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Quality of life and psychological distress of middle-aged and older adults living with HIV

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Abstract

The general aim of this dissertation was to assess the quality of life (QoL) and psychological distress of middle-aged and older patients living with HIV infection. To address this general aim, two studies were conducted. The aims of the first study were to examine the age-related differences in QoL and depressive symptoms of patients with HIV as well as the sociodemographic, HIV-related and psychological factors associated with QoL domains. In the second study, the aims were to examine the prevalence and correlates of psychological distress among older women living with HIV, in comparison to their male counterparts and younger women, and to identify the sociodemographic and disease-related factors associated with psychological distress.

The sample consisted of HIV-infected patients who were recruited within a wider research project about quality of life and mental health of patients living with HIV in Portugal. The assessment protocol included the QoL measure WHOQOL-HIV-Bref, the Beck Depression Inventory (BDI) and the Brief Symptom Inventory (BSI).

In the first study, middle-aged and older patients reported significantly lower QoL in the physical, independence and social relationships domains. Overall, among middle-aged and older patients, higher education, being employed, a shorter time since HIV diagnosis, use of antiretroviral therapy, and fewer depressive symptoms were significantly associated with higher QoL ratings. Among younger patients, the factors more consistently related to better QoL were higher education, being employed, not having other co-infections and reporting fewer depressive symptoms. In the second study, younger women reported significantly higher psychological distress than middle-aged and older men. A greater proportion of younger women met caseness for interpersonal sensitivity, hostility and paranoid ideation than older men. Younger women were 2.67 (95% CI: 1.22-5.84) times more likely to report psychological distress than older men. Middle-aged and older women did not differ substantially from younger women and middle-aged and older men in psychological distress.

Because an important feature of healthy ageing is maintaining QoL, these data may provide useful information for tailoring age-appropriate and effective interventions to improve the mental health and to promote the QoL across multiple domains of middle-aged and older patients with HIV. Our findings also reinforce the need of mental health interventions that reflect individuals' circumstances as well as developmental contexts. Moreover, they draw attention to the importance of examining resilience characteristics in older adults to understand the mechanisms behind "successful aging" while living with HIV.

Key Words: HIV infection; Quality of life; Psychological distress; Middle-aged and older adults

Qualidade de vida e *distress* psicológico de adultos com mais de 50 anos que vivem com o VIH

Resumo

O objetivo geral desta dissertação consistiu em avaliar a qualidade de vida (QdV) e *distress* psicológico de doentes de meia-idade e idosos que vivem com o VIH. Neste sentido, foram realizados dois estudos. O primeiro teve como objetivos analisar as diferenças relacionadas com a idade na QdV e sintomas depressivos de doentes com o VIH, assim como os fatores socio-demográficos, clínicos (relacionados com o VIH) e psicológicos associados aos domínios da QdV. Os objetivos do segundo estudo foram analisar a prevalência e correlatos de *distress* psicológico em mulheres com mais de 50 anos com o VIH, comparativamente aos homens do mesmo grupo etário e a mulheres mais novas, assim como identificar os fatores sociodemográficos e relacionados com a doença associados com o *distress* psicológico.

A amostra foi composta por doentes recrutados no âmbito de um projeto mais amplo acerca da QdV e saúde mental de doentes infetados por VIH em Portugal. O protocolo de avaliação incluiu a medida da QdV, WHOQOL-HIV-Bref, o Inventário de Depressão de Beck (BDI) e o Inventário de Sintomas Psicopatológicos (BSI).

No primeiro estudo, os doentes mais velhos reportaram uma QdV significativamente mais baixa nos domínios físico, nível de independência e relações sociais. De forma geral, quando considerando os doentes mais velhos, ter um nível de educação mais elevado, estar empregado, ter sido diagnosticado com VIH há menos tempo, estar em terapêutica antiretroviral e ter menos sintomas depressivos estava associado, de forma significativa, com uma melhor QdV. No que respeita aos doentes com menos de 50 anos, os fatores associados a melhor QdV foram uma melhor educação, estar empregado, não ter outras co-infecções e reportar menos sintomas depressivos. No segundo estudo, as mulheres mais velhas reportaram um *distress* psicológico significativamente maior que os homens mais velhos. Uma maior proporção de mulheres mais novas apresentou *caseness* para sensibilidade interpessoal, hostilidade e ideação paranóide que os homens mais velhos. Os resultados mostraram que as mulheres mais novas tinham uma probabilidade 2.67 (95% CI: 1.22-5.84) maior de reportar *distress* psicológico que os homens mais velhos. As mulheres com mais de 50 anos não diferiram significativamente dos restantes dois grupos em termos de *distress* psicológico.

Uma vez que um aspeto importante do envelhecimento saudável se relaciona com a manutenção da QdV, estes resultados podem fornecer informação útil para o desenvolvimento de intervenções eficazes, adequadas à idade, de forma a melhorar a saúde mental e promover a QdV dos doentes de meia-idade e idosos em múltiplos domínios. Os nossos resultados reforçam ainda a necessidade das intervenções direcionadas para a saúde mental refletirem as circunstâncias individuais, assim como os contextos de desenvolvimento. Para além disso, chamam a atenção para a importância de examinar características de resiliência em adultos mais velhos por forma a entender os mecanismos subjacentes ao “envelhecimento bem-sucedido” enquanto doentes infetados com o VIH.

Palavras chave: Infeção por VIH; Qualidade de Vida; *Distress* psicológico; Adultos de meia-idade e idosos

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He said one thing and I said another and the next thing I knew I wanted to spend the rest of my life in the middle of that conversation.

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Introdução

De acordo com estimativas recentes, cerca de 35 milhões de pessoas em todo o mundo estão infetadas com o Vírus da Imunodeficiência Humana (VIH) (UNAIDS, 2014). Em Portugal, de acordo com os dados mais recentes coligidos pela Direção-Geral da Saúde (DGS, 2014), no final de 2013 existiam um total de 48657 casos notificados em todos os estádios da infeção. Apesar de desde o ano 2000 se ter registado uma diminuição no número de novos diagnósticos, a infeção por VIH continua a ser de extrema importância para a saúde pública, sendo que Portugal apresentou em 2012 uma das taxas mais altas na Europa ao nível de casos de SIDA (DGS, 2014). Por outro lado, no que diz respeito aos de meia-idade e idosos (considerados como aqueles com 50 ou mais anos), as taxas de infeção por VIH estão também a aumentar progressivamente. Estima-se que cerca de 4.2 milhões de pessoas em todo o mundo são pessoas com 50 ou mais anos (UNAIDS, 2013). Quando considerando o caso de Portugal, a população com idade superior a 50 anos representava, em 2013, 14.4% de todos os casos da infeção, com aproximadamente 26% de novas infeções a ocorrer nesta população. Por sua vez, no que diz respeito ao género, estima-se que cerca de metade de todos os infetados com VIH no mundo serão mulheres (UNAIDS, 2014). Em Portugal, de acordo com os dados mais atuais, as mulheres representam cerca de 25% dos casos registados de infeção por VIH. Tendo em conta o critério idade, cerca de 15% dos casos de VIH no sexo feminino respeitam à faixa etária de 50 ou mais anos (DGS, 2014).

