummy)	.01	.01	.07	.03	.08	2.34	.02
Bloco 3 – Resiliência	.03	.02	-.07	.02	-.10	-2.82	.01
Bloco 4 – Separação-individuação mãe	.07	.04					
Suporte de si			.03	.04	.06	.85	.40
Ligação			.01	.04	.02	.33	.75
Intrusividade			.07	.03	.14	2.48	.01
Auto-confiança			.1	.05	.17	1.97	.05
Medo de desapontar			-.03	.04	-.05	-.66	.51
Bloco 5 - Separação-individuação pai	.09	.02					
Suporte de si			-.02	.04	-.04	-.47	.64
Ligação			-.10	.04	-.18	-2.81	.01
Intrusividade			-.04	.03	-.07	-1.25	.21
Auto-confiança			-.05	.05	-.09	-.97	.33
Medo de desapontar			.08	.04	.14	1.89	.06

Tabela 1. (Continuação)

Comportamentos violentos – CADRI EU	R^2	R^2 Change	B	SE	β	t	p
Bloco 1 – Idade (dummy)	.00	.00	-.00	.02	-.00	-.03	.97
Bloco 2 – Sexo (dummy)	.00	.00	-.00	.01	-.00	-.07	.94
Bloco 3 – Resiliência	.03	.03	-.03	.01	-.10	-2.80	.01
Bloco 4 – Separação-individuação mãe	.06	.03					
Suporte de si			.01	.02	.05	.73	.47
Ligação			-.05	.02	-.16	-2.63	.01
Intrusividade			-.01	.01	-.05	-.83	.41
Autoconfiança			.05	.02	.21	2.35	.02
Medo de desapontar			.02	.02	.06	.88	.38
Bloco 5 - Separação-individuação pai	.07	.02					
Suporte de si			-.02	.02	-.11	-1.35	.18
Ligação			.01	.02	.02	.36	.72
Intrusividade			.03	.01	.14	2.51	.01
Autoconfiança			-.06	.02	-.23	-2.63	.01
Medo de desapontar			-.01	.02	-.06	-.73	.47

Nota: B, SE e β para um nível de significância de p <.05; Bloco 1- Sexo; Bloco 2- Idade; Bloco 3- Resiliência; Bloco 4- Dimensões da separação-individuação Mãe; Bloco 5– Dimensões da separação-individuação Pai.

Papel moderador da resiliência na associação entre a separação-individuação aos pais e os conflitos no namoro

Os resultados apontam que a resiliência exerce um papel moderador na associação entre a intrusividade na mãe e as estratégias de resolução de conflitos não abusivas (ΔR^2 = .006, ΔF(3, 808) = 7.12, p = .022, β = .082 , t(3, 808) = 2.30, p < .001, [.01; .15]). Assim, na presença de uma elevada intrusividade na relação com a mãe e na presença de uma alta resiliência, observa-se um aumento das estratégias de resolução de conflitos não abusivas do próprio. Porém na presença de uma elevada intrusividade na mãe e uma baixa resiliência, verifica-se uma diminuição das estratégias de resolução de conflitos não abusivas do próprio (Figura 1).
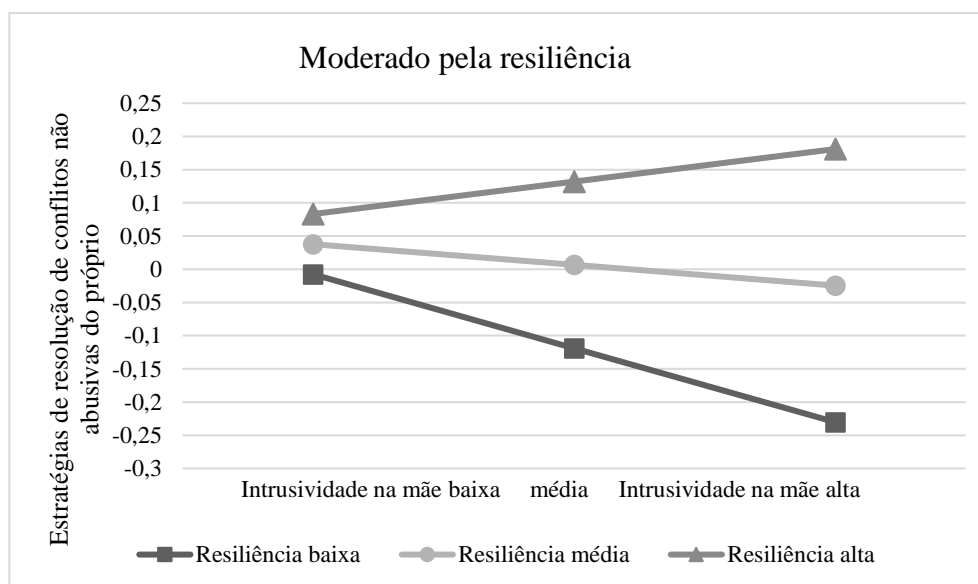
Figura 1. Efeito moderador da resiliência na associação entre a intrusividade na mãe e as estratégias de resolução de conflitos não abusivas do próprio

A partir da análise dos dados percebe-se que a resiliência exerce ainda um papel moderador na associação entre a autoconfiança na mãe e os comportamentos violentos do próprio (ΔR^2 = .038, ΔF(3, 808) = 10.51, p = .006, β = -.084 , t(3, 808) = -2.74, p < .001 [-.14; -.01]). A presença de uma elevada autoconfiança na mãe e na presença de uma resiliência alta, traduz uma diminuição dos comportamentos violentos do

próprio. Todavia, quando está presente uma elevada autoconfiança na mãe e uma baixa resiliência, verifica-se um aumento dos comportamentos violentos do próprio (Figura 2).
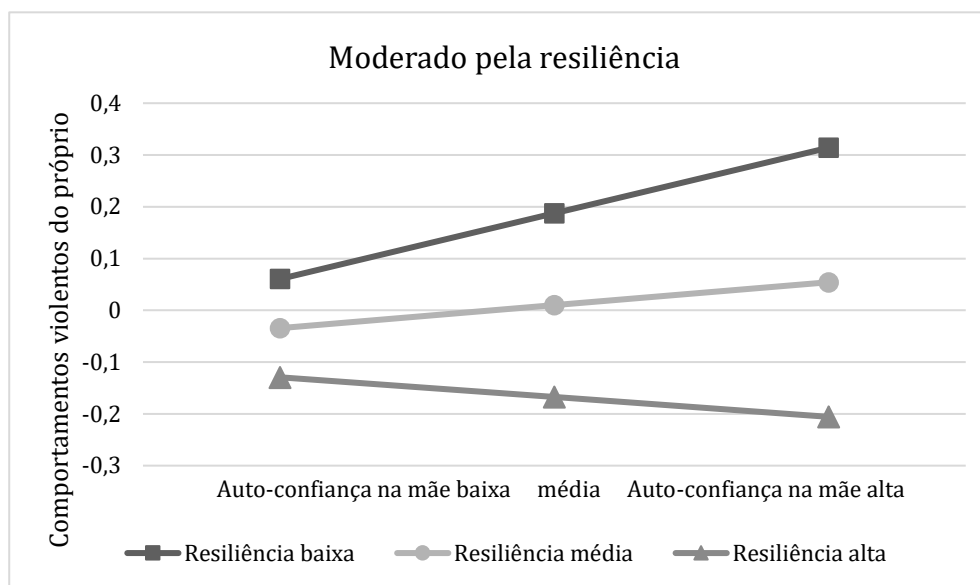
Figura 2. Efeito moderador da resiliência na associação entre a autoconfiança na mãe e os comportamentos violentos do próprio

DISCUSSÃO

O presente estudo teve como principal objetivo testar o papel da separação- individuação aos pais e da resiliência nos conflitos no namoro, assim como analisar o papel moderador da resiliência na associação entre a separação-individuação aos pais e os conflitos no namoro.

De acordo com os objetivos delineados, foi possível observar que a idade, o sexo, a separação-individuação aos pais e a resiliência têm um papel preditor nos conflitos no namoro nos jovens adultos. A separação-individuação aos pais assume um papel significativo na predição dos conflitos no namoro. A perceção das figuras parentais como uma base segura, possibilita que o processo de separação-individuação seja concretizado de forma adaptativa, na medida em que recria uma imagem positiva de si e do mundo e permite aos jovens explorar a relação com os demais (e.g., Galambos et al., 2018; Komidar et al., 2014; Morais & Mota, 2020; Mota & Rocha, 2012). Relações de segurança conduzem os jovens à vivência das relações de forma mais saudável, pelo que tendencialmente os conflitos no namoro poderão ser resolvidos de forma adaptativa (e.g., Choe et al., 2022; Leadbeater et al., 2017; Grych et al., 2015; Rollè et al., 2018). No presente estudo torna-se evidente o contributo da separação-individuação aos pais nos conflitos no namoro, uma vez que as dimensões positivas respetivamente, autoconfiança na figura paterna prediz positivamente as estratégias de resolução de conflitos não abusivas e negativamente aos comportamentos violentos, bem como a ligação a ambas as figuras parentais prediz de forma negativa as estratégias de resolução de conflitos abusivas e os comportamentos violentos. Assim, a qualidade da relação com os pais reflete-se no sentimento de segurança e autoconfiança que constitui uma base para a construção de relações saudáveis com os demais. Jovens mais seguros e confiantes tendem a encontrar estratégias de resolução de conflitos não abusivas e a rejeitar os comportamentos violentos (Choe et al., 2022; Dutton & White, 2012; Leadbeater et al., 2017; Sigelman & Rider, 2018). Porém, torna-se importante evidenciar que, ao invés do esperado, a autoconfiança na figura materna apresentou uma predição positiva dos comportamentos violentos, pelo que a autoconfiança que os jovens apresentam em relação à figura materna pode implicar, de forma menos adaptativa, a sua dominância na relação, traduzindo-se em condutas violentas. Importa refletir sobre este resultado, pelo que na presente amostra poderá postular algumas hipóteses. O excesso autoconfiança associa-se muitas vezes a traços de narcisismo que poderão suprimir emoções no intuito de esconder a sua vulnerabilidade e fragilidade, reforçando, deste modo, a sua autoimagem positiva (Cheshure et al., 2020). Relações pautadas por dominância e baixa tolerância à frustração desde cedo na relação com as figuras significativas de afeto poderão conduzir os jovens adultos a dificuldades no que concerne à regulação emocional, e por isso à dificuldade na resolução de conflitos de forma adaptativa (Di Pierro et al., 2018).

A dominância excessiva nos relacionamentos com o parceiro leva à humilhação e manipulação, interferindo negativamente na independência e autoestima do cônjuge, em consequência à subversão da

relação (e.g., Bisquert- Bover et al., 2019; Bittar & Nakano, 2017; Herrero et al., 2018; Martín-Salvador et al., 2021; Özbay & Aydogan, 2020). Por outro lado, a intrusividade prediz positivamente as estratégias de resolução de conflitos abusivas, assim como os comportamentos violentos (Martín-Salvador et al., 2021; Nascimento et al., 2018; Oliveira et al., 2016; Sigelman & Rider, 2018). De acordo com Rutter (2006), a intrusividade, superproteção e controlo inibem a independência do indivíduo, limitando o seu desenvolvimento de ferramentas para solucionar os problemas.

Os resultados apontam ainda que a resiliência prediz positivamente as estratégias de resolução de conflitos não abusivas, e prediz negativamente as estratégias de resolução de conflitos abusivos, tal como os comportamentos violentos. A capacidade de enfrentar de forma ajustada os acontecimentos adversos conduz a uma perceção mais adaptada dos atritos que surgem nas relações, pelo que a resiliência implica maior tolerância e leitura das dificuldades, permitindo diminuir as práticas violentas nas relações amorosas (e.g., Barreira & Nakamura, 2006; Herrero et al., 2018; Özbay & Aydogan, 2020).

No que concerne à idade, denota-se que os jovens mais novos são quem revela mais estratégias abusivas nas suas relações amorosas. Este resultado pode ser justificado na medida em que no início da jovem adultícia muitas vezes verifica-se uma instabilidade emocional que é transferida a partir das relações da infância e adolescência maladaptativas com as figuras significativas de afeto (Galambos et al., 2018; Leadbeater et al., 2017; Meeus et al, 2005; Monteiro et al., 2022; Mota & Rocha, 2012; Rollè et al., 2018). Assim, jovens adultos com menor maturidade emocional, insegurança e baixa autoconfiança verificam muitas vezes o recurso a maiores níveis de controlo do cônjuge e dificuldades na perceção ajustada das vivências em momentos de maior tensão nas suas relações de intimidade (e.g., Bisquert- Bover et al., 2019; Caridade et al. 2007; Martín-Salvador et al., 2021; Nascimento et al., 2018; Oliveira et al., 2016).

O sexo masculino apresentou uma maior predição nos comportamentos violentos. Este resultado já seria esperado, pelo que no sul da Europa os preconceitos e mitos face aos papéis de género nas relações amorosas descrevem a figura masculina enquanto dominadora e mais coersiva (e.g., Ahmadabadi et al., 2021; Amin et al., 2023; Barroso, 2017; Bisquert-Bover et al., 2019; Martín-Salvador et al., 2021). Assim, apesar do trabalho sob o paradigma dos preconceitos na sociedade atual (Barroso, 2017; WHO, 2023), pela vivência cada vez mais interativa, dependente e controladora dentro e fora das redes sociais (Schokkenbroek et al., 2022), verificamos que nos jovens adultos os conflitos nas relações amorosas se resolvem ainda maioritariamente através de estratégias abusivas particularmente no sexo feminino, e com comportamentos abusivos e violentes nos sexo masculino (e.g., Ahmadabadi et al., 2021; Amin et al., 2023; Bisquert-Bover et al., 2019; Machado et al., 2014).

Por último, observa-se que a resiliência assume um papel moderador positivo na associação entre a separação-individuação aos pais e os conflitos no namoro. Nesta medida, quando existe uma alta perceção de intrusividade na relação com a mãe, mas é moderada por uma elevada resiliência, observa-se um aumento das estratégias de resolução de conflitos não abusivas pelos jovens nas suas relações amorosas, comparativamente com a variável moderadora com uma baixa resiliência. Nesta medida, a resiliência reflete mais maturidade e potencia uma maior capacidade de reflexão face às adversidades, permitindo a resolução dos conflitos de forma construtiva e diminuir o uso abusivo na relação (Barreira & Nakamura, 2006; Grych et al., 2015; Korkmaz & Överlien, 2020). Por sua vez, observa-se que apesar de uma baixa autoconfiança na mãe, na presença de elevados níveis de resiliência, diminuem os comportamentos violentos, comparativamente com a existência de baixos níveis de resiliência. Desta forma, é possível observar que apesar dos processos de separação-individuação poderem apresentar condicionamentos na resolução de conflitos (e.g., Özbay & Aydogan, 2020), a presença de elevados níveis resilientes nos jovens atenua o desenvolvimento de comportamentos violentos nos jovens adultos (e.g., Grych et al., 2015; Korkmaz & Överlien, 2020). Destaca-se no presente estudo que uma maior resiliência pode associar-se a uma imagem positiva de si e maior responsabilidade na relação (Rutter, 2006), mostrando-se mais predispostos a lidarem com as práticas coercivas e intrusivas nas suas relações amorosas (Korkmaz & Överlien, 2020).

Implicações práticas, limitações e pistas futuras
A presente investigação demonstrou que o processo de separação-individuação aos pais alcançado com sucesso, reflete-se de forma positiva no desenvolvimento do processo resiliente. Observou-se ainda que este processo levado a cabo de forma ajustada traduz-se de forma positiva na prática de estratégias ajustadas e de forma negativa na aquisição de condutas abusivas e violentas nas relações de intimidade. Ao longo do processo de investigação verificaram-se algumas limitações inerentes ao estudo. Inicialmente, cabe ressaltar o facto de a presente investigação ser de caráter transversal, uma vez que impossibilita estabelecer relações de causa e efeito entre as variáveis. Como o método de recolha foram os questionários de autorrelato, este facto poderá ter conduzido a alguma desejabilidade social nas respostas. Importa salientar ainda a extensão do protocolo de investigação, que parece ser o principal fator responsável pela

exclusão de outliers. A presente investigação alerta para o impacto que a violência no namoro tem nos jovens adultos. Desta forma, seria interessante a utilização dos dados para a promoção de programas de prevenção no contexto educativo para promover competências pessoais de assertividade e autocontrolo, a fim de identificar de forma precoce os comportamentos abusivos, bem como ajudar a identificar e consciencializar para os vários estereótipos, preconceitos e descriminações que emergem associadas aos papéis de género. Este trabalho torna-se ainda útil face à sensibilização para a promoção de programas com vista ao desenvolvimento de estratégias de coping e regulação emocional para lidar com as adversidades dos jovens e pais. Assinalar também a relevância da realização de futuros estudos qualitativos com entrevistas a multi-informantes com o objetivo de compreender o desenvolvimento de estratégias abusivas e violência nas relações íntimas dos jovens. Seria também pertinente introduzir a variável vinculação aos pais e a vinculação amorosa (Hazan & Shaver, 1987) para uma melhor compreensão do desenvolvimento dos conflitos no namoro nas relações dos jovens adultos (e.g., Choe et al., 2022; Leadbeater et al., 2017). Por último, em futuras investigações seria pertinente alargar a faixa etária de modo a obter dados mais significativos entre os diferentes grupos de idade, nomeadamente numa abordagem longitudinal desde o início da adolescência à adultícia.