Em 2012, o *HIV and Aging Working Group* desenvolveu um documento intitulado *HIV and Aging: State of Knowledge and Areas of Critical Need for Research* que estimou que em 2015 metade das pessoas infetadas com VIH nos Estados Unidos da América (EUA) seriam pessoas com 50 ou mais anos (High et al., 2012). Uma outra projeção sugeriu que no ano 2020, aproximadamente 70% das pessoas com VIH nos EUA serão pessoas de meia-idade e idosas (Senate Special Committee on Aging, 2013). Apesar de no nosso país não existirem (ou não termos conhecimento) de projeções disponíveis a este respeito, é plausível considerar que estas estimativas poderão ser semelhantes, principalmente dada a tendência para um aumento registada desde 1990 até ao final de 2013 (DGS, 2014).

Embora os indivíduos com mais de 50 anos constituam um grupo em progressivo crescimento dos casos de VIH/SIDA, tem sido dada pouca atenção às suas características e necessidades específicas. Um melhor entendimento deste grupo específico é fundamental uma vez que viver com VIH/SIDA pode ser um processo diferente para a população mais velha (Mack & Ory, 2003), e essas diferenças podem afetar a qualidade de vida e a saúde mental de forma distinta. Adicionalmente, e considerando o género, para as mulheres mais velhas existe evidência que suporta que ao sexo feminino estão associadas vulnerabilidades específicas (Durvasula, 2014), que podem contribuir para prejuízos ao nível do bem-estar e da saúde mental. A predominância de estudos centrados em amostras mais novas e compostas maioritariamente por homens, reforça a necessidade de atender na investigação e prática a esta população específica.

De acordo com o programa da Organização das Nações Unidas para a infecção VIH/SIDA (UNAIDS, 2013), o aumento de casos de VIH na população mais velha deve-se sobretudo ao facto de a terapia antirretroviral (TAR) ter vindo a demonstrar sucesso no prolongamento da vida das pessoas infetadas. Desta forma, o VIH evoluiu de uma doença fatal para uma condição crónica de mais fácil gestão. No entanto, este aumento parece também dever-se aos novos casos identificados neste grupo etário (associados a diagnóstico tardios) (Ellman et al., 2014), ainda pouco reconhecido como um grupo de risco. De forma relevante, é importante assinalar que a própria população mais velha não se considera em risco (Maes & Louis, 2003; Sankar, Nevedal, Neufeld, Berry, & Luborsky, 2010). Isto acontece de igual forma com os profissionais de saúde que, por isso, não consideram o diagnóstico de VIH, podendo atribuir os sintomas existentes a um envelhecimento “normal” (UNAIDS, 2013). De facto, alguns sintomas do VIH podem sobrepor-se a aspetos relacionados com a idade e serem incorretamente atribuídos a outras condições de saúde, adiando, deste modo, o diagnóstico e consequente tratamento da infecção (Pratt, Gascoyne, Cunningham, & Tunbridge, 2010). Para além disso, os programas existentes para a educação da população acerca do VIH não estão direcionados para a população mais velha, o que se reflete na escassez de estratégias de prevenção específicas e eficazes para este grupo etário. Adicionalmente, apesar dos vários estereótipos, diversas pessoas mais velhas têm uma vida sexual ativa (Lovejoy et al., 2008), porém, apresentam-se também como mais relutantes a práticas sexuais seguras, designadamente em usar preservativos (Wutoh et al., 2005). Neste contexto, as mulheres mais velhas podem estar particularmente em maior risco devido a características biológicas específicas deste grupo, que podem ampliar o risco de transmissão do VIH por via sexual, tais como mudanças físicas que ocorrem durante a menopausa (Organização Mundial de Saúde [OMS], 2003). Por fim, existe ainda um maior estigma nesta população, que pode levar estes doentes a evitar serem testados ou a esconderem o seu diagnóstico. Estes aspetos, por sua vez, podem conduzir a um menor apoio social o que, consequentemente aumenta o isolamento social e a solidão (Siegel, Schrimshaw, Brown-Bradley, & Lekas, 2010).

Estas diversas questões psicossociais (embora não se esgotando nestas), assim como as de saúde física e mental associadas ao envelhecimento, reforçam a ideia do VIH em idades mais avançadas como uma questão muito preocupante (Önen & Overton, 2009). Envelhecer com o VIH implica, frequentemente, comorbidade com outras condições crónicas, preocupações de saúde mental e polifarmacologia (High et al., 2012). Adicionalmente, quando considerando os novos casos, a infecção por VIH torna-se ainda mais preocupante, na medida em que tem sido reportado que os indivíduos mais velhos têm maior probabilidade de serem diagnosticados com o VIH numa fase mais avançada da doença, comparativamente a indivíduos mais novos (Centers for Disease Control and Prevention [CDC], 2013). Um diagnóstico tardio pode contribuir para um pior prognóstico, um maior risco de desenvolver SIDA, assim como para mortalidade a curto prazo (Smith, Delpech, Brown, & Rice, 2010). Neste sentido, surge a necessidade de a investigação, a prática (clínica) e as políticas se adaptarem ao “envelhecimento” do VIH.

A infecção por VIH não afeta apenas o bem-estar físico de um indivíduo

mas também a sua qualidade de vida (QdV). Tal como já foi mencionado, atualmente a infecção por VIH é encarada como uma condição de saúde crónica devido aos avanços da TAR, que reduziu significativamente tanto a morbidade como a mortalidade no contexto desta infecção. Desta forma, o principal objetivo passa por maximizar o bem-estar dos pacientes no seu dia-a-dia (Murri et al., 2003), sendo, por isso, fundamental ir para além dos aspetos clínicos da doença e do seu tratamento e considerar a interação entre variáveis sociodemográficas, clínicas e psicológicas para a QdV das pessoas que vivem com VIH. Com o envelhecimento da população infetada, a QdV deste segmento torna-se portanto de importância central. Porém, a investigação nesta área é ainda escassa, sendo que a grande maioria dos estudos existentes se foca essencialmente em amostras de grupos etários mais novos, com uma sobre representação de homens. De igual modo, poucos destes estudos utilizaram os 50 anos como o critério para definir a população mais velha, apesar de este ter vindo a ser progressivamente mais utilizado e aceite na epidemiologia do VIH mundialmente.

A OMS define a QdV como a *perceção do indivíduo sobre a sua posição na vida, dentro do contexto dos sistemas de cultura e valores nos quais está inserido e em relação aos seus objetivos, expectativas, padrões e preocupações* (WHOQOL Group, 1994, p.28). Deste modo, é realçada a visão da QdV como subjetiva e multidimensional, sendo colocada como um conceito amplo que incorpora componentes relativos à saúde física, ao estado psicológico, ao nível de independência, à relação com o ambiente e às relações sociais do indivíduo. Neste sentido, a avaliação da QdV nos doentes com VIH apresenta-se como essencial para um maior entendimento da forma como a doença afeta a vida dos indivíduos infetados. Esta avaliação pode auxiliar profissionais de saúde no planeamento de intervenções para subgrupos onde a QdV possa constituir um problema (e em que seja importante promovê-la), como poderá ser o caso da população com mais de 50 anos.

Para além da QdV, a avaliação da saúde mental deste grupo apresenta-se também como de extrema relevância, uma vez que envelhecer com VIH pode aumentar a vulnerabilidade para ideação suicida e doenças do foro psicológico, como a depressão ou ansiedade (Heckman, Kochman, & Sikkema, 2002; Vance, Moneyham, & Farr, 2008). Fatores como um maior estigma, maior isolamento, medo da morte, alterações neurológicas ou problemas financeiros podem aumentar o risco e a vulnerabilidade para uma doença mental deste segmento da população com VIH (e.g., Emler, 2006; Shippy & Karpiak, 2005). O caso das mulheres é particularmente relevante neste contexto uma vez que inúmeros estudos têm demonstrado que diversos sintomas de *distress* psicológico são mais prevalentes no sexo feminino comparativamente aos homens (e.g., Gordillo et al., 2009; Pereira & Canavarro, 2011; Robertson et al., 2014; Wisniewski et al., 2005).

Face ao exposto, e considerando a escassez de estudos que se focam na QdV e saúde mental da população mais velha infetada com VIH, esta dissertação propõe-se a colmatar as lacunas existentes na investigação nesta área, propondo-se a realizar dois estudos cujos objetivos serão de seguida explicitados. No primeiro estudo, são examinadas diferenças relacionadas com a idade nos diversos domínios e facetas específicas da QdV, assim como nos sintomas

depressivos (cognitivo-afetivos e somáticos), comparando um grupo de doentes com VIH com 50 ou mais anos com um grupo mais novo. Para além disso, ainda neste estudo, são avaliados os fatores que influenciam a QdV dos doentes com mais de 50 anos, nomeadamente a contribuição de variáveis sociodemográficas e clínicas (relacionadas com o VIH), assim como dos sintomas depressivos nos diferentes domínios da QdV. O segundo estudo teve como objectivo analisar a prevalência e correlatos de *distress* psicológico em mulheres com mais de 50 anos infetadas com o VIH, comparativamente aos homens do mesmo grupo etário, assim como a um grupo de mulheres com menos de 50 anos. Posteriormente, procurou-se também examinar os fatores sociodemográficos e clínicos associados ao *distress* psicológico nestes grupos.

ESTUDO 1

Factors associated with quality of life in middle-aged and older patients living with HIV¹

Abstract

Purpose: The aims of this study were to examine the age-related differences in QoL and depressive symptoms of younger and middle-aged and older patients with HIV as well as the sociodemographic, HIV-related and psychological factors associated with QoL domains.

Methods: The sample consisted of 1194 HIV-infected patients who were recruited from 10 Portuguese hospitals. QoL data were collected using the WHOQOL-HIV-Bref questionnaire. Patients also completed the Beck Depression Inventory (BDI).

Results: Of the 1194 patients, 185 (15.5%) were over 50 years old. Middle-aged and older patients reported significantly lower QoL in the physical, independence and social relationships domains. Regarding the specific facets of QoL, middle-aged and older patients reported significantly lower scores in 7 of the 29 facets and higher scores in one facet (financial resources). Overall, among middle-aged and older patients, higher education, being employed, a shorter time since HIV diagnosis, use of combination antiretroviral therapy, and fewer depressive symptoms were significantly associated with higher QoL ratings. Among younger patients, the factors more consistently related to better QoL were higher education, being employed, not having other co-infections and reporting fewer depressive symptoms.

Conclusions: Our findings suggest that depressive symptoms account for significant variability in QoL scores in younger as well as middle-aged and older patients. Because an important feature of healthy ageing is maintaining QoL, these data may provide useful information for tailoring age-appropriate and effective interventions to improve the mental health and QoL of middle-aged and older patients living with HIV.

Keywords: Depression; HIV infection; Middle-aged and older adults; Quality of life.

¹ O presente estudo encontra-se formatado de acordo com as normas da revista *Quality of Life Research*, na qual se encontra submetido.

INTRODUCTION

In recent years, the incidence of HIV infection among middle-aged and older adults (defined as those aged 50 years and older) has grown steadily worldwide as well as in Portugal. According to recent data, approximately 4.2 million people worldwide [1] are people living with HIV/AIDS (PLWHA) aged 50 years or older. As indicated by the latest Portuguese report on HIV/AIDS [2], middle-aged and older adults represent 14.4% of all HIV cases, with approximately 26% of new infections occurring in this population. The HIV and Aging Working Group estimated that by 2015, half of all PLWHA in the United States (US) will be aged 50 years or over [3]. A more recent projection suggested that by 2020, approximately 70% of those living with HIV disease in the US will be over the age of 50 [4]. To our knowledge, there is no available information in Portugal about projections. However, given the increasing trend from 1990 to 2014 [2], it is plausible to consider that these estimations may be similar. The increasing incidence of HIV cases in this population is largely because of the success of combination anti-retroviral therapy (cART) in extending the lives of PLWHA along with evidence of a growing incidence of newly diagnosed HIV infections in older individuals [4]. Although middle-aged and older adults represent an ever-growing proportion of HIV cases, little attention has been given to the characteristics and needs of this population. This issue is particularly relevant as the ageing of the HIV population is leading to increasing costs in health care [5].

HIV infection affects not only the physical well-being of individuals but also the overall QoL of those infected. CART has noticeably reduced both morbidity and mortality related to HIV. As a result, one of the crucial goals is to maximise the well-being of PLWHA in their everyday life. Acknowledging the emphasis beyond the clinical aspects of the illness and its treatments, it is crucial to address the synergistic effect of sociodemographic, clinical, and psychological variables on QoL in the context of HIV. With the ageing of the HIV population, QoL in older ages is of indisputable relevance because living with HIV may be a different process for adults aged 50 years and older [6], and those differences might impact QoL differently. However, despite the increasing numbers in this population, relatively little is known about their QoL as most existing research focuses mainly on younger samples. Therefore, assessing QoL is central to understanding how people's lives are affected by HIV. If age-related differences exist, then health professionals and policy makers may need to consider age as a significant variable in developing programmes for the unique needs of middle-aged and older persons living with HIV.