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DECLARAÇÃO DE CONTRIBUIÇÃO DE AUTORIA CRediT
Helena Morais: Concetualização; Curadoria dos dados; Análise formal; Investigação; Metodologia; Visualização; Redação do rascunho original. **Catarina Pinheiro Mota**: Concetualização; Curadoria dos dados; Análise formal; Aquisição de financiamento; Investigação; Metodologia; Administração do projeto; Recursos; Software; Supervisão; Validação; Visualização; Redação do rascunho original; Redação – revisão e edição.

Mapping personality markers in a Portuguese sample: The factor structure, reliability and incremental validity of the Big Five Mini-Markers

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Abstract: This study reports the psychometric characteristics of a Portuguese form of the 40-item Big Five Mini-Markers, relying upon a cross-sectional design with a sample of 673 Portuguese undergraduates from a Portuguese public university. Results supported the five-factor structure of the translated version and the internal consistency levels of the sub-scales were equivalent to the original version. However, nine items were identified as problematic and dropped from the analysis, due to low component loadings or relatively high cross-loadings. Further evidence from the remaining 31 items supported this instrument's incremental validity for predicting students' self-handicapping behaviours over previous academic achievement. Key implications for further research with the Portuguese version of this instrument are briefly presented and discussed.

Keywords: *Five-factor model; Academic performance; Self-handicapping.*

The relevance of the Big Five taxonomy as a useful model to map personality structure and comprising traits, and its potential to predict behavioural phenomena across achievement contexts and cultural settings is undoubted (Bainbridge et al., 2022; Stanek & Ones, 2018). In this domain, the Big Five Mini-Markers are a widely used instrument in research and applied settings, given their brevity and psychometric robustness (Mammadov, 2022; Thompson, 2008). Developed by Saucier (1994) as a short form of Goldberg's (1992) 100 unipolar adjective markers' measure of phenotypic personality traits, the Mini-Markers share the assumption that the Big Five factor structure can be uniformly captured through a small number of adjectives or markers, available within a given language lexicon, while preserving subscale orthogonality and reliability. Like other five-factor measures, the Big Five Mini-Markers (Saucier, 1994) assess the personality dimensions of conscientiousness (i.e. self-discipline, dependability, organisation), emotional stability (i.e. calmness, emotional adjustment, self-confidence), extraversion (i.e. sociability, activity, assertiveness), agreeableness (i.e. likeability, empathy, friendliness) and openness to experience (i.e. originality, imagination, intellectance).

Given its psychometric soundness across achievement contexts (see Ellen et al., 2022; Mammadov, 2022), this instrument belongs to a set of Big Five measures that have been identified in previous studies (e.g. Dwight et al., 1998; Saucier, 1994) and meta-analyses (i.e. McAbee & Oswald, 2013; Vedel, 2014) as particularly relevant to the academic setting. It is here that this study is developed, due to the validity of the Mini-Markers in predicting key academic outcomes, including student satisfaction and performance (operationalised as GPA, Grade Point Average). There are other instruments in the set for predicting GPA (see Mammadov, 2022; McAbee & Oswald, 2013): i.e. the NEO Personality Inventory - Revised (240-items, NEO-PI-R, Costa & McCrae, 1992); the NEO Five-Factor Inventory (60-item NEO-FFI, Costa & McCrae, 1992); the Big Five Inventory (BFI, 44-items, John et al., 1991; Soto & John, 2017); the Big Five Markers (100 unipolar markers, Goldberg, 1992); and the Big Five International Personality Item Pool (e.g. 100 and 50-item measures from the IPIP, Goldberg, 1999, see Goldberg et al., 2006, https://ipip.ori.org/index.htm). Although these have equivalent or even stronger merits, none of them outperforms the Mini-Markers (40 items, Saucier, 1994; Thompson, 2008) in maximising the brevity of administration (approx. 5 minutes), while maintaining fairly acceptable psychometric properties in terms of validity and reliability. Since respondents are often under time constraints in most assessment settings, these advantages are critical to enable the collection of personality ratings from multiple sources (i.e. self and observer ratings), to

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maximise survey space and to prevent response fatigue (Dwight et al., 1998; Ellen et al., 2022; Saucier, 1994; Soto & John, 2017).

Despite the Mini-Markers' acknowledged advantages, to the best of our knowledge, there is no previous Portuguese translation of its original English form. Therefore, the current study aimed to produce a Portuguese version of this instrument, following standard translation procedures (Brislin, 1986), and to examine its psychometric characteristics in the academic setting, using a large sample of Portuguese university students. Specifically, its factor structure, item adequacy and subscale reliability were assessed, along with its validity in predicting student performance (GPA), which is the most widely used objective indicator of student achievement and success (Bücker et al., 2018; Richardson et al., 2012). Compelling evidence from previous meta-analyses has shown that the Big Five framework and its measures make a relevant contribution, not redundant with cognitive ability, to the prediction of this criterion at the post-secondary or higher education level (Mammadov, 2022; Poropat, 2009; Richardson et al., 2012). Nonetheless, this contribution comes mostly from the factor of conscientiousness (.22 ≤ ρ ≤ .26), as openness and agreeableness show modest validity (ρ ≤ .10) and the corresponding validity of extraversion and emotional stability is approximately null (Mammadov, 2022; Richardson et al., 2012; Vedel, 2014).

To strengthen the contribution of the present study to the literature, in addition to the adaptation of the Big Five Mini-Markers and the focus on GPA for its validation in the Portuguese higher education context, this study also includes student self-handicapping as a further criterion, due to its implications for student success and well-being (Schwinger et al., 2022; Török et al., 2018; Urdan et al., 1998). Self-handicapping refers to maladaptive behavioural strategies used by students to avoid the self-esteem threat triggered by the anticipation of academic failure (Schwinger et al., 2014; 2022). Despite protecting students' self-esteem in the short term, the use of these strategies is self-injurious in the long run, due to their negative impact on academic adjustment, performance and well-being, by eliciting negative mood states, lower perceived competence, anxiety and substance abuse (Schwinger et al., 2022; Török et al., 2018; Zuckerman & Tsai, 2005).

As modelled by Schwinger et al. s' (2022) integrative theoretical framework of academic self-handicapping, previous positive performance/achievement represents an antecedent of self-handicapping. It acts as an indicator of students' perceived level of ability and favourable expectations of future performance, thereby reducing the potential perceived self-esteem threat and subsequent use of self-handicapping strategies. Similarly, personality factors, especially emotional stability (by mitigating concerns about one's own self-worth and social acceptance) and conscientiousness (by enacting a stronger expectancy of achievement success), are purported to play a critical role in suppressing students' self-handicapping propensity. Despite extant meta-analytic evidence (see Schwinger et al., 2022) supporting these effects, i.e. for prior academic performance (ρ = -.17), emotional stability (ρ = -.38) and conscientiousness (ρ = -.40), empirical research remains uninformative about whether each of these predictors yields an independent and meaningful contribution to the prediction of self-handicapping. Hence, this study intends to further contribute to the literature by examining the incremental validity of conscientiousness and emotional stability, operationalised through the Big Five Mini-Markers, over previous academic performance, in predicting this criterion.

METHOD

Participants and procedure

This study was conducted using a cross-sectional design and a convenience sample of 673 undergraduates from a Portuguese public university. Prior to data collection, approval to conduct this research was obtained from the scientific committee of the department of psychology, confirming adherence to the ethical standards for research in psychology, the 1964 Helsinki Declaration, and its subsequent amendments, or comparable ethical standards.

Students volunteered to participate and provided the respective informed consent, with no incentives for their participation, under the guarantee of data anonymity, confidentiality, and exclusive use for research purposes. At the end of the semester, after the academic assessment period, the participants completed a Portuguese version of all the scales, which had previously been developed following standard translation procedures (Brislin, 1986). All scales were included in a paper-and-pencil questionnaire, administered by the research team during class time with teachers' permission. Specifically, students were asked to rate the frequency with which they had exhibited self-handicapping behaviours during the current semester; whereas for academic performance, they were instructed to report their last semester's GPA as an operationalization of previous academic achievement. Participants took an average of 12-16 minutes to complete the survey. The sample was 54.7% female and 45.3% male, with a mean age of M = 21.24 (SD = 4.52), ranging from 17 to 56 years. It was composed of 30.7% first-year, 25.6% second-year and 43.7%

third-year students from various university degrees, including psychical education and sport (14%), computer and informatic engineering (12.3%), languages and business relations (11.6%), biochemistry (11.2%), education sciences (9.3%), psychology (7.9%), communication, culture and organizations (7.8%), design (7.0%), management (6.2%), economics (6.2%), nursing (3.4%) and medicine (3.1%).

Measures

Big Five. As noted, the Big Five was assessed with Saucier's (1994) 40-item set of Mini-Markers, a short form of Goldberg's (1992) 100 unipolar adjective markers of the Big Five factor structure of personality, consistently found in previous research (see Bainbridge et al., 2022; Stanek & Ones, 2018, for a review). As reported by Saucier (1994) and Dwight et al. (1998), the original English version of the Big Five Mini-Markers has sound psychological properties, for a short form, as it effectively reproduces the expected/accepted five-factor structure, by sampling a set of adjectives that are more closely aligned with the core prototypical features of each Big Five, compared to the 100 Big Five markers (Goldberg, 1992). In terms of reliability, the Big Five Mini-Markers show lower levels of internal consistency (.78 to .83) than the larger marker set (.84 to .90). This is often the case with abbreviated inventories, but the levels of internal consistency obtained are quite acceptable according to recommended research standards (Nunnally, 1978). Participants of the current study completed the Portuguese version of this instrument using a 5-point Likert-type scale, ranging from 1 = *extremely inaccurate* to 5 = *extremely accurate*.

Academic performance (previous achievement). Consistent with previous meta-analytic research (Mammadov, 2022; Richardson et al., 2012), this construct was measured using students' GPA. During the data collection sessions, respondents were asked to report their cumulative GPA up to the last semester after checking their academic transcripts, available online. It ranged from 10 to 20 scores, with 10 being the minimum score for passing a subject in the Portuguese Higher Education System, with a higher score indicating a better grade average. Previous meta-analytic research indicates that self-reported GPA, although susceptible to self-distortion, is highly correlated with official GPA ($r = .90$, see Kuncel et al., 2005), making it a reliable proxy, when access to university formal records is not attainable or may compromise the anonymity of the survey (Islam et al., 2018).

Self-handicapping. This construct was assessed using Urdan et al.'s (1998) 6-item Academic Self-Handicapping Scale (ASHS), which is a commonly used instrument for measuring this variable (see Schwinger et al., 2022). Prior research has reported exploratory and confirmatory evidence indicating that these items are reflective indicators of a single construct of self-handicapping, as well as internal consistency estimates that support adequate levels of reliability for this scale (Török et al., 2018; Urdan et al., 1998). Participants were instructed to rate a Portuguese version of this scale, built for the current study, indicating how true each item was for them during the current semester, using a 5-point Likert scale where 1=*not true at all* and 5=*very true*. An example item was "Some students put off doing their academic work until the last minute so that if they don't do well, they can say that is the reason. How true is this of you?" In line with cumulative research, a confirmatory analysis carried out on the present sample showed that the hypothesised one-factor measurement model displayed a good level of fit (Hu & Bentler, 1999) to the data (χ^2 [9, $N = 673$] = 31.73, $p = .001$, CFI = .973, TLI = .956, RMSEA = .061, SRMR = .031). Cronbach's alpha was .77.

Control variables. Students reported socio-demographic data on sex, age, academic year, and socio-economic status, given the potential non-trivial impact of these variables on prior achievement and self-handicapping (Islam et al., 2018). Their parents' average level of educational attainment was used as a feasible indicator of students' socio-economic status (Dickinson & Adelson, 2014).

RESULTS

Factor structure and reliability

To allow a more accurate comparison of results, the same analytic strategy employed by Saucier (1994) in the development of the Mini-Markers was followed, consisting of submitting the 40 items to a principal component analysis, with varimax rotation. Analyses were performed using IBM SPSS (version 27) for Windows. A value of KMO = .82 was obtained and Bartlett's test of sphericity [$\chi^2_{(780)}$ = 9018.07, $p < .001$] reached statistical significance supporting the factorability of the data and the adequacy of the sample, respectively (Tabachnick & Fidell, 2019). Consistent with the theoretical framework of this instrument, the scree test and a parallel analysis for the 95th percentile in 1000 random samples (Horn, 1965; O'Connor,

2000) suggested the retention of a five-component solution accounting for 44.31% of the total variance. Most items showed appropriate loadings in the expected component. Yet, nine items were signalled as problematic, since they displayed relatively equivalent loadings in more than one component (*Practical*, *Efficient and Systematic* for conscientiousness, *Unenvious* and *Relaxed* for emotional stability, *Cooperative* for agreeableness and *Bashful* for extraversion) or showed very low component loadings (*Complex* for openness and *Envious* for emotional stability).

Thus, these items were dropped from the solution and analyses were repeated with the remaining 31 items. Applying the same criteria for component retention (i.e. scree test and parallel analysis), results effectively reproduced the specified Big Five factorial structure explaining 50.75% of the total variance and showed a clean and appropriate pattern of item loadings on the respective components (See Table 1). Moreover, with the exception of *Inefficient* and *Jealous*, all the items showed rather low cross-loadings (< .28) and met Saucier's (1994) narrow criterion of item purity (p. 509), i.e. a factor-pure adjective "not only has its highest loading on the expected factor but also had a loading on that factor that was at least double the loading on any other factor". Overall, conscientiousness and emotional stability subscales showed a greater number of dropped items with three items each, whereas extraversion, agreeableness and openness subscales only lost one item each. The mean interscale correlation of .15 obtained for this subset of items was somewhat higher but close to the analogous value of .11 reported by Saucier (1994), suggesting subscale orthogonality.

Table 1. Factor loadings from principal components analysis of the Portuguese version of Big Five Mini-Markers, using varimax rotation.

Items: English (original)/Portuguese	EX	A	C	OP	ES
Extroverted/*Extrovertido*	**.78**	-.06	-.05	.07	.04
Quiet/*Calado*	**-.77**	.03	-.02	.06	.02
Shy/*Tímido*	**-.73**	-.06	.10	.01	.27
Withdrawn/*Reservado*	**-.68**	.01	-.03	.04	.23
Talkative/*Falador*	**.68**	-.02	.08	.06	.27
Energetic/*Enérgico*	**.62**	-.14	-.10	.14	.04
Bold/*Desinibido*	**.59**	.11	.01	.13	-.04
Rude/*Desagradável*	.10	**-.69**	-.17	-.11	-.23
Harsh/*Indelicado*	-.02	**-.69**	-.22	-.07	-.23
Kind/*Gentil*	.06	**.66**	.11	-.23	-.16
Unsympathetic/*Insensível*	.04	**-.66**	-.08	.11	-.17
Cold/*Frio*	.02	**-.59**	-.02	-.06	-.18
Warm/*Afetuoso*	-.12	**.55**	.11	-.20	-.28
Sympathetic/*Compreensivo*	.08	**.55**	.08	-.17	-.21
Disorganized/*Desorganizado*	.00	-.09	**-.85**	-.09	-.04
Organized/*Organizado*	-.01	.06	**.83**	-.05	-.11
Sloppy/*Desleixado*	.06	-.20	**-.75**	.00	-.12
Careless/*Descuidado*	-.07	-.12	**-.71**	.03	-.14
Inefficient/*Ineficiente*	.18	-.29	**-.48**	.10	-.17
Creative/*Criativo*	.19	-.06	-.11	**.68**	-.06
Imaginative/*Imaginativo*	.21	-.13	.04	**.66**	.15
Intellectual/*Intelectual*	.00	.02	.08	**.64**	-.03
Uncreative/*Não criativo*	-.05	.16	.09	**-.60**	.24
Philosophical/*Filosófico*	.01	.14	.06	**.58**	.11
Unintellectual/*Não intelectual*	.02	.06	.00	**-.55**	.25
Deep/*Reflexivo*	-.10	-.23	-.11	**.54**	.16
Fretful/*Nervoso*	.18	.24	-.06	.09	**-.67**
Jealous/*Inseguro*	.33	.16	-.18	.07	**-.66**
Moody/*Instável*	.07	-.21	-.20	-.06	**-.64**
Touchy/*Ressentido*	-.04	-.20	-.06	.06	**-.63**
Temperamental/*Temperamental*	-.22	-.19	.11	.00	**-.58**

Table 1. (Continued)

Empirical eigenvalue	4.88	3.69	2.94	2.31	1.91
Random eigenvalue	1.49	1.44	1.40	1.36	1.33
% of variance explained	15.73	11.91	9.48	7.46	6.17

Note. N = 673. Random eigenvalues were estimated by parallel analysis for the 95th percentile in 1000 random samples.

Regarding reliability, Cronbach's alphas, albeit lower, were almost equivalent to those obtained by Saucier (1994) with the original form of this instrument (specifically, .81 vs .83 for extraversion, .81 vs .83 for conscientiousness, .77 vs .81 for agreeableness, .73 vs .78 for openness and .72 vs .78 for emotional stability). Further results concerning final solution item statistics and scale reliability are summarised in Table 2.

Table 2. *Scale*/Item descriptive and reliability statistics of the Portuguese version of Big Five Mini-Markers.