Across multiple cultural settings, the literature provides some evidence of age-related differences in the QoL of PLWHA. However, the existing research has not been consistent. Some studies have indicated that QoL is decreased in higher-age groups [7-9] and that the decrease is mostly related to physical functioning [10, 11]. Other studies, however, have indicated that younger adults have lower QoL scores when compared with older adults [12, 13] or have found no differences between younger and older PLWHA [14, 15]. For example, Razavi et al. [9] found that patients older than 35 years reported lower QoL in the domains of social relationships and spirituality as well as in overall QoL and

general health. Kovačević et al. [7] found that younger persons reported higher scores in the psychological domain of QoL than older persons did (> 45 years). In the field test of the WHOQOL-HIV [11], older people (> 34 years) showed poorer scores in physical and independence QoL, whereas younger people reported lower scores in the domains of environment and spirituality. A study by Pereira and Canavarro [8] found that patients over 45 years old reported lower scores in physical and independence QoL, but only in comparison to patients below 34 years. In a recent study, Skevington [13] found that sleep, fatigue and sex life were poorer areas of QoL for older adults with HIV (> 40 years) than for their younger counterparts. However, older adults with HIV reported better QoL than initially predicted on 11 dimensions, including negative feelings, social inclusion and several facets of the environment and spirituality domains, highlighting the extent of poor QoL in younger adults.

The fact that these studies have used different cut-offs for defining age groups may have contributed to these mixed findings. Indeed, within the limited research that has examined the age-related differences of QoL of PLWHA, few have considered age 50 as the cut-off between younger and older adults. Although the age of 50 is not generally used to identify “elderly” patients, this cut-off is often used in the context of HIV by the Centers for Disease Control and Prevention (CDC) and has been increasingly adopted worldwide. However, it is important to note that among the studies that used this cut-off, either no significant differences were identified between younger and older patients [14] or the only significant findings were greater physical limitations and more comorbidities among older individuals [10].

Research has also examined the influence of sociodemographic, disease-related and psychological variables on QoL. Identifying the determinants of QoL among PLWHA is vital to identifying ways to maximise the everyday functioning and QoL of older PLWHA. Many studies have examined the factors that determine the QoL of PLWHA [16]. However, for most factors, the results are not entirely consistent. Moreover, to the best of our knowledge, the association of these factors with different QoL domains has not been examined among middle-aged and older adults with HIV. In the existing literature, there seems to be a consensus that socioeconomic variables such as employment and higher education have a positive impact on several domains of QoL [15, 17-21]. Gender has not been associated with differences in QoL [22]. When differences have been found, the results indicated that women mostly reported lower QoL than men did [8, 23, 24]. Relationship variables also seem to be particularly relevant, and there is evidence that being in a stable relationship is associated with better QoL [25-27]. Regarding the HIV-related variables, the results have also been mixed. A longer time since HIV diagnosis has been related to both lower [28] and higher mental QoL [21]. The link between the presence of other comorbidities and lower QoL, particularly with regard to physical health, has been supported by prior studies [29]. Additionally, the presence of other co-infections, such as hepatitis C, has been associated with decreased QoL [30, 31] or no differences in QoL [18, 32]. Other variables, such as higher CD4+ T-cell counts [15, 34] and less advanced HIV stage [15, 34], have also been shown to be important clinical indicators of better QoL, but once again the findings have been

inconsistent.

Mental health is well established as a key dimension of QoL. Numerous studies have reported a significant association between increased psychological distress in PLWHA and decreased QoL [26, 34, 35]. When considering age differences, there is evidence of decreased mental health among older individuals with HIV [36], although a recent literature review suggested that mental health outcomes are less age dependent [16]. In this context, depression is especially relevant because it has been shown that PLWHA are at a high risk of depression [37, 38] and that depressive symptoms may significantly impact the lives of older PLWHA [39]. Although some studies have suggested that younger and older PLWHA report comparable rates of depressive symptoms [8, 40], these symptoms in older adults may present somewhat differently than in younger adults. Indeed, it has been suggested that older adults are less likely to endorse cognitive-affective symptoms of depression than younger adults are [41]. In addition, sleep disturbance, fatigue, psychomotor retardation, subjective complaints of poor memory and concentration may be more prevalent in late-life depression than in depression in younger adults [42]. Regarding the association between depressive symptoms and QoL, there is evidence of a negative association [26, 34]. Moreover, studies have revealed that depressive symptoms were significantly related to QoL over and above other variables, such as demographic and clinical characteristics [43]. However, there is a lack of studies that examine whether this association differs according to different subsets of depressive symptoms.

Considering the dearth of studies focusing on QoL and the mental health of PLWHA aged 50 years and older, the first aim of this study was to examine the age-related differences in QoL domains and specific facets as well as in depressive symptoms (cognitive-affective and somatic) by comparing patients aged 50 years and older with a younger group of PLWHA. A second aim was to assess the factors that influence the QoL of middle-aged and older patients with HIV, particularly the combined contribution of sociodemographic, clinical (HIV-related), and depressive symptoms to different domains of QoL.

METHODS

Participants and procedure

This cross-sectional study was part of a wider research project on the quality of life and mental health of Portuguese HIV-infected patients. The study sample consisted of 1194 HIV patients attending the main departments of Infectious Diseases of Portuguese Hospitals (a total of 10 institutions). Of the total sample, 185 patients (15.5%) were aged 50 years and older. The general inclusion criteria were age over 18 years, diagnosis of HIV infection and appropriate knowledge of Portuguese to complete the set of questionnaires. Trained researchers (mainly psychologists) were available to provide assistance in completing questionnaires when needed.

Patients were invited to participate in the research project while attending a consultation with their infectious disease specialist. Data were gathered from September 2007 to July 2008. A total of 1251 patients were consecutively recruited by convenience sampling. Patients who did not complete the set of

questionnaires (more than 20% of missing data; $n = 54$) or did not report age ($n = 2$) were excluded from the analyses. One participant was excluded because (s)he self-identified as transgender. After a full explanation of the aims of the study, written informed consent was obtained from all participants. Ethical approval was obtained from the Ethics Committee of all the institutions involved.

Measures

Sociodemographic and HIV-related information

Sociodemographic and HIV-related data were obtained by self-report, and the latter were confirmed by medical records. Data were gathered regarding sex, age, marital status, education, employment status, mode of HIV acquisition, HIV stage, CD4+ T-cell count, year of HIV diagnosis and cART.