Scale/Item	*M*	*DP*	r_t	Alpha if item deleted	α
Extroversão (*Extraversion*)					.81
Extrovertido	3.15	1.14	.69	.76	
Calado	3.03	1.20	.65	.77	
Tímido	2.99	1.22	.64	.77	
Reservado	3.26	1.11	.41	.81	
Falador	3.18	1.13	.51	.79	
Enérgico	3.53	0.97	.49	.80	
Desinibido	2.87	1.25	.46	.80	
Amabilidade (*Agreeableness*)					.77
Desagradável	1.60	0.81	.54	.73	
Indelicado	1.83	0.94	.57	.72	
Gentil	3.97	0.83	.54	.73	
Insensível	1.95	0.97	.54	.73	
Frio	2.34	1.19	.44	.76	
Afetuoso	3.62	0.91	.45	.75	
Compreensivo	4.09	0.75	.39	.76	
Conscienciosidade (*Conscientiousness*)					.81
Desorganizado	2.42	1.25	.71	.74	
Organizado	3.53	1.07	.65	.76	
Desleixado	2.08	1.08	.66	.76	
Descuidado	2.34	1.14	.57	.78	
Ineficiente	1.86	0.88	.41	.81	
Intelecto/Abertura à Experiência (*Intellectance or Openess*)					.73
Criativo	3.54	0.96	.54	.68	
Imaginativo	3.61	1.00	.53	.68	
Intelectual	3.27	0.90	.44	.70	
Não criativo	2.28	1.20	.49	.69	
Filosófico	2.63	1.21	.37	.72	
Não intelectual	2.38	1.12	.40	.71	
Reflexivo	3.80	0.96	.37	.68	
Estabilidade Emocional (*Emotional Stability*)					.72
Nervoso	3.41	1.18	.52	.66	
Inseguro	3.03	1.24	.54	.65	
Instável	2.36	1.09	.52	.66	
Ressentido	2.33	1.07	.36	.71	
Temperamental	2.85	1.12	.46	.68	

Notes. r_t = item-total correlation. All items' minimum and maximum values were 1 and 5, respectively.

Criteria-related and incremental validity

Table 3 summarises the correlations observed between the variables under study. Consistent with previous meta-analytic evidence, conscientiousness and openness emerged as significant predictors of academic

performance in the current sample (Mammadov, 2022; Vedel, 2014). Emotional stability also emerged as a significant predictor of this criterion in the current sample, albeit the respective link showed a comparably lower magnitude. Despite being identified as a valid, but modest, predictor of GPA in cited meta-analyses, agreeableness was not significantly linked with this criterion in our study, although the observed effect size was equivalent ($r = .08$). Results were also aligned with recent meta-analytic findings for self-handicapping (see Schwinger et al., 2022), given that the factors of conscientiousness and emotional stability (albeit with comparatively lower observed estimates), as well as previous academic achievement (i.e. GPA), emerged as significant predictors of this criterion. In addition, students' academic year and agreeableness established negative and significant correlates with this variable.

Table 3. Means, standard deviations and zero-order Pearson correlations.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Sex[a]	--	--	--										
2. Age	21.24	4.52	-.11**	--									
3. Year	2.13	0.85	-.03	.24***	--								
4. SES	2.96	1.20	-.12**	-.18**	-.05	--							
5. ES	3.20	0.78	-.27***	.07	.00	-.07	--						
6. EX	3.16	0.77	.01	.06	.01	.02	.20***	--					
7. A	3.99	0.60	.13**	.01	-.02	.00	.13**	.06	--				
8. C	3.76	0.82	.29***	-.02	.01	-.07	.20***	.10**	.35***	--			
9. OP	3.45	0.65	-.13**	.01	.00	.10*	-.07	.14***	.20***	.08	--		
10. GPA	13.90	1.88	.10*	-.17***	-.24***	.09*	.10*	.03	.08	.18**	.18**	--	
11. SH	2.05	0.67	-.07	-.01	.09*	-.03	-.12**	-.02	-.13*	-.30***	.06	-.18**	--

Note: $N = 673$. M = Mean, SD = Standard Deviation. [a]Male = 0, Female = 1. Year = Academic year, SES = Socio-economic status, ES = Emotional stability, EX = Extraversion, A = Agreeableness, C = Conscientiousness, OP = Openness, GPA = Grade point average, SH = Self-handicapping. *$p < .05$. **$p < .01$. ***$p < .001$.

Results of hierarchical regression analysis to examine whether and to what extent these personality factors, as measured by the Mini-Markers, show incremental validity over GPA are reported in Table 4. Students' academic year was included in the first step of the analysis, given its link with the criterion. As shown, in step 2, GPA yields a significant contribution to predicting self-handicapping. Moreover, in line with our expectations, adding emotional stability, agreeableness, and conscientiousness to the model in step 3 produces a significant increase of approximately 8% in this criterion variance ($\Delta R^2 = .075$, $p < .001$), yet this increase is exclusively produced by conscientiousness.

Table 4. Incremental validity analyses of the Big Five for predicting self-handicapping, over previous academic achievement.

Independent variables	R	R^2	R^2_{adj}	F_{change}	ΔR^2	β	B	SE	95% CI
				Self-handicapping					
Step 1	.090*	.008	.007	5.49*	---				
Academic year						-.090*	-.057	.024	[-.105, -.009]
Step 2	.225***	.051	.048	29.96***	.042***				
Previous academic achievement						-.212***	-.061	.011	[-.083, -.039]
Step 3	.354***	.125	.119	18.98***	.075***				
Emotional stability						-.052	-.036	.026	[-.086, .014]
Agreeableness						-.028	-.025	.035	[-.093, .043]
Conscientiousness						-.252***	-.166	.026	[-.217, -.114]

*Note*s. $N = 673$. *$p < .05$. ***$p < .001$.

DISCUSSION

This paper reports the results of the psychometric assessment of the first Portuguese translation of the 40-item Big Five Mini-Markers (Saucier, 1994), using a sample of university students. The evidence supports its five-factor structure and indicates that a significant number of its items fulfil factor purity criteria. This suggests that these adjectives, already mapped in the English language as effective markers of the Big Five

(Goldberg, 1992; Saucier, 19994), also seem to hold that status in the Portuguese language. Yet, analyses also signalled a set of nine problematic items in the Portuguese translation, specifically one in the subscales of extraversion, agreeableness and openness, and three items each in the subscales of conscientiousness and emotional stability. These findings point to the need to make additional efforts to identify alternative markers, e.g. through a complementary qualitative approach (see Thompson, 2008), to avoid potentially unfamiliar and ambiguous adjectives in the Portuguese context, such as *Complex, Practical and Bashful*, as well as those with a particularly negative meaning in terms of social reputation in Portuguese culture, such as *Envious.* Collectivism is a characteristic of Portuguese culture, which is manifest in a tendency to close and long-term orientation to groups' membership. Unlike an individualistic culture, belonging to groups and loyalty to the other members are core values (Hofstede, 2001; Hofstede-insights, 2023). Despite of the scarcity of literature on the values of university students, previous findings support the role of collectivism as a Portuguese cultural dimension, suggesting that they tend to value getting along with others and being respectful, tolerant, and loyal in social relationships (Marques et al., 2020). Portuguese culture also scores low in the masculinity dimension, which means that excessive competitiveness is not appreciated; standing out from the crowd is not especially desired and more than being the best, it is important to like what you do (Hofstede, 2001; Hofstede-insights, 2023). These Portuguese cultural orientations may generate avoidance of self-perceiving some characteristics, such as envy.

Despite dropping these items from the final solution, a five-factor solution emerged with subscales that preserve levels of internal consistency close to those reported for the original version. This suggests that some advancements have been made towards the development and validation of a Portuguese version of the Big Five Mini-Markers. Accordingly, the convergence of our findings with previous meta-analyses indicating the Big Five, as assessed by this instrument, are valid predictors of academic performance (Mammadov, 2022; Richardson et al., 2012, Vedel, 2014) and self-handicapping (Mammadov, 2022; Richardson et al., 2012, Vedel, 2014) seems to support this conclusion. Specifically, conscientiousness and openness emerged as positive predictors of academic performance, whereas conscientiousness, emotional stability and agreeableness emerged as negative predictors of self-handicapping. Although the observed estimates of some of these effects obtained with the Mini-Markers in the current sample are somewhat lower than the analogous ones reported by more recent meta-analyses, for example for the effects of conscientiousness on academic performance ($r = .18$ vs. $\rho = .26$ from Mammadov, 2022) and self-handicapping ($r = -.30$ vs. $\rho = -.40$ from Schwinger et al., 2022), they appear to capture a similar pattern of findings. For the link between emotional stability and self-handicapping, the validity loss is more pronounced, ($r = -.12$ vs. $\rho = -.38$ from Schwinger et al., 2022). However, this loss of validity for the prediction of both criteria is not as marked as it might appear, as the reported correlations are to some extent underestimated because, unlike corresponding meta-analytic estimates, they are not corrected for attenuation.

While reduced validity and reliability are expected from the reliance on brief measures (see Ellen et al., 2022), future research is still needed with other abbreviated inventories of the Big Five available in the Portuguese language, like the NEO-FFI (60 items, Costa & McCrae, 1992; Magalhães et al., 2014) and the Mini-IPIP (20 items, Donnellan et al., 2006, Oliveira, 2019) to compare their psychometric virtues with those of the Mini-Markers. As noted, regarding reliability, the alpha's estimates of the Mini Markers' scales obtained in the current sample (ranging from .73 to .81) were similar to the original version, being equal or higher (with the sole exception of emotional stability when measured with the NEO-FFI) than the corresponding estimates reported by Magalhães et al. (2014) and Oliveira (2019) for the respective Portuguese versions of the NEO-FFI (ranging from .71 to .81) and of the Mini-IPIP (ranging from .67 to .80). For criterion-related validity, additional studies are needed to compare the potential of the Portuguese version of the Mini Markers with alternative versions of other Big Five inventories, using key academic, work and health outcomes, such as relevant performance and well-being criteria (Anglim et al., 2020; Mammadov, 2022; Stanek & Ones, 2018).

Beyond its implications for the adequacy of the Mini-Markers in measuring the Big Five personality factors in the Portuguese context and its predictive validity regarding academic performance and self-handicapping, this study also contributes to the literature on the combined influence of personality and prior achievement on students' self-handicapping behaviour. Specifically, our findings indicate that the influence of conscientiousness in detracting from self-handicapping behaviours occurs independently of the effect of students' previous achievement. Thus, they support the acknowledged role of this personality dimension as a protective factor for students (Schwinger et al., 2022) but extend the understanding of the antecedents of self-handicapping by suggesting that more conscientious students are less prone to adopt self-handicapping strategies, even in situations of prior underachievement.

From an applied perspective, our findings support the use of the Portuguese version of the Mini-Markers for personality assessment and screening purposes to prioritise psychoeducational interventions

for college students with low levels of scores in conscientiousness, given the significant impact of this factor on academic performance and self-handicapping. Previous research has shown that interventions focused on enhancing the study of students' motivation, engagement and commitment to the university are effective in mitigating their propensity to self-handicapping (Martin, 2005; Török et al., 2018).

Despite the aforementioned contributions, the current study has some limitations, particularly its reliance upon an objective measure of academic performance (GPA) and students' self-ratings of self-handicapping, which are vulnerable to deliberate distortion. Further studies should add peer and teacher ratings of student performance and self-handicapping to capture an expanded criteria domain allowing a more complete picture of the impact of personality on these key student behaviours (Islam et al., 2018; Oswald et al., 2004; Vedel & Poropat, 2017).

In conclusion, the Portuguese version of the Big Five Mini-Markers, despite being composed of fewer personality markers, displayed reasonably adequate psychometric characteristics and stands as a promising personality assessment instrument that deserves future research towards its refinement. Additional efforts are needed to identify alternative markers through a complementary qualitative approach, as already mentioned. Apart from this, further research including invariance studies using different samples and behavioural criteria, such as those related to social, organisational and sports settings, is crucial for a comprehensive assessment of the psychometric merits of this instrument for the Portuguese context.

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CRediT AUTHORSHIP CONTRIBUTION STATEMENT

ACKNOWLEDGMENTS

Protean Career Orientation Scale: A validation study with Portuguese university students

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Abstract: The protean career orientation refers to career agentic and values-driven attitudes in today's changing contexts. This orientation shows readiness for facing lifespan tasks and challenges in diverse work roles, contributing, for example, to university students' academic engagement and employability. Given the importance of this construct, there is a need for valid and reliable measures of protean career orientation. Our study aimed to analyze the internal and criterion-related validity and reliability of a Portuguese language version of the Protean Career Orientation Scale. Participants were 407 Portuguese university students who responded to measures of protean career orientation, academic engagement, and career self-management strategies. Factorial analyses, Pearson correlations, and reliability indicators were computed. Adequate psychometric properties were found after one item deletion. Findings provide evidence for the scale's usage among groups of university students, whether for research or practical purposes. Nevertheless, more studies are needed.

Keywords: Protean orientation; Psychometric properties; University students; Assessment.

Protean career orientation is defined by Hall et al. (2018, p.134) as "a career attitude with two important dimensions, a focus on self-direction and an orientation toward intrinsic values". According to them, self-direction refers to one's agency and volition to pursue career goals, and intrinsic values provide meaning to the pursuit. In other words, a protean individual will be involved in a process of meaning-making (identity), response to change (adaptability), and intentional decision-making (agency), which fosters several career outcomes. For example, employability outcomes (e.g., job offers), career satisfaction, career self-management behaviors (e.g., networking), occupational and decision-making self-efficacy, and organizational commitment, among others (e.g., Baruch, 2014; Chui et al., 2020; Cortellazzo et al., 2020; Kaur & Kaushik, 2020; Stauffer et al., 2019). In the contemporary career literature overall, protean career orientation has been conceptualized as a goal-oriented, intrinsic motivational factor, which indicates the level of personal readiness to face whole-life career challenges, whether in a career role of citizen, student, worker, or others (e.g., Hirschi & Koen, 2021; Hirschi et al., 2020).

As a result, we may argue that this agentic orientation is crucial for adapting in today's changing contexts (e.g., Briscoe & Hall, 2006; World Economic Forum, 2020), including facing academic challenges (e.g., vocational, social) (e.g., Álvarez-Pérez & López-Aguilar, 2020; Gazo et al., 2019). According to the literature, more adapted students are also more satisfied and successful individuals, which enables better preparation for the labor market transition (e.g., Gazo et al., 2019; Kaur & Kaushik, 2020; Yıldız-Akyol & Öztemel, 2021). For example, Kim et al. (2023), found that adopting a protean career orientation predicts youth academic commitment and performance, as well as perceived future employability. Therefore, developing a protean career orientation during the academic journey is an asset. However, we need valid and reliable measures to access students' level of protean career orientation to better understand and explain the role of protean career orientation for life-career success and well-being.

Protean career orientation measures: An overview
Briscoe et al. (2006) played a key role in developing the first protean career measure, the Protean Career Attitude Scale (PCAS). This scale comprises two dimensions. The values-driven dimension is characterized by the individual's willingness to achieve a career path in line with personal values. The other, the self-directed dimension, is characterized by the individual's proactivity in gathering information, developing goals, and making career decisions. Despite PCAS usefulness in extending studies on the subject, several problems have arisen regarding its validity and psychometric qualities. For example, one study with Spanish people (Enache et al., 2012) and another with South Africans (de Bruin & Buchner, 2010) highlight

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the ambiguity of PCAS values-driven dimension. According to these authors, most of the items in this dimension assumed that personal values and those of the company were opposites (e.g., de Bruin & Buchner, 2010; Enache et al., 2012; Gubler et al., 2014). Moreover, Gubler et al. (2014) argued that only item 1 from PCAS self-directed dimension correctly mirrored this dimension definition.

Further criticism of PCAS includes its lengthy size (Baruch, 2014; Porter et al., 2016) and the absence of items conveying career issues of youth with little or no work experience (Borges et al., 2015). In response, Porter et al. (2016) suggested a shorter measure that includes 7 of the 14 PCAS items. Meanwhile, Baruch (2014) proposed a new 7-item unidimensional measure, the Protean Career Orientation Scale (PCOS). As for extending PCAS to other career realities, Borges et al. (2015) suggested rewriting some items and adding others, resulting in a 20-item version. Nevertheless, recalling the ambiguity of the PCAS values dimension (de Bruin & Buchner, 2010; Enache et al., 2012), Baruch's proposal is the most promising. For instance, a recent meta-analysis developed by Kostal and Wiernik (2017) indicates that the most commonly used measures to assess one's protean career orientation are the Briscoe et al. (2006) PCAS and the Baruch (2014) PCOS. Nevertheless, other measures are also covered by the literature (e.g., Direnzo et al., 2015; Kruanak & Ruangkanjanases, 2014). However, these alternatives include items designed to respond to each study's goals, which limits a broader use. For example, Kruanak and Ruangkanjanases's (2014) protean career orientation measure includes items such as "I believe that having international experience is essential for my subsequent career success", which may not be suitable for individuals without international experience.

As a result, this metric heterogeneity may hinder the comparison and interpretation of different empirical studies on protean orientation (Gubler et al., 2014). Therefore, instead of proposing a new measure addressing Briscoe et al.'s (2006) weaknesses, we will consider the 7-items measure presented by Baruch (2014). This scale considers the original unidimensional definition of the protean career orientation construct (Hall, 1976), which answers the PCAS values-driven problems (e.g., Enache et al., 2012), making the measure less ambiguous. As a result, Baruch's measure could be a reasonable alternative for the short-bidimensional PCAS version proposed by Porter et al. (2016). Another aspect to highlight from the Baruch measure is that items do not seem to be exclusive to a specific, already developed career path (Cortellazzo et al., 2020). Therefore, Baruch also considers Borges et al.'s (2015) warning, increasing the measure's usability among different contexts and populations.