Quality of life

The European Portuguese version of the WHOQOL-HIV-Bref [44] was used to assess QoL. This is a self-reported questionnaire comprising 31 items that yield a multidimensional profile of scores across domains and specific facets [45]. The WHOQOL-HIV-Bref is organised into six domains: physical, psychological, level of independence, social relationships, environment, and spirituality. These domains cover 29 specific facets of one question each. Five facets are specific to PLWHA: symptoms of PLWHA, social inclusion, forgiveness, fear of the future, and death and dying. One additional facet (two items) concerns global QoL and general health. All items are rated on a 5-point scale on which 1 indicates low (a negative perception) and 5 indicates high (a positive perception of QoL). All domain scores were transformed on a scale from 0 to 100 (a higher score corresponds to a better QoL). In this study, the Cronbach's α ranged from 0.60 (spirituality for younger patients) to 0.86 (independence for middle-aged and older patients).

Depressive symptoms

The Beck Depression Inventory (BDI) [46] was used to assess depressive symptoms. Respondents are required to rate a list of 21 symptoms according to how they felt during the previous two weeks. Each item is scored from 0 to 3, with 0 representing the absence of a symptom and 3 representing intense severity of the symptom, yielding a total score ranging from 0 to 63. The BDI focuses on both cognitive-affective (e.g., sadness and pessimism) and somatic symptoms of depression (e.g., changes in sleeping patterns and changes in appetite). Internal consistency in this study was 0.92 for younger patients and 0.94 for middle-aged and older patients.

Data analysis

The data were analysed using the Statistical Package for Social Sciences (IBM SPSS 20.0; Armonk, NY). Descriptive statistics were calculated to explore the sample's characteristics. A χ^2 analysis and Student's t-test were conducted to compare the two groups on categorical and continuous variables, respectively. The main analyses were a multivariate analysis of covariance (MANCOVA) and hierarchical multiple regression (HMR). The MANCOVA was used to assess

differences in QoL and depressive symptoms among the study groups. Because the two groups showed differences in the sociodemographic and HIV-related variables, multivariate analyses were performed with these variables as covariates. The contribution of sociodemographic, HIV-related and psychological variables on the QoL domains were assessed separately for younger and middle-aged and older patients using HMR analyses. All variables were examined for multicollinearity.

The effect sizes were calculated using Cramer's V for the χ^2 tests, Cohen's d for Student's t tests, the partial eta squared (η_p^2) for the ANOVAs, and Cohen's f^2 for the multiple regression. The effect sizes are presented for all analyses (small effects: Cohen's $d \geq 0.20$, Cramer's $V \geq .01$, and Cohen's $f^2 \geq 0.02$; medium effects: Cohen's $d \geq 0.50$, Cramer's $V \geq .03$, and Cohen's $f^2 \geq 0.15$; large effects: Cohen's $d \geq 0.80$, Cramer's $V \geq .05$, and Cohen's $f^2 \geq 0.35$) [47]. The level of significance for all of the tests was set at 0.05.

RESULTS

Participant characteristics

The demographic and HIV-related characteristics of the 1194 participants are shown in Table 1. The mean age of the participants was 40.74 years ($SD = 9.69$; range: 18-81). Most patients were male (67.5%), of lower education (76.1%) and employed (50.2%). Regarding HIV-related variables, the majority of patients were asymptomatic (61.5%), reported HIV transmission through sexual contact (62.2%) and were on cART (75.5%). The analysis by age showed that there were significant differences with respect to marital status, employment status, education, mode of transmission, the presence of other co-infections, and time since HIV diagnosis (cf. Table 1). Overall, middle-aged and older patients were more likely to be married/cohabiting or retired, to be unemployed or not currently working, to be less educated, to be more recently diagnosed with HIV and to report sexual transmission. No significant differences were found regarding gender, HIV stage, CD4+ T-cell count and cART.

Table 1. Sociodemographic and HIV-related characteristics of participants listed in percent

	Total ($N = 1194$)	< 50 years ($n = 1009$)	≥ 50 years ($n = 185$)	< 50 years vs. ≥ 50 years p value	Cramer's V
Gender				0.442	.02
Male	67.5	68.0	64.9		
Female	32.5	32.0	35.1		
Marital status				< 0.001	.27
Single	44.5	49.9	15.1		
Married/co-habiting	33.5	30.3	50.8		
Separated/divorced	18.1	16.9	24.3		
Widowed	4.0	2.9	9.7		
Employment status				0.008	.08
Employed	50.2	51.8	41.1		
Not currently working	49.8	48.2	58.9		
Mode of transmission				< 0.001	.25
Sexual intercourse with man	35.0	34.5	38.0		
Sexual intercourse with woman	27.2	24.2	43.5		
IV Drug use	32.4	36.9	8.2		
Blood products	3.0	2.2	7.1		
Unknown	2.4	2.2	3.3		

HIV stage				0.088	.07
Asymptomatic	61.5	60.9	64.7		
Symptomatic	12.7	12.0	16.3		
AIDS	20.4	21.4	14.7		
Unknwon	5.5	5.7	4.3		
CD4+ count ^a				0.667	.03
< 200 cells/mm ³	23.5	24.0	20.9		
201 e 499 cells/mm ³	41.9	41.5	44.2		
> 500 cells/mm ³	34.6	34.5	35.0		
cART				0.112	.05
Yes	75.5	76.4	70.6		
No	24.5	23.6	29.4		
Other co-infections				< 0.001	.15
Yes	28.1	31.0	11.9		
No	71.9	69.0	88.1		
	M (SD)	M (SD)	M (SD)		Cohen's <i>d</i>
Education	7.89 (4.11)	8.08 (3.99)	6.80 (4.58)	< 0.001	0.30
Time since HIV diagnosis	8.06 (5.18)	8.37 (5.11)	6.34 (5.20)	< 0.001	0.39

^a CD4+ T-cell count was stratified into three groups based on clinically meaningful cut-off points: < 200 cells/mm³, 201-499 cells/mm³, and > 500 cells/mm³.

Quality of life and depressive symptoms

Table 2 displays the mean and 95% confidence intervals (CI) for the study groups in relation to QoL domains and depressive symptoms. Regarding QoL, there was a significant multivariate effect of group (Wilks' Lambda = 0.99, $F(7, 1148) = 2.20$, $p = 0.032$, $\eta_p^2 = 0.013$). Subsequent univariate tests indicated that compared to their younger counterparts, middle-aged and older patients reported significantly lower scores in the physical ($p = 0.005$), independence ($p = 0.010$) and social relationships ($p = 0.028$) QoL domains.

In relation to depressive symptoms, the results also indicated a significant multivariate effect of group (Wilks' Lambda = 0.98, $F(2, 1153) = 14.67$, $p < 0.001$, $\eta_p^2 = 0.025$). Follow-up tests revealed that middle-aged and older patients reported significantly more somatic symptoms ($p = 0.001$) than did younger HIV-infected patients.