Baruch's measure has shown good psychometric qualities among workers and university students from different countries. In his initial study specifically, Baruch (2014) integrated several samples of French students and English and Chinese workers. In these studies, the author found reliability indices above .70, and significant correlations of the measure with other constructs (e.g., organizational commitment, job satisfaction, performance). The same was later found for German university students (Herrmann et al., 2015) and Chinese employees (Ngo & Hui, 2018). Apart from measuring reliability, these authors also verified significant correlations with other constructs, such as career planning, work engagement, and self-efficacy. Meanwhile, Cortellazzo et al. (2020) considered the 5-items version, which does not include item 2 of employability nor item 3 of job search. According to Baruch (2014), these items can be excluded whenever the purpose of the study warrants it. Nevertheless, Cortellazzo et al. (2020) also found a reliability index above .70 in a sample of Italian university students. We may, therefore, conclude that the Baruch scale is reliable and presents good criterion-related validity across different occupational and cultural groups. However, data on its internal validity is still scarce. To our best knowledge, only a Brazilian study has explored the internal structure of the measure (Andrade et al., 2022). According to the authors, after the 2 item exclusion (i.e., items 1 and 3) and model re-specification (i.e., error correlation impositions), adequate fit indicators were verified ($\chi2/df = 4.90$, RMSEA = .11, TLI = .92, and CFI = .92), supporting PCOS unidimensionality. Nevertheless, considering the psychosocial nature of the protean career orientation construct (Hall et al., 2018), further cross-cultural studies are needed. Analyzing the scale's behavior in countries that share the same language but not the same culture may thus be especially relevant. For example, while Brazil presents characteristics of a developing economy, Portugal presents characteristics of a developed economy (Institute for Economics & Peace, 2022; United Nations, 2022). This may influence how a career is portrayed.

The study's aims and hypotheses
Accordingly, we propose to extend the study of 7-items PCOS to a sample of Portuguese university students. We believe this will extend knowledge of its psychometric qualities, as well as the literature on protean orientation among university students.

For that purpose, we will evaluate the measure's (1) factorial structure, (2) reliability, (3) convergent, and (4) concurrent validity. An (H1) unidimensional structure and (H2) acceptable reliability indices are expected. Regarding measure convergent validity, the Portuguese version of PCAS (Briscoe et

al., 2006; Marques, 2017) will be used, expecting (H3) significant correlations between the constructs. Namely with the self-directed dimension (Hall et al., 2018). As for the concurrent validity, one measure of academic engagement and another of career strategy will be used. The first measure was chosen based on the rationale that individuals capable of making an autonomous and enlightened career decision would be willing to invest time and energy in their career construction (Ngo & Hui, 2018). The second measure was chosen based on the rationale that individuals with a clear sense of personal identity and flexibility to respond to a volatile environment will more easily engage in personal career management behaviors (e.g., networking) (Kaur & Kaushik, 2020). Therefore, (H4) significant correlations for the concurrent validity analysis are also expected.

METHOD

Participants
Participants were recruited through a convenience sampling technique. In line with the study's goals, two samples were created. Sample A included participants that voluntarily responded to the protean career measure. Sample B included participants that voluntarily responded to the entire protocol.

Sample A comprised 119 Portuguese university students. The majority were women (n = 95, 79.8%) aged 18 to 37 (M = 21.08, SD = 3.28). 110 (92.4%) were Caucasian; 1 (0.8%) Black and 8 (6.8%) identified with another ethnicity. Regarding the type of education, 89 (74.8%) were studying in university education and 30 (25.2%) in polytechnic education. All institutions were from the North to the South of Portugal. At the time of the survey, the participants were attending the following higher education programs: 26 (21.8%) were in Social Sciences, Journalism and Information; 25 (21%) in Business, Administration and Law; 21 (17.6%) in Natural Sciences, Mathematics and Statistics; 17 (14.3%) in Health and Welfare; 15 (12.6%) in Engineering, Manufacturing and Construction; 10 (8.4%) in Arts and Humanities; 2 (1.7%) in Agriculture, Forestry, Fisheries and Veterinary Medicine; 2 (1.7%) in Education; and 1 (0.8%) in Information and Communication Technologies. Among the 119 students, 19 (16%) combined studying with working, and of these only 3 (2.5%) had the working student's status.

Sample B comprised 288 Portuguese university students. The majority were women (n = 224, 77.8%) aged 18 to 61 (M = 21.53, SD = 4.39). 275 (95.5%) were Caucasian, 3 (1%) Black and 10 (3.5%) identified with another ethnicity. Regarding the type of education, 183 (63.5%) were studying in university education and 105 (36.5%) in polytechnic education. All institutions were from the North to the South of Portugal, including The Azores. At the time of the survey, the participants were attending the following educational programs: 71 (24.7%) were in Health and Welfare; 55 (19.1%) in Social Sciences, Journalism and Information; 52 (18.1%) in Business, Administration and Law; 48 (16.7%) in Natural Sciences, Mathematics and Statistics; 24 (8.3%) in Arts and Humanities; 16 (5.6%) in Engineering, Manufacturing and Construction; 13 (4.5%) in Agriculture, Forestry, Fisheries and Veterinary Medicine; 7 (2.4%) in Education; and 2 (0.7%) in Information and Communication Technologies. Among the 288 students, 57 (19.8%) combined studying with working, and of these only 21 (7.3%) had the working student's status.

Samples A and B were used for exploratory and confirmatory factor analyses, respectively. Although demographic differences were observed between samples, there were no statistically significant differences between samples' protean career orientation total scores, t (405) = .709, p = .479. This finding provided the confidence to proceed with the analyses.

Measures
Protean career orientation was accessed by two measures. First, the Protean Career Orientation Scale (PCOS) from Baruch (2014) that includes 7 items (e.g., "I am in charge of my own career"). Although the original measure features a 7-point response scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), Baruch (2014) also considered a 5-point scale as an alternative. Therefore, a 5-point scale was preferred based on the following rationale: (1) no significant reliability and validity increments are verified when the number of alternatives exceeds 5; (2) this rating scale also includes a middle point as the 7-point scale; (3) the smaller number of options makes it easier and faster for the participants to respond; and (4) this decision allows us to reduce the protocol's response variability, considering the remaining scales (Vieira & Dalmoro, 2008).

Second, we applied the Portuguese version of the Protean Career Attitudes Scale (PCAS, Marques, 2017). It includes 14 items distributed by 2 factors: the self-directed career management factor includes items 1 to 8 (e.g., "Overall, I have a very independent, self-directed career."), and values-driven includes items 9 to 14 (e.g., "I navigate my own career, based on my personal priorities, as opposed to my employer's priorities."). The response is given in a 5-point Likert scale ranging from 1 (*to little or no extent*) to 5 (*to a*

great extent). Marques (2017) found good reliability indices (0.75 < α < 0.83). The same was verified for the present study (.66 < α < .77).

The academic engagement was accessed with the Portuguese version of the Utrecht Work Engagement Scale for Students (UWES-S, Cadime et al., 2016). This scale comprises 14 items distributed by 3 factors: absorption with 6 items (e.g., "I can get carried away by my studies."), vigor with 6 items (e.g., "When I get up in the morning, I feel like going to class."), and dedication with 5 items (e.g., "My studies inspire me."). The response is given in a 7-point Likert scale ranging from 0 (*never*) to 6 (*every day*). Cadime et al. (2016) found good reliability indices (.82 < α < .86). The same was verified for the present study (.86 < α < .94).

The career self-management strategies were accessed by the Portuguese version of the Career Strategies Inventory (CSI, Matias, 2013). This inventory comprises 14 items distributed by 4 factors: networking with 4 items (e.g., "Built a network of contacts within the division for obtaining information about events, changes, or activities within the division"), creating opportunities with 3 items (e.g., "Tried to develop skills which may be needed to attain your career goal"), self-nomination with 3 items (e.g., "Make my supervisor aware of your accomplishment"), and sought career guidance with 4 items (e.g.," Discussing my career interests with others"). The response is given in a 5-point Likert scale ranging from 1 (*to a very small extent*) to 5 (*to a very large extent*). Matias (2013) found good reliability indices (.77 < α < .93). The same was verified for the present study (.66 < α < .92).

Procedure

Consent for the measure's validation was obtained, followed by the analysis and translation of the items by two bilingual (Portuguese-English) researchers, both familiar with the measure. Afterwards, the items were back-translated from Portuguese to English by a third bilingual, external to the study, and with English language training. This last version was presented and discussed with Baruch, who approved the translation (items formulation in Appendix A.). The research protocol, approved by the Ethics Committee for Research in Social Sciences and Humanities (CEICSH 093/2021), was then built on SPSS Data Collection. Confidentiality and anonymity were guaranteed, and the study's aim was presented at the beginning of the research protocol. The estimated completion time for the protocol was 10 minutes. Data collection took place between November 2020 and February 2021 and included two phases. In the first phase, the protocol was sent by email to several Portuguese student associations. In addition, some graduates and lecturers helped in the protocol's dissemination. The participants did not receive any kind of material benefit or suffer any loss. For the second phase, the same Portuguese student associations were contacted, offering a free webinar on self-career management. To ensure greater adherence, a Saturday afternoon was chosen for the presentation. Firstly, the research was presented, and participants were asked to fill in the protocol. Later, the webinar took place and a participation certificate was offered. No losses were suffered by the participants.

Data analyses

Data were analyzed with the Statistical Package for Social Sciences (IBM SPSS), version 27.0 for Macintosh, and the Analysis of Moment Structures (AMOS), version 27.0 for Windows.

First, we verified the internal factor structure with sample A (*n* = 199) using the exploratory factor analysis. Kaiser-Meyer-Olkin (KMO)'s index above 0.7 and Bartlett's *p*-value below 0.05 indicate sample adequacy (Tabachnick & Fidell, 2013). As the structure of measure was established in previous studies, the main component method was preferred. The selection criteria for the factorial solution were as follows: consistency with the theoretical framework underlying the measure; assessment of Cattell's (1966) test; correlation matrix of the items; Kaiser criteria for factor retention (i.e., eigenvalues equal or greater than 1); and factor loadings retention equal or greater than 0.45 (Tabachnick & Fidell, 2013).

Second, we accessed measurement's goodness-of-fit with sample B (*n* = 288) using the confirmatory factor analysis. As evidence of multivariate non-normality, found through Mardia's coefficient, the Maximum Likelihood Estimation method with 500 samples bootstrap was used (Gilson et al., 2013). Outliers were identified through Mahalanobis' Distance. Three outliers were found, hence, analyses with and without these extreme observations were run to control possible biases (Pinto et al., 2013). Due to goodness-of-fit variability, we preferred the results without outliers. A 1-factorial measurement model was specified (Baruch, 2014), and a factor loading was fixed to 1. Model fit was evaluated through $\chi 2/gl$, Root Means Square Error of Approximation (RMSEA) with a 90% confidence interval (CI), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Goodness-Fit-Index (GFI), Standardized Root Mean Square Residual (SRMR), and Akaike Information Criterion (AIC). Values of $\chi 2/df$ lower than five are adequate (Arbuckle, 2008). Values of CFI, TLI, and GFI above 0.90, RMSEA below 0.08, and SRMR below 0.10 represent acceptable fit, whereas values above 0.95, below 0.06, and 0.05, respectively, represent good fit (Hu &

Bentler, 1999). AIC values were used for model fit comparison. Lower AIC values indicate a better fit (Tabachnick & Fidell, 2013). As evidence of a poor model fit, we followed Hooper et al. (2008) recommendations, removing squared multiple correlations lower than 0.20. Moreover, Cronbach's alpha with and without problematic items was also analyzed, both for exploratory and confirmatory analyses.

Reliability was accessed with Cronbach's alpha, Average Variance Extracted (AVE) and Composite Reliability (CR). AVE was used as a complement due to its lower sensitivity to the scale's number of items (Valentini & Damasio, 2016). Cronbach's alpha above 0.7 indicates good precision (Hair et al., 2020). The same happens for AVE values equal to or above 0.5, and CR values equal to or above 0.7 (Hair et al., 2020). Both AVE and CR indices were calculated in Microsoft Excel, version 16.39 for Macintosh, based on factorial weights presented in the exploratory factor analyses' component matrix. The formulas applied were, respectively, $\sum(\lambda^2)/[\sum(\lambda^2) + \sum \varepsilon]$ and $(\sum \lambda)^2/[(\sum \lambda)^2 + \sum \varepsilon]$ (Valentini & Damasio, 2016). Regarding convergent and concurrent validity, again the SPSS version 27.0 for Macintosh was used, and *Person* correlations were calculated for sample B.

RESULTS

Exploratory factor analysis

The sensitivity of the items is presented in Table 1. The values of skewness between -.84 and .35 and kurtosis between -.64 and 1.48 indicate suitable conditions to proceed with the exploratory factor analysis (EFA).

Table 1. Item analyses

	1	2	3	4	5	6	Min-Max	Mean	Skewness	Kurtosis
It1							1-5	3.82	-.36	-.09
It2	.43***						2-5	3.61	-.14	-.64
It3	.19***	.47***					1-5	2.54	.35	-.18
It4	.22*	.49***	.35***				1-5	4.00	-.83	.78
It5	.15	.44***	.30**	.57***			2-5	4.24	-.84	1.48
It6	.23*	.51***	.25**	.38***	.47***		2-5	3.98	-.40	.19
It7	.13	.26**	.16	.14	.23*	.31**	2-5	3.60	-.27	-.51

Note: It = item
* $p < .05$; ** $p < .01$; *** $p < .001$

The EFA results indicated the adequacy of the sample (KMO = .789), and the correlations between the items were sufficiently high to perform a main component analysis, $\chi2(21) = 196.82$, $p < 0.000$. One component with eigenvalues over Kaiser's criteria of 1 was extracted, explaining 42.72% of the variance. This result was convergent with Cattel's (1966) test. Hence, one component was retained for further analysis. As evidence of only one component, no rotation was applied. All items, except number 7, presented factor loadings above the recommended 0.45 cutoff criteria (Table 2) (Tabachnick & Fidell, 2013). Therefore, the analysis was repeated without this item. An improvement in the total variance explained by the model is presented, approaching 50%. As a result, reliability analysis was run with and without item 7.

Table 2. Item's factor loadings from the Principal Component Analysis (sample A)

Items	Factor 1	Factor 1
1	.48	.48
2	.82	.82
3	.60	.61
4	.73	.75
5	.73	.73
6	.71	.70
7	.43	.
KMO test	.789	.777
Total items	7	6
Eigenvalue	2.99	2.86
Total variance explained (%)	42.72	47.68

Reliability analysis with all 7 items indicated good precision indices (AVE = .427, CR = .834, α = .755), which improved for the 6-item version (AVE = .468, CR = .837, α = .764).

Overall, these preliminary analyses seem to indicate a 1-factor structure, with better results for the 6-item version. Nevertheless, considering the primacy of this scale's study in Portugal, both 6 and 7-item versions were tested in the confirmatory factor analysis.

Confirmatory Factor analysis

Considering the theoretical framework and previous EFA results, we first defined a 1-factorial measurement model, assuming 7 observable variables and one latent variable (M1). Although GFI, SRMR, and $\chi2$ /df indicated acceptable fit (i.e., above .90, below .10, and 5, respectively), the remaining indices were below the cutoff criteria (Table 3) (Hu & Bentler, 1999). Therefore, modification indices (MI) were explored, and the model was respecified. Correlation between errors from items 4 and 5 was established (M1'). Results indicate improvements in some fit indices, namely for CFI that is now above the recommended cutoff value of .90 (Hu & Bentler, 1999).

Table 3. Fit indices for the specified measurement models (sample B)

	$\chi2$ /df	CFI	TLI	GFI	SRMR	RMSEA (90% CI)	AIC
M1	4.102	.869	.804	.944	.061	.105 (.077-.133)	85.431
M1' (MI > 14)	2.907	.925	.879	.964	.051	.082 (.052-.113)	67.786
M2	3.979	.912	.854	.960	.051	.102 (.069-.139)	59.813

Note: M1 = model with 7 items; M1' = model with 7 items respecified with correlations between errors 4-5; M2 = model with 6 items (item 7 is excluded).

Nevertheless, the literature indicates correlating errors may mask underlying unrecognized factors, recommending a more parsimonious approach. A solution includes assessing the fit between the construct and each item and searching for low squared multiple correlations (Hooper et al., 2008). Overall, item analyses indicated a high error level for item 7 (r^2 = 0.048). Moreover, alpha reliability coefficients were computed in tandem for this new sample (i.e., sample B). An improvement was observed after excluding item 7 ($\alpha_{complete\ scale}$ = .698, $\alpha_{without\ item\ 7}$ = .726). These results seem in line with the EFA previously conducted. As a result, a second model assuming 6 observable variables and 1 latent variable was specified and run (M2). Overall, fit indices improved.

Comparing the two most well-adjusted models, M1'and M2, the latter is preferable due to its parsimony and lower AIC values (Hooper et al., 2008; Tabachnick & Fidell, 2013). Furthermore, the EFA previously run with sample A also indicates higher values of total variance explained by the model with 6 items. As a result, the following analyses were performed with the 6-item version.

Criterion-related validity

Convergent validity was examined through PCOS and PCAS correlations. Results indicated a large correlation effect between PCOS and PCAS, namely with the self-directed dimension (table 4) ($r \geq$ .50, Cohen, 1988).

Concurrent validity was examined through PCOS and UWES-S correlations, as well as PCOS and CSI correlations (Table 4).

Table 4. Criterion-related validity (sample B)

	Protean career orientation
Self-directed attitude	.63
Values driven attitude	.41
PCAS total	.64
Absorption	.23
Vigor	.25
Dedication	.25
UWES-S total	.27
Networking	.21
Creating opportunities	.22
Self-nomination	.27
Sought career guidance	.23
CSI total	.28

Note: All correlations are significant at *p* < .001 level.

Correlations ranged from .21 to .28, indicating a moderate effect (.30 $\leq r <$ .50, Cohen, 1988), which supported criterion-related validity. These values indicated that PCO accesses a distinct construct from UWES-S and CSI. Moreover, all the correlations between the constructs were positive and statistically significant.

DISCUSSION

This study sought to extend the study on PCOS psychometric properties. Specifically, evaluating its reliability, internal validity, and criterion-related validity in a sample of Portuguese university students.