Table 2. Descriptive statistics on QoL domains and psychopathological symptoms (adjusted for covariates)^a

	< 50 years (<i>n</i> = 1009)	≥ 50 years (<i>n</i> = 185)	<i>F</i>	η_p^2
	Mean (95% CI)	Mean (95% CI)		
Quality of life				
Physical	63.90 (62.58-65.22)	58.85 (55.67-62.04)	8.04**	.007
Psychological	59.99 (58.82-61.16)	57.73 (54.90-60.55)	2.07	.002
Level of Independence	65.19 (63.88-66.49)	60.66 (57.51-63.81)	6.63*	.006
Social Relationships	61.27 (60.03-62.51)	57.55 (54.57-60.59)	4.84*	.004
Environment	56.49 (55.58-57.39)	56.21 (54.03-58.38)	0.05	.000
Spirituality	59.62 (58.22-61.02)	58.32 (54.95-61.69)	0.48	.000
Overall QoL	53.54 (52.30-54.77)	51.63 (48.64-54.62)	1.31	.001
Depressive symptoms				
Depression - cognitive	8.25 (7.78-8.72)	7.89 (6.75-9.03)	0.32	.000
Depression - somatic	5.77 (5.48-6.06)	7.05 (6.36-7.75)	10.90**	.009

^a Multivariate analysis of variance (MANOVA) adjusted for education, marital status, employment status, mode of HIV transmission, time since HIV diagnosis and presence of other co-infections.

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

Regarding the specific facets of QoL, significant differences were found in eight out of 29 facets. The results showed that younger patients reported significantly better QoL in the following seven specific facets: pain and discomfort ($p = .006$), energy and fatigue ($p = .011$), body image and appearance ($p = .016$), mobility ($p = .003$), activities of daily living ($p = .035$), dependence on medication and treatment ($p = 0.35$) and sexual activity ($p < .001$). In contrast, middle-aged and older adults showed significantly higher scores in the specific facet of financial resources ($p = .007$). The complete results are displayed in Table 3.

Table 3. Descriptive statistics on specific facets of the WHOQOL-HIV-Bref (adjusted for covariates)^a

	< 50 years	≥ 50 years	F	η_p^2
	(n = 1009)	(n = 185)		
	M (95% CI)	M (95% CI)		
Domain 1 – Physical				
Pain and discomfort	3.97 (3.89-4.04)	3.69 (3.52-3.87)	7.69*	.007
Energy and fatigue	3.38 (3.32-3.44)	3.17 (3.02-3.32)	6.53*	.006
Sleep and rest	3.21 (3.13-3.28)	3.08 (2.90-3.26)	1.46	.001
Symptoms of PLWHAs ^{b,c}	3.67 (3.59-3.75)	3.47 (3.27-3.67)	3.28	.003
Domain 2 – Psychological				
Positive feelings	3.80 (3.74-3.86)	3.67 (3.52-3.83)	2.30	.002
Cognitions	3.26 (3.20-3.32)	3.29 (3.15-3.44)	0.19	.000
Body image and appearance	3.56 (3.49-3.63)	3.34 (3.18-3.51)	5.84*	.005
Self-esteem	3.46 (3.39-3.52)	3.31 (3.14-3.47)	2.68	.002
Negative feelings	2.92 (2.86-2.99)	2.93 (2.77-3.09)	0.01	.000
Domain 3 – Level of Independence				
Mobility	3.83 (3.77-3.89)	3.58 (3.42-3.73)	8.90**	.008
Activities of daily living	3.51 (3.44-3.57)	3.33 (3.18-3.48)	4.47*	.004
Dependence on medication or treatment	3.75 (3.67-3.83)	3.53 (3.33-3.72)	4.47*	.004
Work capacity	3.35 (3.28-3.41)	3.29 (3.12-3.43)	0.61	.001
Domain 4 – Social Relationships				
Personal relationships	3.56 (3.50-3.62)	3.43 (3.28-3.58)	2.33	.002
Social support	3.50 (3.44-3.56)	3.43 (3.28-3.58)	0.71	.001
Sexual activity	3.11 (3.04-3.18)	2.74 (2.57-2.90)	16.18***	.014
Social inclusion ^b	3.63 (3.57-3.70)	3.62 (3.47-3.77)	0.03	.000
Domain 5 – Environment				
Physical safety and security	3.24 (3.18-3.30)	3.24 (3.10-3.38)	0.00	.000
Home environment	3.55 (3.49-3.62)	3.54 (3.39-3.69)	0.02	.000
Health and social care	3.67 (3.61-3.73)	3.60 (3.46-3.75)	0.63	.000
Financial resources	2.44 (2.38-2.51)	2.67 (2.52-2.81)	7.32**	.006
New information or skills	3.33 (3.27-3.39)	3.22 (3.08-3.36)	2.04	.002
Recreation and leisure	2.89 (2.82-2.95)	2.85 (2.69-3.01)	0.14	.000
Physical environments	3.37 (3.32-3.43)	3.34 (3.21-3.47)	0.18	.000
Transport	3.58 (3.53-3.64)	3.53 (3.38-3.67)	0.52	.000
Domain 6 – Spirituality				
Spirituality, Religion, Personal beliefs	3.55 (3.49-3.62)	3.43 (3.27-3.59)	1.67	.002
Forgiveness ^b	3.65 (3.57-3.74)	3.65 (3.44-3.85)	0.08	.000
Fear of the future ^b	2.97 (2.88-3.05)	2.95 (2.75-3.15)	0.16	.000
Death and dying ^b	3.36 (3.27-3.46)	3.31 (3.09-3.52)	0.40	.000

^a Multivariate analysis of variance (MANOVA) adjusted for education, marital status, employment status, mode of HIV transmission, time since HIV diagnosis and presence of other co-infections; ^b Items from the HIV module; ^c PLWHA: People living with HIV/AIDS

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

Factors associated with quality of life domains

To assess the contribution of sociodemographic, HIV-related characteristics and depressive symptoms on the QoL domains, HMR analyses were conducted separately for younger and middle-aged and older patients. Each model consisted of two blocks. Block 1 included the sociodemographic and HIV-related variables. In Block 2, the contribution of psychological variables was examined by adding the cognitive-affective and somatic depressive symptoms. No multicollinearity problems were detected in the regression models.

Patients aged 50 years or older

The models for the patients aged 50 years and older are displayed in Table 4. Overall, the most variance in the QoL domains was explained by depression symptoms (more consistently, the symptoms of the cognitive-affective domain). The explained variances ranged from 30.4% (spirituality) to 52.2% (psychological). The effect sizes attributable to the addition of depressive symptoms [Cohen's f^2] ranged from 0.30 (spirituality) to 0.79 (psychological).