As expected, our results support the unidimensional nature of the construct (H1), which is in line with previous studies (Baruch, 2014; Cortellazzo et al., 2020; Herrmann et al., 2015; Ngo & Hui, 2018). However, when analyzing fit indices, we noticed improvements by excluding item 7. This evidence was found both in factor analyses and reliability indices. Unlike previous studies, especially the Brazilian validation that assessed this psychometric property, our results are far from the expected. While in the Brazilian version items 1 and 3 were excluded, the present sample excluded item 7. These results seem to support the idea that one's environment influences the construction of meaning about what a protean career orientation entails. As mentioned by Andrade et al. (2022), Brazil suffers from high unemployment rates, social inequalities, and scarce State support. Portugal, however, experiences these conditions to a lesser degree, and the internal security levels are higher, which decreases unpredictability feelings (Institute for Economics & Peace, 2022). These environmental differences may justify why Brazilians understand flexibility (i.e., core concept in item 7) as protean and the Portuguese do not. In a dynamic context that is, at the same time, reasonably predictable, individuals may consider that only in a structured vocational context will they be capable of control, influence, and, therefore, managing their career path. Flexibility, in turn, might be interpreted as a symbol of uncertainty and unclarity. These results may indicate that career agency for the Portuguese people depends more on how autonomous, free, and responsible they are for their chosen path than on work flexibility. Nevertheless, further studies are needed: either by reproducing our approach in other samples of Portuguese university students or by extending the study to other groups (e.g., adolescents, job seekers). When including more than one group, we suggest testing the measure's metric invariance to understand its consistency across groups.

As for the internal validity, good reliability indices were found, supporting H2. The same happens among American (Baruch, 2014), Italian (Cortellazzo et al., 2020), and German (Herrmann et al., 2015) university students. Therefore, our findings reinforce the idea that the PCOS measure is faithful to the protean career orientation construct's definition (Hall, 1976).

Convergent validity results indicate significant correlations between PCOS and PCAS, namely with the self-directed dimensions of the latter. Hence, our results support H3. The evidence is in agreement with Hall et al.'s (2018) statement. According to these authors, Baruch's (2014) PCOS "focus mainly on self-directed and career success"(p.135). We agree. Despite the existence of items about personal values (e.g., item 6, "Freedom and autonomy are driving forces in my career") the self-directed dimension is dominant (e.g., item 4 "I am in charge of my own career"). Nevertheless, the PCOS is consistent with the original concept of protean orientation (Hall, 1976), accessing this construct with a reduced number of items. In addition, we may assume that Baruch responds to Gubler et al.'s (2014) suggestion by bringing the underlying processes of PCO into the formulation of the items. For example, the adaptability process can be identified in item 2 ("I navigate my own career, mostly according to my plans"). Navigating through one's career involves taking action and replying to challenges that arise, which matches the adaptability definition (Hall et al., 2018). Meanwhile, the identity awareness process can be identified in item 1 ("For me, career success is how I am doing against my goals and values"). Here the meaning of career success is assigned to how well a person is doing against their goals and values. As stated by Hall et al. (2018), identity awareness is defined as a meaning-making process. Therefore, we assert that Baruch's PCOS is an adequate measure to evaluate one's PCO, offering a shorter alternative to PCAS.

Concurrent validity analyses indicate significant positive correlations between protean career orientation and academic engagement, which meets Ngo and Hui's (2018) results. These authors found the same pattern for work engagement among a sample of Chinese employees, also reporting that work engagement may be a mediator between this proactive career attitude and career satisfaction. Regarding career strategies, our results indicate significant and positive correlations between this variable and the protean career orientation. This evidence was also found in previous studies. For example, Kaur and Kaushik (2020) indicate positive relations between protean career orientation and strategies such as networking, career exploration, and learning. Together this evidence supports H4 and highlights the importance of fostering university students' protean orientation. This orientation can motivate students to actively engage in the learning processes. Moreover, it can empower students to actively manage their

careers, ensuring their lifelong employability. Furthermore, the moderate effects found between these variables underline that PCOS evaluates attitudes rather than beliefs or behaviors (Cadime et al., 2016; Matias, 2013).

Theoretical and Practical Implications

Our study's strengths include the extension of protean career orientation research to university students. Specifically, our findings introduce a new reliable and valid measure to access this group's protean orientation toward a career. On the one hand, this allows for theoretical advances in the psychological assessment literature, providing a shorter alternative measure for PCAS – Portuguese version. PCOS may, therefore, be used by researchers and practitioners. We believe its reduced size may be especially attractive for large surveys and practical work that requires a short administration time (e.g., organizational contexts and research follow-up). As a result, we hope to motivate further studies on protean orientation within the Portuguese context. A second theoretical advance comprises our findings supporting possible differences in the protean career orientation conceptualization. Specifically, among individuals living in countries with distinct cultures and work structures, such as Portugal and Brazil (Institute for Economics & Peace, 2022; United Nations, 2022). We believe that our findings, when compared to the Brazilian PCOS validation (Andrade et al., 2022), contribute to the ongoing debate about the psychosocial nature of protean orientation and its consequent impact on individuals' assessment (e.g., Hall et al., 2018; Kostal & Wiernik, 2017).

Other strengths of the present study include some practical advances. PCOS will be useful to monitor career interventions focused on developing students' protean orientation, as well as guiding educational and supervision processes. For example, Baruch (2014, p.2718) states that protean individuals "tend to take initiatives, and to be engaged with self-setting their training needs". In contrast, less protean individuals may be more dependent on external feedback. This thesis is also supported by other authors, such as Briscoe and Hall (2006), who further state that even protean people can present different profiles. As a result, it will be necessary to adapt educational and supervision strategies to capture each student's profile, maintaining their interest and engagement. While protean students might benefit from a less structured approach, with openness for reflection, self-planning, and personal choice; traditional students might prefer a proximal, more directive approach. The PCOS items may thus be a guide for teachers and supervisors to understand students' preferences. Regarding career interventions, we believe it will be advantageous to include PCOS in the evaluation toolkit, either as a means of initial assessment or process monitoring.

Limitations and future research directions

Without underrating these theoretical and practical contributions, we need to mention this study's limitations. First, the cross-sectional design adopted prevented us from analyzing PCOS test-retest reliability. As stated by Hall et al. (2018), one's protean orientation toward a career is a dynamic process. Therefore, further longitudinal research on the measure is needed to assure that findings are justified by individual rather than metric differences. Another aspect to point out is the focus on university students. Although this feature broadens the study of protean career orientation to this specific group, we agree that further studies are needed. Especially, among groups such as high school students or people with some physical or psychological disability, for example. In this regard, studies with more than one group might be advantageous to evaluate the measure's invariance.

Conclusion

To conclude, PCOS seems to be a psychometrically sound instrument to measure one's protean career orientation. Namely, among Portuguese university students. Our findings support its reliability and validity after the item 7 exclusion. Therefore, we hold that the PCOS might be an economical and pertinent alternative to the PCAS – Portuguese version. This 6-item alternative might be suitable for studies with large protocols, as well as practical purposes for university students' career counseling and assessment. Specifically, this measure might motivate further studies on the protean career orientation nomological network. Moreover, whether in educational or organizational settings (e.g., trainees), PCOS may also facilitate the adaptation of teaching and supervision methods through the information gathered on students' protean patterns. Meanwhile, career counselors will find PCOS a useful ally to monitor their practice. As indicated by previous studies, adopting a protean orientation toward a career is advantageous, because it improves one's employability outcomes and career satisfaction (e.g., Cortellazzo et al., 2020; Kaur & Kaushik, 2020; Stauffer et al., 2019). Therefore, we hope to motivate further interventions in the field. Nevertheless, more studies are needed. Mainly to extend the PCOS study to other Portuguese groups and cultures.

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CRediT AUTHORSHIP CONTRIBUTION STATEMENT
Joana Soares: Conceptualization; Funding acquisition; Literature Review; Data collection; Data analysis; Data interpretation and discussion; Manuscript writing. **Maria do Céu Taveira:** Conceptualization; Funding acquisition; Data interpretation and discussion; Manuscript review. **Ana Daniela Silva:** Data collection; Manuscript review.

Caregivers' profiles based on the Theory of Planned Behavior dimensions and gendered attitudes in a low-income Colombian sample

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Abstract: Caring for children is fundamental for their development. It can, however be hindered by the psychological, economic, and contextual conditions of caregivers. This study assessed caregivers' profiles in a sample of low-income Colombians ($n = 495$) based on attitudes toward childcare, perceived behavioral control, subjective norm, self-efficacy in childcare, and sexist attitudes. Three profiles were identified: the first profile included caregivers with intermediate scores in attitudes towards childcare and self-efficacy, low sexist attitudes and low subjective norms; the second comprised caregivers with lower attitudes towards childcare, self-efficacy, and behavioral intention, with moderate scores in subjective norms and sexist attitudes; the third profile consisted of participants with the most positive attitudes toward childcare, and with the most sexist attitudes towards caregiving. This study shows caregiver profiles in terms of childcare self-perception, dimensions of the theory of planned behavior, and sexist attitudes toward childcare in a population underrepresented in the literature.

Keywords: Childcare; Theory of planned behavior; Caregiver profiling; Care practices.

The caregivers' upbringing (parents and others related to the children) is a fundamental aspect of guaranteeing the integral development of children, which is influenced by educational, economic, cultural, and political contextual conditions. In this sense, focusing on the conditions of economic deficit or poverty is a great challenge, since this becomes a conditioning factor during upbringing, increasing the difficulty for adults of meeting children's basic needs, such as food, housing, medical care, and education. The child's development is thus affected and the possibilities of enhancing their capabilities limited. In fact, living in these conditions increases exposure to violence, health problems, educational deficit, and lack of food and goods (Centro Iberoamericano de los Derechos del Niño [CIDENI] et al., 2021; Morán-Mariños et al., 2019). Raising children in poverty can generate developmental delays or deficiencies, including in the nervous and peripheral system, motor skills, and nutritional status; as well as their linguistic, cognitive and emotional development (Alvarez Ortega, 2019; De los Reyes-Aragon et al., 2016; De Souza Morais et al., 2021; Lipina & Segretin, 2015). According to the family stress model (FSM), poverty conditions directly affect the parent-child relationship, as they cause high levels of stress and anxiety in adults responsible for children. Their ability to provide a stable and emotionally enriching care environment is impaired, thus impacting dimensions of physical, socioemotional and cognitive development (Masarik & Conger, 2017).

It is essential to ensure the wellness and dimensions of Social, Physical, Emotional, Professional, Intellectual, Environmental and Spiritual development (Pan American Health Organization [PAHO] & World Health Organization [WHO], 2008). Therefore, adults must implement caring practices to stimulate the child in their different areas of development: corporal, socioemotional, sociocognitive, linguistic-communicative, ethical-moral, aesthetic and transcendental (Amar et al., 2016), to promote the child's development and learning by stimulating the formation of their identity and social belonging (Molano Vargas et al., 2018). Caregiving practices have been examined from their multiple dimensions (Ferguson et al., 2022; Hoang & Kirby, 2020; Twintoh et al., 2021). However, more studies are needed that implement an individual-centered approach to determine parent profiles from their caregiving practices in the Colombian context. This is due to research from outside the country that establishes profiles from intrinsic characteristics with which parents identify themselves in enrichment practices, attitudes, as well as emotional resources (Iruka et al., 2018), or profiling sustained in parental support to improve children's self-control in conditions of poverty (Park et al., 2022).

Profiling caregiving practices in terms of their attitudinal characteristics is useful for intervention plans aiming to improve infant care. Such profiling based on attitudinal characteristics is valuable for

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intervention plans aimed at enhancing infant care. Existing studies on childcare profiles focus primarily on the consequences of parenting for the child's physical and cognitive development, but omit the variations in parenting practices that adults may have depending on the child's gender, and which may or may not favor the widening of gender gaps (Akkan, 2019). Studies that address childcare must therefore consider parenting based on gender equality as an important aspect that allows the generating of inputs for future interventions aimed at reducing gender gaps.

This behavioral model applied to parenting practices has been used to understand parental protective behavior (Woo et al., 2022), but so far, no studies have been found that implement it in classifying parental roles based on the Theory of Planned Behavior (TPB) and involving sexism in parenting. Hoffman and Kloska's (1995) study of roles within marriage and parenting based on infant sex role assignment is the most similar of those found so far.

From the previous studies, there is thus a tendency to analyze the constructs isolated from each other to determine caregiver profiles. However, it is possible to implement the dimensions of a profile model to obtain results with greater consistency, in terms of personal characteristics that may influence practices based on conceived ideas of self and gender. This research implements the TPB, which attempts to predict behavior and to explain an individual's intention, considering attitude (i.e., the personal evacuation about behavior), subjective norm (i.e., a person's beliefs about what others expect them to perform), and perceived behavioral control (i.e., a person's belief about their ability to behave in a particular way; Ajzen, 2020; Conner & Armitage, 1998).

The application of the TPB to classify different parenting typologies in contexts of poverty is particularly beneficial, since this model allows the prediction of specific and easily observable behaviors, such as childcare. So much so that in its three components (attitude, subjective norm and perceived behavioral control), the perception of behavioral control acquires special relevance in contexts of poverty, where the economic difficulties of adults may restrict their ability to make decisions regarding childcare. Similarly, about the subjective norm, its operation in childcare practices is highlighted, because it can be influenced by internalized social norms, so the sociocultural context takes on a profound value in the way in which childcare providers exercise caregiving. In line with these considerations, this study employs a cluster analysis to identify different caregiving role profiles based on the TPB dimensions related to caregiving practices and non-sexist parenting, and is conducted using a sample of low-income Colombian adults with children under 5 years of age.

METHOD

Participants
The participants were 495 adults who have children aged from 11 to 59 months, registered in the Child Development Centers (CDI) of the municipalities of Santa Lucía, Manatí, Repelón, Luruaco, and Barranquilla. The first four municipalities correspond to rural areas (91.1%), while Barranquilla belongs to the urban center (8.8%) of the Atlántico Department, in northern Colombia. The main participants were women (94.2%) with no university education (95.3%), who were dedicated to housework (76.7%) or active in the labor market (18.3%). Most surveyed reported low monthly incomes (Quartile 1 = $48.11, Quartile 2 = $76.98, Quartile 3 = $114.50; dollar equivalents based on the representative rate for the month of September 2022). The family structure reported by participants was, primarily, extended (51.3%) and nuclear (39.8%). A total of 86.46% of the participants were mothers of the children enrolled in the CDI. Fathers constituted 4.04% of the participants, grandmothers accounted for 6.46%, while the remaining 3.04% identified themselves as stepmothers, aunts, or siblings of the children. This study involved mostly those who did not self-identify as part of a Colombian ethnic minority (83.3%; see Table 1).

Table 1. Sample description

	Frequency (%)
Gender	
Female	458 (94.23)
Male	28 (5.76)
Education	
Undergraduate studies	22 (4.64)
High school or less	452 (95.36)
Occupation	
Homemaker	376 (76.73)

Table 1. Continued.

Student	24 (4.89)
Employed	90 (18.37)
Living area	
Urban	44 (8.81)
Rural	455 (91.18)
Ethnicity	
Ethnic minority: Yes	73 (16.82)
Ethnic minority: No	361 (83.18)
Family relationship	
Mother	428 (86.46)
Father	20 (4.04)
Grandmother	32 (6.46)
Other	15 (3.04)
Family structure	
Extended	262 (55.04)
Single parent	46 (9.66)
Nuclear	168 (35.29)
Reconstituted	0 (0)

Measures

Theory of Planned Behavior. A set of 18 items, in a Likert-type format, with five response options (1 = 'Strongly disagree', 5 = 'Strongly agree'), was designed, based on the TPB, to measure self-efficacy in childcare (6 items; α = .75; 'I have no way to solve the problems I face when caring for my child'), the subjective norm on caregiving practices (7 items; α = .92; 'People who are important to me...they consider physical activity and playing to be healthy for my child'), and behavioral intention related to childcare (5 items; α = .84; 'I intend to learn more about parenting so that my child will grow up well'; See supplementary materials). The construction of this scale was undertaken while adhering to the guidelines put forth by Clark and Watson (2019), because it was necessary to use a measure adapted to the target population. These guidelines emphasize the importance of crafting items that are straightforward, free from ambiguity, linguistically suitable for the target population, and resistant to becoming outdated over time. Researchers of this study also examined the structure of some TPB scales before developing the items (see a previous TPB scale at Muzaffar et al., 2014). Once items were developed, three psychologists with experience in psychometric studies verified if the content of each statement was appropriate and enough.

Attitudes Towards Childcare Questionnaire. This questionnaire includes 35 items, responded to through a five-level Likert-type scale (1 = 'Strongly Disagree', 5 = 'Strongly Agree'), that includes ratings of different childcare patterns. Considering that this study is part of an intervention project on attitudes towards childcare, it was necessary to adapt the items so that they measure attitudes and not specific behaviors. In this study, we adapted and added new items to the instrument developed by Amar et al. (2016). The new version of the instrument was reviewed by expert judges. For this study, the number of items that make up the subscales of the Amar et al. (2016) instrument used to measure childcare behaviors were adapted and reduced by Confirmatory Factor Analysis. Using lavaan (Rosseel, 2012), a first structural model was designed that included a total of 40 items, of which five were deleted to improve Goodness-of-fit. Goodness-of-fit was tested by the robust version of Comparative Fit Index (CFI), Tuker-Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA) and the estimator implemented was the Robust Maximum Likelihood (see psychometric properties at https://osf.io/ktd4s/). The final version of the instrument measures ratings of different dimensions of childcare, including caring for cognitive abilities (α = .90; 'Reading stories or tales to the child'; 8 items), feeding (α = .82; 'Having the parent find a way for the child to eat'; 3 items), sleep (α = .79; 'Accompanying a child that wakes up early'; 3 items), health (α = .93; 'Up-to-date vaccinations'; 6 items), emotions (α = .71; 'The parents know when the child is sad'; 4 items), the ethical dimension (α = .82; 'The family has clear rules'; 6 items), and transcendence (α = .91; 'When they grow up, they strive to achieve their goals'; 5 items). For the reader's clarity, the ethical dimension refers to the principles on which actions are guided, while transcendence is related to the search and self-analysis of oneself and one's capabilities to achieve self-actualization (Amar & Martínez, 2011).

Sexist Attitudes in Parenting Scale. To measure the sexist attitudes when raising children, the subscale of gender attitudes toward parenting developed by Hoffman and Kloska (1995) was used. The subscale consists of seven items (e.g., 'It is more important to raise a son to be strong and independent than to raise a daughter that way'). In this study, a process of linguistic adaptation and psychometric analysis of the measure was conducted to ensure its validity and reliability. First, three psychologists proficient in both English and Spanish undertook translations of the original items, employing a triangulation approach for each of them. Following the data collection phase, a Confirmatory Factor Analysis was conducted to ascertain the factorial structure that best aligned with the gathered observations. A similar procedure to the Attitudes Towards Childcare Questionnaire was performed. It was therefore necessary to eliminate items 2 ('I would encourage and support a daughter to be educated as much as a son '), 3 ('It is just as important to guide a daughter to a good job as a son'), and 7 ('I see nothing wrong with giving a boy a doll to play with'), because they showed psychometric inconsistencies. Also, the range of responses was expanded from four levels to five (1 = 'Strongly disagree', 5 = 'Strongly agree'), to allow for neutral responses by study participants. The reliability of the final version of the instrument in this study was as high as in the original study (α = .84).

Demographic characteristics. Different questions were designed to collect sociodemographic information. Participants were asked about household income, membership of an ethnic group (Yes; No), identification as displaced or migrant (Yes; No), age, gender (male, female, other), educational level (No studies, primary, high school, technical, undergraduate, graduate), occupation (homemaker, student, informal worker, unemployed, formal worker, pensioner), relationship with the child (mother, stepmother, father, stepfather, uncle, aunt, grandfather, grandmother, brother, sister, other), attendance at a child development center or children's home; among other aspects.

Procedure

This research corresponds to the baseline analysis of a psychosocial intervention project on childcare practices and healthy lifestyles in the Atlántico Department. Adults over 18 years of age, who had a caregiving role for children linked to child development centers in the department, were contacted through district agencies. They were asked to fill out an informed consent form explaining the voluntary nature of their participation and the aim of the project. Those who decided to participate in the study were asked to fill out the printed forms. The application of the survey was conducted in groups of 10 to 20 people by psychologists trained in data collection and community research. This study was reviewed and endorsed by a committee of experts in ethical research from Universidad del Norte [N° 198/2019].

Data Analysis

Once the responses were collected, we proceeded with the imputation of missing values using Predictive Mean Matching, implemented in the 'mice' function package (Van Buuren & Groothuis-Oudshoorn, 2011) in R, given its usefulness for quantitative data. The Cronbach's Alpha (α) was calculated to assess the reliability of the scales for the sample of this study. Reliability was analyzed with the functions of the 'psych' package (Revelle, 2023). Once the scores in each scale were calculated, means, standard deviations, and correlations between the scales of the study were computed. The participants were profiled using a non-hierarchical clustering algorithm. For the cluster analysis, the Euclidean distance matrix was used and the K-means clustering method was performed. A limitation of the K-means method is that it requires setting several clusters *a priori* before extraction, therefore, the 'NbClust' package (Charrad et al., 2014) was used to determine the optimal cluster number. Once participants were classified, ANOVA analyses and multiple comparisons were performed to compare the scores of the TPB variables and gender attitudes in parenting, according to the classification offered by the K-means. Finally, utilizing the chi-square test for independence, the potential association between membership of clusters and sociodemographic characteristics was examined.

RESULTS

Associations between the study's variables

Partial correlation analyses showed high correlations between attitudes toward childcare, intention to change, self-efficacy, and subjective norm, as expected (see Table 2). Specifically, in the case of sexist attitudes, negative correlations were found with the childcare self-efficacy scale, and the subjective norm, but small negative associations were observed with various dimensions of childcare. In the case of self-efficacy in caregiving, moderate positive correlations were detected with cognitive care, sleep care, health care, ethical care, emotional care, and transcendence care. However, there was a weak positive correlation

with dietary care. Similarly, behavioral intention exhibited moderate positive correlations with various caregiving dimensions, except for feeding care. Upon examining the relationships of the subjective norm with the other scales, it was observed that, in general, correlations with childcare were low ($.27 < r < .34$), as were those with self-efficacy. However, a moderate negative relationship was found with non-sexist parenting (See Table 2).

Table 2. Correlation between TPB measures and non-sexist attitudes in parenting

	CO	FE	SL	HE	ET	EM	TR	SF	BI	SN
CO	-									
FE	0.335***	-								
SL	0.686***	0.323***	-							
HE	0.750***	0.411***	0.733***	-						
ET	0.719***	0.335***	0.709***	0.832***	-					
EM	0.649***	0.223***	0.639***	0.680***	0.723***	-				
TR	0.658***	0.289***	0.610***	0.727***	0.801***	0.734***	-			
SF	0.377***	0.156***	0.362***	0.428***	0.393***	0.363***	0.362***	-		
BI	0.428***	0.221***	0.450***	0.458***	0.483***	0.354***	0.414***	0.200***	-	
SN	0.270***	0.317***	0.284***	0.337***	0.291***	0.238***	0.309***	0.327***	0.155**	-
NSP	-0.083	-0.156	-0.118 **	-0.178***	-0.111 *	-0.101*	-0.188***	-0.355***	0.118**	-0.536***

Note: ***p < .001, **p < .01, *p < .05, CO = cognitive, FE = feeding, SL = sleep, HE = health, ET = ethical, EM = emotional, TR = transcendence, SE = self-efficacy, BI = behavioral intention, SN = subjective norm, NSP = non-sexist parenting.

Caregiver's profiles

The cluster analysis allowed us to identify three profiles (61.11% accumulated variance). First profile of caregiving (cluster 1) was identified as having intermediate scores in attitude towards childcare and self-efficacy, as well as the highest scores on the scale of non-sexist attitudes in parenting and the lowest subjective norms (see table 3). The second profile identified was characterized by lowest scores in attitude toward childcare, self-efficacy, behavioral intention, but with intermediate scores, between clusters 1 and 3, on the scales for subjective norm and non-sexist attitudes. On the other hand, the third cluster was comprised by participants with high scores on the scales of attitudes towards caregiving, self-efficacy, and subjective norms, and with the lowest non-sexist attitudes, when compared to clusters 1 and 2 (see figure 1). The most significant differences among the clusters are evident in non-sexist parenting, $F(2,489) = 370$, $p < .001$, $\eta2 = .601$, and healthcare caregiving, $F(2,489) = 284.9$, $p < .001$, $\eta2 = .475$); whereas the smallest differences among the clusters are observed in sleep care, $F(2,489) = 36.2$, $p < .001$, $\eta2 = .128$, and behavioral intention, $F(2,489) = 61.36$, $p < .001$, $\eta2 = .170$; Table 3).
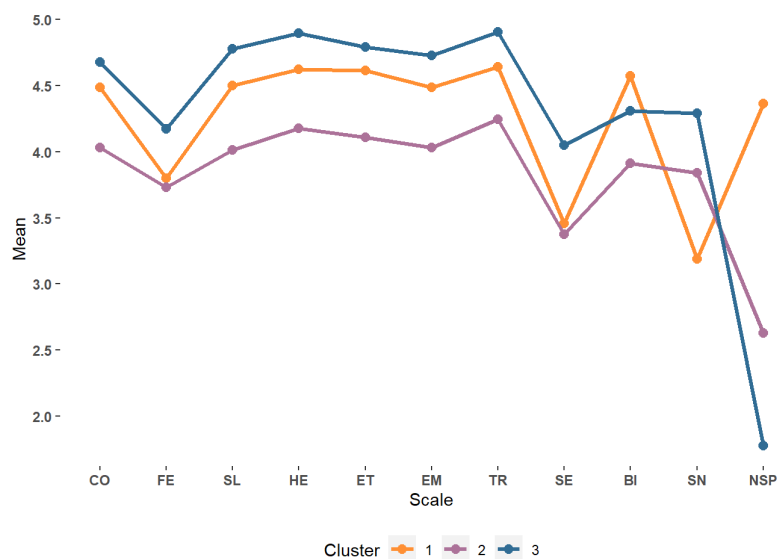

Figure 1. Children parenting profiles based on TPB dimensions and gendered attitudes
*Note*. CO = cognitive, FE = feeding, SL = sleep, HE = health, ET = ethical, EM = emotional, TR = transcendence, SE = self-efficacy, BI = behavioral intention, SN = subjective norm, NSP = non-sexist parenting.

Table 3. Differences by profile

	General	Cluster 1	Cluster 2	Cluster 3	F	η2
Cognitive	4.38 (.51)	4.49 (.57)	4.03 (.25)	4.68 (.35)	176*	.372
Feeding	3.94 (.61)	3.80 (.72)	3.73 (.43)	4.17 (.59)	185*	.400
Sleep	4.42 (.59)	4.50 (.65)	4.01 (.32)	4.78 (.39)	36.2*	.128
Health	4.56 (.51)	4.63 (.50)	4.18 (.31)	4.89 (.22)	284.9*	.475
Ethical	4.48 (.49)	4.61 (.44)	4.11 (.30)	4.79 (.27)	260.5*	.458
Emotion	4.41 (.52)	4.49 (.58)	4.03 (.26)	4.73 (.36)	191.4*	.422
Transcendence	4.59 (.52)	4.64 (.57)	4.25 (.39)	4.90 (.21)	184.9*	.380
Self-efficacy	3.70 (.67)	3.46 (.62)	3.38 (.46)	4.05 (.65)	78.78*	.244
Behavioral intention	4.17 (.57)	4.57 (.54)	3.91 (.39)	4.31 (.53)	61.36*	.170
Subjective norm	3.95 (.62)	3.19 (.87)	3.84 (.34)	4.29 (.43)	146*	.380
Non-sexist parenting	2.47 (1.10)	4.36 (.71)	2.63 (.74)	1.78 (.66)	370*	.601

Note: Standard deviation between parentheses. Degrees of freedom = (2/489). *p < .001, η^2 = size effect.

Likewise, the potential association between membership in clusters and sociodemographic characteristics was evaluated. The results showed that out of the assessed sociodemographic characteristics, only the participants' living area was associated with cluster membership, $\chi^2(2)$ = 10.33, p = .005. Thus, it could be established that cluster 1 is similarly composed of individuals living in both rural areas (13.68%) and urban areas (18.60%). On the other hand, cluster 2 is predominantly composed of those living in rural areas (41.28%) compared to those who do not (16.27%). In contrast to cluster 2, the results indicate that cluster 3 is mainly constituted by individuals residing in urban areas (65.11%) as opposed to those in rural areas (45.03%), with the latter being the cluster with the highest number of individuals (see Figure 2). No significant associations were found between cluster membership and educational level, $\chi^2(2)$ = 4.56, p = .102, occupation, $\chi^2(4)$ = 8.91, p = .063, relationship to the child, $\chi^2(14)$ = 11.05, p = .682, affiliation with an ethnic minority, $\chi^2(2)$ = 0.314, p = .854, or family type, $\chi^2(4)$ = 6.99, p = .136.
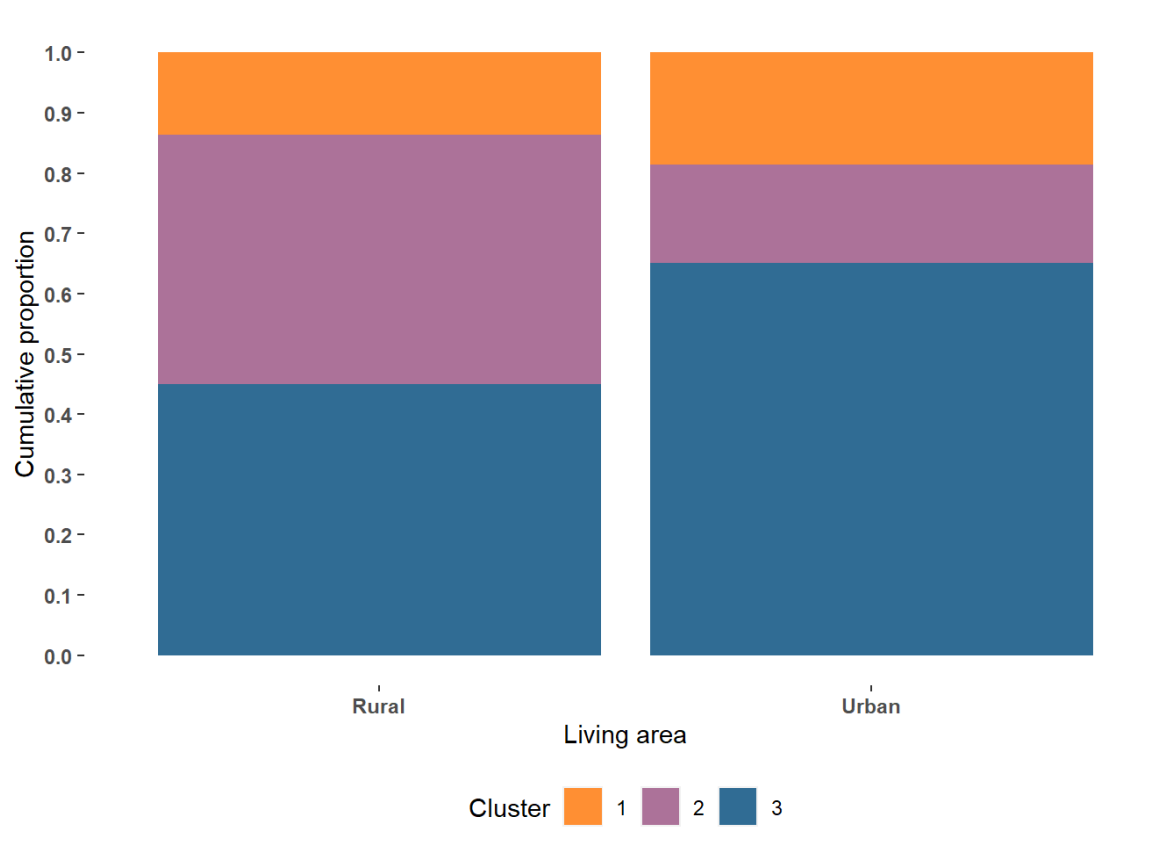
Figure 2. Parenting profiles by living area

DISCUSSION
This study aims to identify different profiles of low-income child care providers, based on the measurement of attitudes towards caregiving, TPB components (behavioral intention, subjective norm, self-efficacy) and non-sexist attitudes. The results revealed three caregivers' profiles, since they show tendencies in the cognitive, nutrition, sleep, health, ethical, emotional, transcendence, self-efficacy, behavioral intention and subjective norm dimensions. From the findings, the significant differentiation found in the profiles based on the non-sexist parenting practices of the childcare providers stands out.

This first profile corresponds to adults with intermediate attitudes towards caregiving and self-efficacy, but with the highest behavioral intention and non-sexist attitudes, as well as the lowest subjective norms. In other words, they express a greater behavioral disposition toward caregiving. Furthermore, caregivers who fit this profile exhibit a low subjective norm, indicating that socially shared norms about caregiving practices do not play a predominant role in their parental approach. Considering that sexism is rooted in social structures, it is thus suggested that gender roles are associated with gender-specific expectations and behaviors (Malonda et al., 2017). Therefore, having a low score on the subjective social norm in caregiving practices could explain the low scores on non-sexist practices. So this cluster presents the most favorable characteristics for carrying out parenting based on gender equality, because their practices may entail the involvement of children in activities without differentiation of expectations and/or skills determined by society based on gender (Rezende de Moura, 2021). It is interesting to note that the caregivers are in rural and urban areas, so this cluster gathers the best scores from both areas.

A second profile presented lower scores on attitude toward caregiving, self-efficacy, and behavioral intention, and had intermediate scores on subjective norm and sexist attitudes. The low scores in attitude characterize this profile as having a low predisposition to behavior focused on parenting practices. This may be due to the lack both of quality time and knowledge of the parenting procedure, which may result in difficulties in child development (Yue et al., 2017). Although this second profile contains the attitudes not as marked as the first profile, it does present the most marked sexist attitudes, which may be due to belonging to a society that has transmitted power imbalance and inequality between men and women (Abi Rached et al., 2021). However, this profile presents a decrease in these types of behaviors compared to the third profile. This profile is especially present in the rural area, considering the difficulties in the socioeconomic conditions of caregivers. As suggested by Yue et al. (2017), in the rural areas, the economic dynamics and, mostly extended, family structures can make it difficult to have quality time for parenting. In addition to this, caregivers have a primary and high school education level compared to university and professional levels in the urban area (Amar et al., 2023).

The third profile, most representative of our participants, was characterized as having the highest attitudes towards child care practices, self-efficacy in parenting and the most sexist attitudes, besides presenting a moderate behavioral intention related to child care, which has an impact on child development. Although the total impact of these practices cannot be determined, it can be indicated that an indulgent practice presents better results than an authoritarian parenting practice (García & Gracia, 2013). These characteristics indicate that the third profile tends to have a positive attitude towards childcare and to be more influenced by social norms and traditional gender conceptions with respect to the other profiles (Morawska, 2020). Parenting with sexist attitudes influence children's preference for activities based on traditional gender roles (Boe & Woods, 2018), which promotes the prolongation of gender gaps, due to their impact on individuals' future decisions and by fostering the division of labor (Cortés & Pan, 2023; Wood & Eagly, 2002).