For the *Physical* domain, the results showed that having fewer somatic and cognitive-affective depressive symptoms was significantly associated with increased physical QoL. Higher scores on the *Psychological* domain were significantly associated with more education, shorter time since HIV diagnosis, being on cART, and having fewer cognitive-affective depressive symptoms. Having a higher level of education, being on cART and reporting fewer cognitive-affective and somatic symptoms of depression were associated with higher scores in the *Independence* domain of QoL. Regarding the *Social relationships* domain, being employed, having other co-infections and reporting less cognitive-affective depressive symptoms were significantly associated with increased social QoL. Being employed and reporting fewer cognitive-affective depressive symptoms were associated with better scores in the *Environment* domain. Finally, significant associations were found between marital status, cognitive-affective symptoms of depression and the *Spirituality* domain. Overall, living with a partner and experiencing fewer cognitive-affective symptoms of depression were significantly related to increased perception of spiritual QoL.

Patients younger than 50 years

Similar to middle-aged and older patients, depression symptoms were the main variables significantly associated with the QoL domains. The explained variances ranged from 24.7% (spirituality) to 44% (psychological). The Cohen's f^2 associated with the addition of depressive symptoms ranged from 0.25 (environment) to 0.69 (psychological). The final models for the patients younger than 50 years are presented in Table 5.

Regarding the *Physical* domain, being employed, having more education and having fewer somatic and cognitive-affective depressive symptoms were associated with increased physical QoL. For the *Psychological* domain, being male, living with a partner, having more education, being employed, not having other co-infections and having fewer cognitive-affective symptoms of depression were associated with higher scores.

Table 4. Hierarchical multiple regression analysis of the variables associated with QoL domains among middle-aged and older patients

	Physical	Psychological	Independence	Social relationships	Environment	Spirituality
	β (p)	β (p)	β (p)	β (p)	β (p)	β (p)
Gender	.06 (.456)	.07 (.387)	-.06 (.431)	-.01 (.927)	.10 (.211)	.10 (.222)
Marital status	.00 (.986)	.11 (.171)	.04 (.607)	.14 (.091)	.14 (.080)	.17 (.041)
Education	.10 (.285)	.21 (.015)	.17 (.045)	.06 (.469)	.16 (.057)	.12 (.163)
Employment	.07 (.441)	.09 (.280)	.12 (.172)	.17 (.049)	.18 (.033)	.06 (.518)
Mode of transmission	-.09 (.316)	-.08 (.335)	-.05 (.542)	-.01 (.878)	-.05 (.530)	-.07 (.419)
Time since HIV diagnosis	-.15 (.095)	-.15 (.074)	-.13 (.124)	-.13 (.137)	-.09 (.302)	-.12 (.169)
HIV stage	-.09 (.341)	-.02 (.795)	-.15 (.078)	.06 (.459)	.05 (.542)	.01 (.876)
CD4+ T cell count	.09 (.318)	.05 (.562)	.09 (.294)	.11 (.203)	.03 (.707)	-.01 (.879)
cART	.12 (.202)	.20 (.025)	.25 (.005)	.17 (.054)	.16 (.061)	.10 (.285)
Other co-infections	.07 (.438)	.16 (.051)	.11 (.174)	.17 (.041)	-.04 (.668)	.14 (.095)
	$R^2 = .075$	$R^2 = .145$	$R^2 = .155$	$R^2 = .127$	$R^2 = .150$	$R^2 = .093$
Depression – cognitive-affective	-.28 (.006)	-.60 (< .001)	-.40 (< .001)	-.48 (< .001)	-.43 (< .001)	-.37 (< .001)
Depression - somatic	-.33 (.002)	-.05 (.601)	-.20 (.041)	-.16 (.097)	-.15 (.117)	-.14 (.211)
	$\Delta R^2 = .283$	$\Delta R^2 = .377$	$\Delta R^2 = .289$	$\Delta R^2 = .340$	$\Delta R^2 = .276$	$\Delta R^2 = .211$

Note: Gender [0 = Female; 1 = Male]; Marital status [0 = Living alone; 1 = Living with partner]; Employment status [0 = Unemployed or not currently working; 1 = Employed]; HIV stage [0 = Asymptomatic; 1 = Symptomatic/AIDS]; Mode of transmission [0 = Sexual; 1 = Other]; cART [0 = No; 1 = Yes]; Other co-infections [0 = No; 1 = Yes].

Table 5. Hierarchical multiple regression analysis of the variables associated with QoL domains among patients with less than 50 years

	Physical	Psychological	Independence	Social relationships	Environment	Spirituality
	β (p)	β (p)	β (p)	β (p)	β (p)	β (p)
Gender	.02 (.669)	.07 (.046)	-.05 (.125)	.01 (.803)	.05 (.193)	.13 (< .001)
Marital status	.00 (.997)	.08 (.032)	.07 (.046)	.14 (< .001)	.06 (.092)	.02 (.593)
Education	.05 (.132)	.09 (.019)	.14 (< .001)	.08 (.031)	.26 (< .001)	-.04 (.266)
Employment	.08 (.020)	.08 (.024)	.16 (< .001)	.06 (.132)	.08 (.018)	-.02 (.686)
Mode of transmission	-.02 (.543)	.02 (.574)	-.04 (.308)	.04 (.287)	-.04 (.344)	.04 (.290)
Time since HIV diagnosis	-.05 (.165)	-.03 (.470)	-.03 (.324)	-.04 (.297)	-.05 (.153)	.00 (.290)
HIV stage	-.13 (.001)	-.05 (.196)	-.10 (.006)	.00 (.918)	-.07 (.051)	-.07 (.098)
CD4+ T cell count	.03 (.397)	.04 (.365)	.14 (< .001)	.06 (.141)	.05 (.183)	-.03 (.542)
cART	.06 (.076)	.07 (.057)	.02 (.575)	.05 (.158)	0.7 (.050)	.06 (.110)
Other co-infections	-.15 (< .001)	-.10 (.008)	-.12 (.001)	-.12 (.002)	-.14 (.000)	-.04 (.333)
	$R^2 = .072$	$R^2 = .051$	$R^2 = .162$	$R^2 = .054$	$R^2 = .143$	$R^2 = .032$
Depression – cognitive-affective	-.09 (.027)	-.48 (< .001)	-.13 (.003)	-.36 (< .001)	-.26 (< .001)	-.46 (< .001)
Depression - somatic	-.48 (< .001)	-.20 (< .001)	-.37 (< .001)	-.15 (.001)	-.20 (< .001)	-.02 (.625)
	$\Delta R^2 = .280$	$\Delta R^2 = .389$	$\Delta R^2 = .198$	$\Delta R^2 = .215$	$\Delta R^2 = .171$	$\Delta R^2 = .215$

Note: Gender [0 = Female; 1 = Male]; Marital status [0 = Living alone; 1 = Living with partner]; Employment status [0 = Unemployed or not currently working; 1 = Employed]; HIV stage [0 = Asymptomatic; 1 = Symptomatic/AIDS]; Mode of transmission [0 = Sexual; 1 = Other]; cART [0 = No; 1 = Yes]; Other co-infections [0 = No; 1 = Yes].