This third profile is predominant in urban areas, characterized by a larger percentage of individuals with higher education levels. A baseline study (of the same population) exemplifies this disparity, revealing that 54% of the urban population has a university education; while in rural areas, this figure is less than or equal to 5%. In addition, the urban environment benefits from wider access to social services, conditions that favor more positive attitudes towards child care practices (Amar et al., 2023). In relation to the childcare subscales, remarkably similar scores are evident among the three profiles, highlighting that profile one consistently maintains an intermediate score between profiles two and three. However, in variables, such as subjective norm and non-sexist care, a reversal in scores is observed, revealing particularly marked differences in the non-sexist attitude variable. Two predominant trends are therefore identified: first, there are caregivers with high scores on non-sexist parenting (cluster 1); second, there are caregivers with low scores, indicating sexist attitudes in parenting (clusters 2 and 3).

Caregiving practices are influenced by gender roles, implying that society perceives boys and girls as inherently different and, therefore, in need of distinct care. Consequently, masculinity is often associated with power and rationality; while femininity is linked to passivity and affection, perpetuating gender roles. This research highlights the correspondence that can exist between caregiving practices and sexism in certain groups who assume the role of parents. The current findings are especially useful for more targeted

interventions as it identifies aspects of caregiving practices that require greater attention (Salamanca et al., 2019). In this study, for example, the distinctive aspect of these profiles is sexist parenting. Caregivers with non-sexist attitudes constitute a minority, specifically in cluster number one. The need to implement interventions to reduce sexist attitudes implies specific actions targeting behavioral intention and subjective norms. So it is imperative to strengthen caregivers with a more flexible, open and critical education towards the predominant sex roles in the corresponding sociocultural contexts (Mesman & Groeneveld, 2018).

One of the main limitations of the study is that the results are not generalizable for two reasons: first, it did not have probability sampling, since access to participants depended mainly on their availability and willingness to participate. Moreover, participants were contacted through district agencies from the records of children attending child development centers. Therefore, the profiles obtained in this study are of adults with children aged 0 to 5 years attending these development centers. Future research should include participants with children without government care, because being from a low-income population and not having government support for childcare, they are less likely to be able to provide the adequate care that is conducive to child development. Furthermore, future research could explore the relationships of these profiles with variables of interest such as age, gender, and ethnicity, both for the adults and the children.

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CRediT AUTHORSHIP CONTRIBUTION STATEMENT

ACKNOWLEDGMENTS

Impact of event scale–revised: A new analysis of its factor structure as applied to two Portuguese samples during the COVID-19 pandemic

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Abstract: This study used the Portuguese version of the Impact of Event Scale-Revised (IES-R) to assess the risk of psychological disturbances associated with the COVID-19 pandemic in two independent samples of the Portuguese population. The psychometric characteristics of the scale were also assessed. Data was collected through an online survey and its internal consistency was examined. The internal consistency of the scale was high. Factor analysis found different dimensional structures for the scale in the two samples: a three-factor in the first sample and a four-factor structure in the second sample. The different factor structures confirmed the dependence of the results on the characteristics of the samples and the situation where it is applied. Despite these differences in structure, this study showed that the Portuguese version of the IES-R is a reliable tool to measure psychological distress associated with traumatic events such as the COVID-19 pandemic.

Keywords: COVID-19; IES-R; Factor analysis; Psychometric properties.

Coronavirus Disease 2019 (COVID-19), an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), led the World Health Organization (WHO) to declare it a public health emergency of international concern on January 30, 2020, and then to characterize the outbreak as a pandemic on March 11, 2020 (World Health Organization - Europe, 2022). To reduce transmission of the disease, authorities required physical distancing measures from the population, including confinement at home. Consequently, the affected countries suffered great challenges to public health, loss of life, and social disruption. The first cases of COVID-19 in Portugal were confirmed on March 2, 2020 (Direção-Geral da Saúde, 2020).

During previous outbreaks, such as the first SARS epidemic, the Influenza A virus, and the Middle East Respiratory Syndrome (MERS), adverse psychological responses were observed, both directly associated with the disease and due to the quarantine measures taken, in particular depressive, stress-, and anxiety-related symptoms (Nia et al., 2021; Paulino et al., 2021; Vanaken et al., 2020). These symptoms were common in health workers and people diagnosed with the diseases, and in some cases persisted over time (Vanaken et al., 2020).

COVID-19 led to similar concerns over mental health, particularly during the early stages of the disease. These concerns were associated with the sudden increase in cases, the stress imposed on healthcare providers, confinement measures, extensive media coverage, and poor health literacy. In fact, some studies reported trauma-related stress symptoms in people surveyed during the initial months of the pandemic (Hao et al., 2020; Li et al., 2020; Mertens et al., 2022; Qiu et al., 2020; C. Wang et al., 2020). Subsequent studies also acknowledged the impact of financial distress due to the slowdown of economic activities (Anoushiravani et al., 2020; Donthu & Gustafsson, 2020).

Thus, trauma-related stress symptoms seem to be an important aspect of the psychological impact of viral outbreaks and may persist over time (Australian Institute of Health and Welfare, 2022). Therefore, there is a need for early identification of negative psychological symptoms, particularly in vulnerable groups, such as those with pre-existing depressive and anxiety disorders. The monitoring of mental health

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issues across the general population can be a valuable tool to help cope with stress in a healthy way in cases of future pandemic situations, leading to more informed interventions.

The Impact of Event Scale-Revised (Weiss, 2004) has been used to investigate post-traumatic stress reactions in a variety of situations. The use of the scale to measure the psychological impact of the COVID-19 outbreak has been validated in several countries (Hao et al., 2020; Ifthikar et al., 2021; Nia et al., 2021; Park et al., 2021), including Portugal (Paulino et al., 2021).

The original Impact of Event Scale (IES) was created as a 15-item self-report questionnaire that assessed subjective distress related to a specific life event (Horowitz et al., 1979). The scale comprised seven items to measure Intrusion (intrusively experienced ideas, images, dissociative feelings, nightmares) and eight items to measure Avoidance (of ideas, feelings, situations).

In 2004, Weiss revised the IES and renamed it the Impact of Event Scale-Revised (IES-R). The IES-R includes one additional Intrusion item and six new items related to Hyperarousal (irritation, anger, difficulty sleeping) symptoms (Weiss, 2004).

The IES-R has been translated into numerous languages and validated in a variety of population groups and trauma situations, such as earthquake victims, abuse victims, hospital patients, and healthcare workers (Brunet et al., 2003; Morina et al., 2010; Sveen et al., 2010; L. Wang et al., 2011; Wu & Chan, 2003). It has also been applied in Portugal in several studies, including one on teenagers (Cunha et al., 2017); one on diabetic patients (Pedras et al., 2019); another on victims of domestic violence (Vieira et al., 2020), and another on the general population during the early stages of the COVID-19 pandemic (Paulino et al., 2021).

The latent structure of the IES-R seems to be affected by the cultural background of the sample, as well as the trauma situation considered and the intensity of the symptoms (Grassi et al., 2021; Park et al., 2021). Structures with one to four factors have been found by several authors. It has been suggested that a one-factor structure may reflect the existence of many individuals with a low level of symptoms (Weiss, 2004). A three-factor structure was common to several works, however. While some reflect the original three factors of the scale (Intrusion, Avoidance, Hyperarousal) (Craparo et al., 2013; Cunha et al., 2017), others replaced Hyperarousal by a Sleep disturbance factor (Park et al., 2021). A fourth factor (Numbness) was also introduced to explain some results (Vieira et al., 2020).

This study reports on the psychometric properties of the IES-R scale, using data from two parallel samples of the Portuguese population, immediately after the second period of confinement at home decreed by the government, due to the COVID-19 outbreak during the winter/spring 2021 (22 January to 4 April). The authors have no knowledge of the scale being previously used under such conditions. Using exploratory and confirmatory factor analysis, different factor structures were tested.

METHOD
Participants
This was a cross-sectional study conducted on the general Portuguese population. The data was collected through online surveys from April 5 to May 4, 2021, immediately after the end of the second period of confinement due to COVID-19 (January 22 to April 4). Recruitment was performed through email and social media advertisement, using the snowball technique, and the questionnaires were made available using the Google Forms platform.

Only respondents residing in Portugal with 18 or more years of age were considered. The study received approval from the university's ethics board (Atlântica Ethics Commission, references ATLÂNTICA/CE/Processo nº01/2021 and nº02/2021) and an informed consent was obtained from all participants before answering the questionnaire.

Measures
The Impact of Event Scale-Revised was part of two questionnaires used to assess possible associations between the psychological impact of the confinement and food behaviour, namely food addiction, administered from April 5 to 19, 2021 (dos Santos, 2021), and food choices, applied from April 19 to May 4, 2021 (Simões, 2021). In addition to the specific scales to evaluate food behaviours and the IES-R, the questionnaires also contained sections of general sociodemographic questions and some questions directly concerning COVID-19.

The IES-R is a 22-item self-reported questionnaire that is used to assess symptoms of post-traumatic stress disorder (PTSD), based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 1994). The IES-R is divided into three subscales: Intrusion (8 items), Avoidance (8 items), and Hyperarousal (6 items) (Weiss, 2004). Each item is rated on a 5-point Likert scale, ranging from 0 (Not at all) to 4 (Extremely). The total score on the IES-R can range from 0 to 88, with higher scores indicating greater risk of PTSD symptoms. The scale is not a diagnostic tool, but is a reliable and valid measure of PTSD symptoms. The subscale scores are presented as the mean of the responses and may range from 0 to 4 for each construct (Weiss, 2004).

IES-R has been translated into Portuguese and used in a variety of settings, always showing good reliability (Cunha et al., 2017; Paulino et al., 2021; Pedras et al., 2019; Vieira et al., 2020). The translation used in the current study (Appendix) was taken from Monteiro (2011).

Data analysis procedures

Data was extracted from Google Forms and saved in an MS Excel file. General characteristics of the respondents were analysed by descriptive statistics and presented as percentages. IES-R total scores were calculated by adding the answers to all questions; scores for the Intrusion, Avoidance and Hyperarousal dimensions were obtained as means of the items comprising each subscale.

Skewness, kurtosis, and Shapiro-Wilk values were used to evaluate the normal distribution of the data. One-way ANOVA was used to search possible associations between sociodemographic characteristics and IES-R scores. Internal consistency of IES-R was determined using Cronbach's alpha, with 0.7 considered the cut-off value (Cho & Kim, 2015).

Construct validity of the IES-R scale, applied to the two samples, was evaluated using principal component analysis (PCA), exploratory factor analysis (EFA), and confirmatory factor analysis (CFA). EFA was performed using the minimum residual solution and oblimin and promax rotations. The Kaiser-Meyer-Olkin (KMO) test and the Bartlett's test of sphericity were applied to verify the adequacy of the sample to perform factor analysis. Items with loading values greater than 0.3 were considered appropriate, and those with communalities of less than 0.2 were excluded from EFA. The Root Mean Square of Error Approximation (RMSEA, ≤ 0.10), Tucker-Lewis Index (TLI, ≥ 0.90), and Standardized Root Mean Square Residual (SRMR, ≤ 0.08) were used to select among models in EFA (Hair et al., 2018). The Pearson correlation coefficient was used to investigate the extent of correlation for factor scores. The different domains should not be very highly correlated, as an indication that the subscales measured different psychological attributes (Craparo et al., 2013).

CFA was conducted using the maximum-likelihood method, and the RMSEA, TLI, and Comparative Fit Index (CFI, ≥ 0.90) indices were used to assess goodness of fit (Hair et al., 2018; Kline, 2016).

Data was analysed with a 95 % confidence level, using R 4.2.1 (R Core Team, 2022). The packages psych (Revelle, 2022) and lavaan (Rosseel, 2012) were used to perform factor analysis.

RESULTS

Sociodemographic variables

Two online questionnaires were administered, both containing sociodemographic questions and the items from the IES-R scale. The first sample, collected between April 5 and 19, 2021, consisted of 338 individuals, and the second sample, collected between April 19 and May 4, 2021, had 207 respondents. According to the literature, to statistically test the reliability and validity of a tool, the sample size should be at least five times the number of items, which in the present case is 22 × 5 = 110 (Tabachnick & Fidell, 2018). Additionally, to perform factor analysis, the sample size should be at least 200 (MacCallum et al., 1999). Therefore, both samples met the criteria.

Respondents were predominantly female in both samples (Table 1). The skewness, kurtosis, and Shapiro-Wilk test values indicated that neither sample presented a normal distribution. However, the sample sizes were large enough to justify the use of parametric statistical tests.

Table 1. Participant's characterization

Characteristic		Sample 1 (*n* = 338)	Sample 2 (*n* = 207)
Sex/%	Female	76.0	73.9
	Male	24.0	26.1
Age/%	< 20	2.4	2.9
	20-29	18.3	19.3
	30-39	20.1	16.9
	40-49	24.9	25.1
	50-59	18.9	17.4
	60-69	10.4	14.0
	70-79	4.7	3.9
	> 79	0.3	0.5
Education	Health related	31.4	29.0
	Non-health related	68.6	71.0

Impact of Event Scale-Revised Scores

The IES-R scoring criteria have been applied slightly differently by several authors. This study adopted the division of the score into three categories: 24 or more points indicates a mild psychological impact; 33 or more points is considered the cut-off corresponding to moderate impact and a high risk of PTSD diagnosis; more than 37 points indicates changes to the immune system (Craparo et al., 2013). The first sample had an average score of 20.5 (± 15.6), while the second sample had a score of 20.7 (± 14.9). However, 70 individuals (20.1 %) in sample 1 and 41 respondents (19.8 %) in sample 2 had scores of 33 or higher. A one-way ANOVA showed a significant association between high scores on the IES-R and isolation, or quarantine situations experienced by members of both samples.

The average scores for each of the three subscales are presented in Table 2. All values were between 0.9 and 1.0, indicating a low score for every construct and no substantial differences between them.

Table 2. Subscale scores on the IES-R

Subscale	Sample 1 (*n* = 338)	Sample 2 (*n* = 207)
Intrusion (Mean ± SD)	1.0 ± 0.8	1.0 ± 0.7
Avoidance (Mean ± SD)	0.9 ± 0.7	0.9 ± 0.7
Hyperarousal (Mean ± SD)	0.9 ± 0.8	1.0 ± 0.8

Reliability of the IES-R Scale

Cronbach's alpha was used to assess the internal consistency of the scale applied to the two samples, and yielded good values on both: 0.95 on the first and 0.94 on the second. The values calculated for the three subscales were also acceptable: 0.91 for Intrusion in sample 1 and 0.88 in sample 2; 0.85 for Avoidance in the first sample and 0.87 in the second; 0.87 for Hyperarousal in sample 1 and 0.86 in sample 2.

Principal Component Analysis

Bartlett's test of sphericity was significant in both samples ($p < 0.001$) indicating a significant correlation between items. The KMO measure of sampling adequacy was 0.96 (all items above 0.90) for sample 1 and 0.93 (all items > 0.84) for sample 2, meaning that the items shared sufficient variance to justify factor analysis (Hair et al., 2018). Pearson correlations between the three subscales yielded significant but not very high values, suggesting that they measure different dimensions. Higher correlation values were found between Intrusion and Hyperarousal items in both samples. The existence of correlation between factors supported the use of oblique rotation procedures (promax criterion).

Performing a PCA on both samples and analysing the respective scree plots, as well as applying the Kaiser criterion of retaining only components whose eigenvalues were greater than 1.0, gave an indication of the existence of three components for both samples. These three components explained 61.0 % and 60.5 % of the total variance, respectively in sample 1 and sample 2. As the first components accounted for 50.2 % and 46.6 % of total variance, the possibility of a unidimensional scale was also considered. In fact, the one-dimensionality test of the psych package (Revelle, 2022) provided values of 0.94 and 0.91 for samples 1 and 2 respectively, which are considered high.

Thus, it was decided to test the validity of solutions with several factor structures by means of exploratory factor analysis.

Exploratory Factor Analysis

Minimum residual exploratory factor analysis was performed with oblimin or promax rotations to test one-to four-factor solutions. The results obtained with both rotation methods were very similar. Using promax rotation, a 3-factor solution provided better fit indices (SRMR = 0.03, TLI = 0.91, RMSEA = 0.07) in sample 1, while sample 2 suggested a better fit with a 4-factor solution (SRMR = 0.03, TLI = 0.91, RMSEA = 0.07). In sample 1, the correlations between factors in the 3-factor model were below 0.7. However, questions 5, 7, 17, and 21 (see Appendix) had a complexity of around 2 and similar loads in two of the factors. Moreover, no item loaded on factor 3. If questions 5, 7, and 17 (Avoidance items on the original scale) and 21 (Hyperarousal) were not retained, a 3-factor structure (Figure 1, left), with only items 2 and 15 loading on factor 3, presented a slightly better fit than the one with 2 factors (SRMR = 0.03, TLI = 0.92, RMSEA = 0.07).
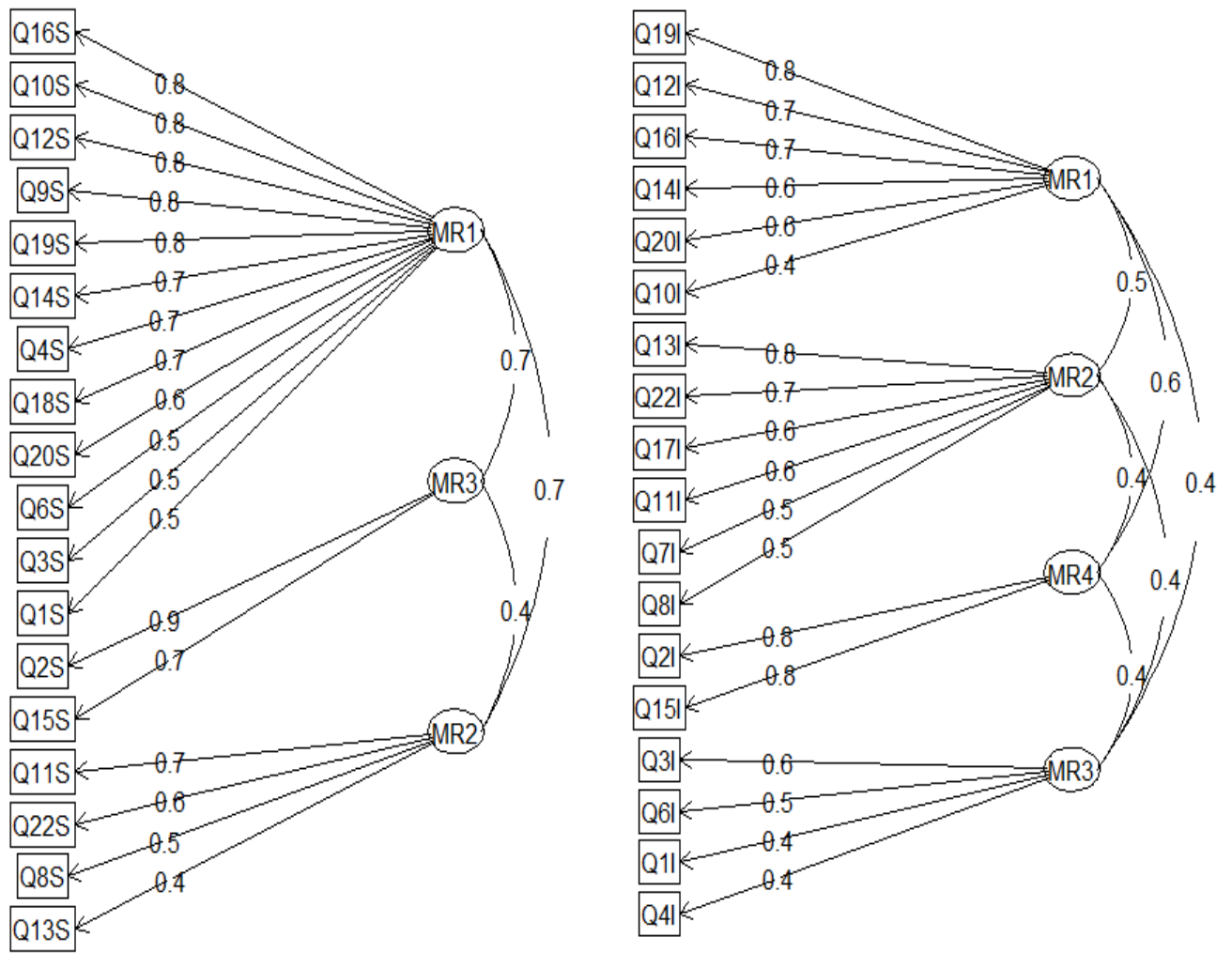
Figure 1. EFA Factor Structure of IES-R. Left: Sample 1 (items 5, 7, 17, and 21 excluded); Right: Sample 2 (items 5, 9, 18, and 21 excluded).

For sample 2, correlations between factors were also below 0.7. Questions 5, 9, 18, and 21 had complexities around 2 and questions 1, 5, 9, 18, and 21 had similar loads on two factors. Removing items 5 (Avoidance), 9 (Intrusion), 18, and 21 (Hyperarousal), EFA delivered a better fit for a 4-factor solution (Figure 1, right), with slightly better indices than the ones found for the 22-item scale (SRMR = 0.03, TLI = 0.93, RMSEA = 0.07).

The retained items, in both samples, produced good communality and uniqueness values and satisfactory loadings on a single dimension (Table 3). Correlations between factors and between factors and the observed data (Table 4) were all significant ($p < 0.05$). The values of correlation between factors suggest that, in both samples, each dimension measured a different construct. On the other hand, the reasonably high correlations found are in accordance with the low level of symptoms determined in both samples.

Table 3. Loadings extracted from exploratory factor analysis on the IES-R

Items	Factor loadings	
	Sample 1 (*n* = 338)	Sample 2 (*n* = 207)
1. Any reminder brought back feelings about it.	0.53 (I)	0.45 (H)
2. I had trouble staying asleep.	0.92 (S)	0.83 (S)
3. Other things kept making me think about it.	0.54 (I)	0.60 (H)
4. I felt irritable and angry.	0.71 (I)	0.44 (H)
5. I avoided letting myself get upset when I thought about it or was reminded of it.	Excluded	Excluded
6. I thought about it when I didn't mean to.	0.55 (I)	0.54 (H)
7. I felt as if it hadn't happened or wasn't real.	Excluded	0.51 (A)
8. I stayed away from reminders about it.	0.52 (A)	0.50 (A)
9. Pictures about it popped into my mind.	0.78 (I)	Excluded
10. I was jumpy and easily started.	0.82 (I)	0.43 (I)
11. I tried not to think about it.	0.68 (A)	0.59 (A)
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.	0.82 (I)	0.67 (I)
13. My feelings about it were kind of numb.	0.44 (A)	0.83 (A)
14. I found myself acting or feeling like I was back at that time.	0.71 (I)	0.57 (I)
15. I had trouble falling asleep.	0.70 (S)	0.81 (S)
16. I had waves of strong feelings about it.	0.84 (I)	0.66 (I)
17. I tried to remove it from my memory.	Excluded	0.64 (A)
18. I had trouble concentrating.	0.70 (I)	Excluded
19. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.	0.76 (I)	0.79 (I)
20. I had dreams about it.	0.56 (I)	0.57 (I)
21. I felt watchful and on guard.	Excluded	Excluded
22. I tried not to talk about it.	0.57 (A)	0.65 (A)

Note. In parenthesis tentative construct attribution: I – intrusion; A – avoidance; H – Hyperarousal; S – sleep disturbance.

Table 4. Subscale scores on the IES-R

Factors	Sample 1 (*n* = 338)	Sample 2 (*n* = 207)
F1 (I) – F2 (A)	0.66	0.53
F1 (I) – F3 (S)	0.73	-
F2 (A) – F3 (S)	0.44	-
F1 (I) – F3 (H)	-	0.43
F1 (I) – F4 (S)	-	0.58
F2 (A) – F3 (H)	-	0.40
F2 (A) – F4 (S)	-	0.36
F3 (H) – F4 (S)	-	0.39
I – Total	0.97	0.95
A – Total	0.88	0.92
H – Total	-	0.89
S - Total	0.95	0.95

Note. In parenthesis tentative construct attribution: I – intrusion; A – avoidance; H – Hyperarousal; S –sleep disturbance.

Confirmatory Factor Analysis

Maximum likelihood CFA was performed on the data from both samples, based on the results provided by EFA. For sample 1, three models were tested, all with correlated factors: 1) two factors with all 22 items; 2) two factors without items 5, 7, 17, and 21; 3) three factors without items 5, 7, 17, and 21. Model 3 (Figure

2, top) with three factors provided the best fit, with CFI = 0.94, TLI = 0.93, and RMSEA = 0.07. Considering the EFA results, models with three and four factors were evaluated for sample 2, excluding items 5, 9, 18, and 21. The four-factor model (Figure 2, bottom) provided the best fit, with CFI = 0.92, TLI = 0.91, and RMSEA = 0.08.
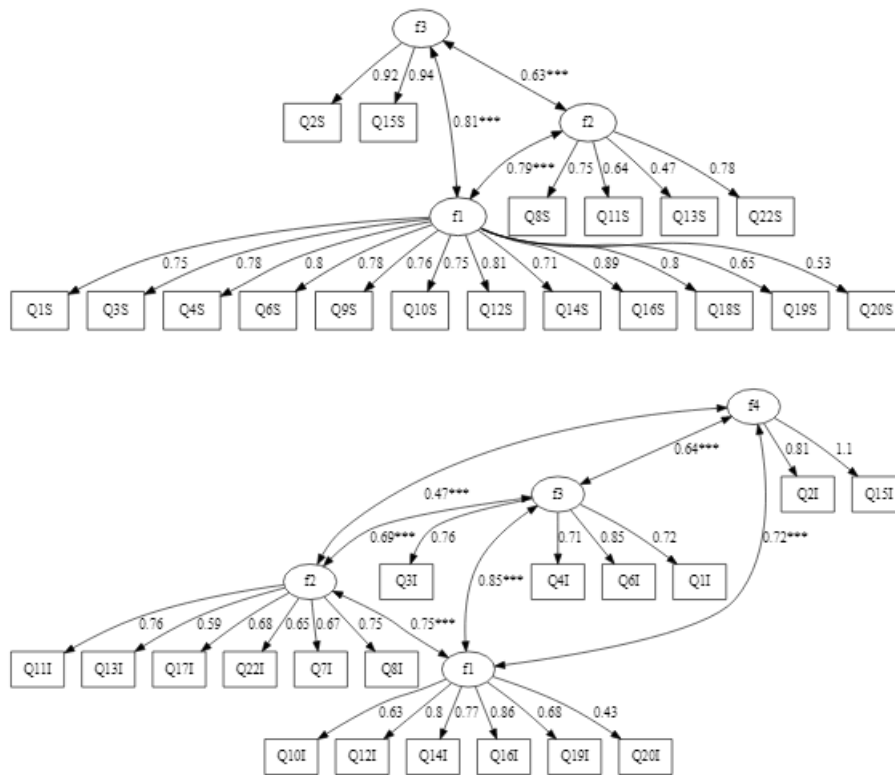

Figure 2. CFA Factor Structure of IES-R. Top: Sample 1 (items 5, 7, 17, and 21 excluded); Bottom: Sample 2 (items 5, 9, 18, and 21 excluded).

DISCUSSION

Psychological disturbances during the COVID-19 confinement

The two samples of respondents could not be considered representative of the Portuguese population, as they presented considerable differences in sex, age, and education (Pordata, 2021). Thus, the scores obtained on the IES-R are to be interpreted as indicative only.

Most respondents presented low scores on the whole scale and also on the three subscales, suggesting that the confinement due to COVID-19 was not a very traumatic event for them. However, both samples presented approximately 20 % of individuals with total scores of at least 33, indicating a moderate risk of a PTSD diagnosis. Since this is a cross-sectional study, no causality with the confinement could be ascertained. However, other authors have already mentioned the existence of stress-related disorders during the pandemic (Ifthikar et al., 2021; Khan et al., 2020; Zhang & Ma, 2020). Moreover, the association found, by means of a one-way ANOVA, between isolation or quarantine periods suffered by the respondents and higher scores on the IES-R, suggests such a causal relationship.

In line with previous results, no significant association was found between psychological impact and age (Paulino et al., 2021; Vieira et al., 2020; Zhang & Ma, 2020). Moreover, contrary to other studies that have found females to be more susceptible to developing PTSD when exposed to traumatic events than men (Ifthikar et al., 2021; Paulino et al., 2021), no significant association was observed between IES-R score and sex. However, this result may be masked due to an overrepresentation of female respondents.

Reliability and factor structure of the IES-R

Similarly to other studies (Craparo et al., 2013; Nia et al., 2021; Park et al., 2021; Paulino et al., 2021), the scale showed good internal consistency, with Cronbach's alpha values ranging from 0.85 to 0.91 for the

three constructs and 0.94, and 0.95 for the whole scale in both samples. Thus, the IES-R can be regarded as a reliable tool to measure the psychological impact of the confinement due to COVID-19.

After performing EFA and CFA, the best fits for the data collected with the two samples provided different factor structures for the IES-R: a 3-factor structure for sample 1 and a 4-factor structure for sample 2. In both cases, the model structures only attained good fits after removing some items from the original questionnaire. In sample 1, questions 5, 7, 17 (Avoidance on the original scale), and 21 (Hyperarousal) were eliminated; and in sample 2, questions 5 (Avoidance), 9 (Intrusion), 18, and 21 (Hyperarousal) were excluded.

Item 5, which was removed in both samples to achieve better fits for the factor structures, was originally classified as an Avoidance item (Weiss, 2004). It was also excluded by other authors (Craparo et al., 2013; Vieira et al., 2020) or classified as Intrusion (Park et al., 2021). The initial part of the phrase may be associated with Avoidance, but the latter part, "…reminded of the event" (Appendix), may be perceived as Intrusion by some respondents, thus affecting the factor structure.

Item 12, associated with the Avoidance construct on the original work, has a fairly complex internal psychological process concept. It may not be easily comprehensible to all respondents and has been associated with both Intrusion and Hyperarousal items throughout (Craparo et al., 2013; Weiss, 2004). In the present work, it loads on the first factor, for both samples, together with Intrusion and a few Hyperarousal items.

Item 19, starting with "Reminders of it…", also loaded together with most Intrusion items, not into a Hyperarousal factor, as in the original structure. In both samples, the average score on this item was rather low (0.5), indicating that noticeable physical reactions (sweating, etc.) were low among the respondents.

After the above-mentioned items were excluded, the results of the EFA explained 57 % of the total variance in sample 1 and 59 % in sample 2. This was in line with the 59.22 % obtained in a study also related to the COVID-19 pandemic in Iran (Nia et al., 2021). In sample 1, the first factor consisted of 12 items, the second contained 4 items, and the third only 2 items. The first factor consisted of 7 items originally identified as belonging to the Intrusion construct (Weiss, 2004): items 4 and 19, originally associated with Hyperarousal, but also identified as Intrusion by Lim et al. (2009); items 10 and 18 (originally classified as Hyperarousal); and item 12, usually classified as Avoidance, but also as Intrusion and Hyperarousal (Craparo et al., 2013). This factor was thus called Intrusion (Table 3).

Factor two only consisted of items typically associated with the Avoidance construct and was designated as such. The third factor contained only items 2 and 15, both associated with sleep, and was termed Sleep disturbance. The mixing of items originally identified as Intrusion and Hyperarousal in a single factor may be further supported by the high Pearson correlation values found (0.88 for sample 1 and 0.85 for sample 2) between those two subscales if their original items were considered. Comparable combinations of items were also found by other authors (Asukai et al., 2002; Báguena Puigcerver et al., 2001; Brunet et al., 2003), and a very similar factor structure was previously reported when studying traumatic events on a sample of police officers (Weiss, 2004).

For sample 2 (Table 3), the first of the four factors found comprised six items, with three usually associated with the Intrusion construct: item 19, identified as Hyperarousal or Intrusion (see above); item 10 (originally Hyperarousal); and item 12, classified originally as Avoidance. To be consistent with the choice for sample 1, this factor was called Intrusion. The second factor consisted of six of the items originally associated with Avoidance, thus maintaining that designation. Factor three contained items 1, 3, and 6, usually classified as Intrusion, and item 4, identified as Hyperarousal or Intrusion (see above). Those items concerned sensations or symptoms caused by remembering the event, and this factor was thus designated as Hyperarousal. Finally, factor four consisted of only items 2 and 15, as with sample 1, and was also named Sleep disturbance.

An autonomous Hyperarousal factor was not statistically confirmed on one of the samples and is not clearly defined on the other. Its items loaded together with Intrusion items, as already shown in other studies (Park et al., 2021; Vieira et al., 2020). It seems that there is some shared perception between intrusive thoughts and physiologic reactions, since both can be felt as involuntary and uncontrollable experiences (Vieira et al., 2020). It was also suggested that questions starting with "I felt" may be perceived as symptoms, influencing the results of factor analysis (Park et al., 2021). Items 2 and 15, both related to sleep, were classified into an independent factor, Sleep disturbance, the existence of which was already corroborated by other authors (Eun et al., 2005; Park et al., 2021; Weiss, 2004).

Sleep disturbance in healthcare workers associated with the COVID-19 pandemic have been reported (Marvaldi et al., 2021; Park et al., 2021), and since the two samples participating in the present study contained approximately 30 % of individuals with health-related education, our results may be further indication that the characteristics of traumatic symptoms reflect occupational backgrounds.

It has been previously stated that the time elapsed between responding to the questionnaire and the traumatic event may affect the quality of the answers (Horowitz et al., 1979; Weiss, 2004). Therefore, the

2-week interval between data collection for the two samples may also have impacted on the different structures found.

Furthermore, the difficulty in establishing a clear factor structure for the IES-R may reflect the absence of a direct connection between the items of the scale and the DSM-5 (American Psychiatric Association, 2013) diagnostic criteria for PTSD.

The inconsistencies showed here, as in other studies, regarding the factor structure of the IES-R, may be due, in part, to the nature of the samples and the particular traumatic event considered. The low score presented by most participants, meaning low symptomatology, is usually associated with a unidimensional structure and higher subscale intercorrelations (Weiss, 2004), which was not found with either of the samples studied here. Researchers need to carefully consider the characteristics of the sample (occupational and cultural backgrounds) when applying and interpreting the results of the IES-R (Park et al., 2021).

However, the present study, which was the first to apply the IES-R scale in Portugal to people who underwent a long confinement due to a pandemic, showed that the Portuguese version of the scale has good psychometric properties and could be used as a tool to measure psychological distress associated with traumatic situations like the COVID-19 pandemic. It could also assist in the definition of early interventions to deal with such distress.

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Paulo Figueiredo: Conceptualization; Formal analysis; Methodology; Project administration; Supervision; Validation; Writing – Original Draft; Writing – Review & Editing. **Inês Simões:** Investigation; Methodology. **Sónia dos Santos:** Investigation; Methodology. **Olga de Sousa Valentim:** Validation; Writing – Review & Editing. **Cristina de Sousa:** Validation; Writing – Review & Editing.