Having more education, being employed, being asymptomatic, having a higher CD4+ T cell count, not having other co-infections and reporting fewer somatic and cognitive-affective symptoms of depression were significantly associated with increased scores in the Independence QoL domain. Regarding the *Social relationships* domain, the results revealed that living with a partner, not having other co-infections and reporting less cognitive-affective and somatic depressive symptoms were significantly associated with a better perception of social QoL. Regarding the *Environment* domain, the highest regression coefficients were observed for education, employment, cART and the presence of other co-infections. Specifically, having more education, being employed, being on cART, not having other co-infections and experiencing less cognitive-affective and somatic symptoms of depression were associated with better scores in environmental QoL. Finally, for the *Spirituality* domain, significant associations were observed for gender and depressive symptoms. In addition to having fewer cognitive-affective depressive symptoms, being male was significantly related to better spiritual QoL.

DISCUSSION

The present study analysed the age-related differences in QoL and depressive symptoms as well as the combined contribution of demographic, HIV-related variables and depressive symptoms to QoL domains separately for younger and middle-aged and older PLWHA. The main findings of this study demonstrate age-related differences in QoL and depressive symptoms as well as both similarities and differences regarding the factors that influence QoL domains in the different age groups. Middle-aged and older adults report decreased QoL when compared to younger PLWHA. Consistent with prior evidence [7, 10, 11], the differences are most marked in the physical, independence and social relationships domains. These findings differ from studies that did not find significant differences in QoL between older and younger patients [14] and studies that found that younger patients had decreased QoL when compared to older PLWHA [12, 13]. A possible explanation for this divergence may be the differences in the characteristics of the samples, specifically the diversity of age cut-offs used. As the cut-off of 50 years is increasingly used in HIV research, further studies are needed to confirm our findings.

Middle-aged and older patients show significantly lower QoL in seven of the 29 specific facets of the WHOQOL-HIV-Bref. The strongest differences are observed on items such as pain and discomfort and energy and fatigue (physical), body image and appearance (psychological), mobility, activities of daily living and dependence on medication and treatment (independence), and sexual activity (social relationships). These results, along with the magnitude of the observed differences, may help to explain why adults aged 50 years and older report lower QoL in the above-mentioned domains. The lower scores for pain and discomfort and for energy and fatigue in the older group are consistent with earlier findings [10], and the increased prevalence of comorbid conditions associated with the ageing process may also account for these results. Indeed, as among older adults without HIV, the presence of comorbidities seems to be a risk factor for a greater decline in physical function with ageing [48]. It is noteworthy that among older

HIV patients, these comorbid conditions appear to be associated with an even more significant decline in physical functioning [49]. Because symptoms such as pain, discomfort and fatigue are likely to contribute to further impairments in individuals' lives, it is possible that the lower scores on the independence QoL may also reflect the presence of these potentially disabling symptoms. The lower scores for dependence on medication and treatment reinforce these findings and are consistent with prior results [13]. These scores are also in line with the evidence suggesting an association between older age and more medical comorbidities as well as greater prescription of HIV and non-HIV-related medications, which results in frequent polypharmacy among these individuals [29, 50, 51].

The lower scores in social relationships seem mostly associated with the lower scores of the sexual activity facet, which is consistent with prior evidence showing decreased sexual function among patients aged 50 years and older [14]. Indeed, it has been shown that the prevalence of sexual activity decreases with ageing [52], which also seems to be the case for patients with HIV [53, 54]. In this context, it is possible that as HIV progresses more rapidly among older adults than their younger counterparts, the physical symptoms related to the disease may impact sexual desire and ability [55]. Furthermore, it is likely that older patients choose to reduce or end sexual activity in response to the HIV diagnosis, mainly because of fear of rejection, stigma and discrimination or even HIV re-infection [56]. In contrast, middle-aged and older adults report significantly higher scores in the specific facet of financial resources. This result is only partially consistent with the study of Skevington [13], who found a trend towards higher scores on financial resources among older adults (the difference was not significant, however). A possible explanation for our finding may be related to the participants' employment status. Although middle-aged and older patients were less likely to be employed (41.1% vs. 58.1%), they were more likely to be retired (35.3% vs. 10.9%), and they may have had fixed income from retirement. As a result, the higher proportion of middle-aged and older adults with a permanent income (76.4% vs. 69%) may account for this finding.

This study also shows that the presence of somatic symptoms of depression is significantly increased among middle-aged and older patients. This may be related to evidence suggesting that depression in older age presents differently than in younger adults [41]. Studies have shown that higher rates of somatic symptoms such as fatigue, sleep disturbance or memory complaints [42, 57] and lower rates of certain cognitive-affective symptoms are more prevalent in older adults [58]. These findings are consistent with the lower scores observed in the specific facets of the physical domain and highlight the importance of considering a differentiated screening process for depression in younger and middle-aged and older PLWHA. It is also important to note that many of these somatic symptoms can overlap with HIV [59]. Therefore, considering these different clusters of symptoms seems to be essential to improve the recognition of depressive symptoms in older PLWHA to consider their potentially different impact on QoL and, consequently, to deliver evidence-based interventions to this specific subgroup of HIV patients.

This study also finds that for both age groups, the variance in QoL domains

explained by sociodemographic and HIV-related variables is relatively small. Among middle-aged and older patients, the variance in QoL domains explained by these variables ranged from 7.5% to 15.5%, whereas among younger patients, the explained variances ranged from 3.2% to 16.2%. For both age groups, the cognitive-affective and somatic symptoms of depression accounted for the most variance in the QoL domains. The strongest and most consistent predictor of impaired QoL was cognitive depressive symptoms and, as expected, the most affected domain was the psychological domain. These findings can be explained by the well-known psychosocial burden of living with HIV and the associated stigma, which play an important role in the development of depression [60]. These findings corroborate the link between depression and impaired QoL among PLHWA that has been widely documented [26, 34, 43]. Given this association, these findings also underline the importance of clinical management and psychological interventions focused on both cognitive-affective and somatic depressive symptoms, which might improve the QoL of PLWHA. This is of major relevance as extensive research has shown that depression in HIV patients may result in negative treatment outcomes, such as reduced medication adherence [61, 62], higher risk of medical comorbidities [63] or even aggravation of HIV progression [38].

As noted, among middle-aged and older patients, lower scores for cognitive-affective depressive symptoms were consistently related to higher QoL in all six domains. In addition, higher education and being on cART were associated with higher scores for psychological and independence QoL, whereas being employed was related to higher scores in the social relationships and environment domains. In contrast, for younger patients, being employed, having a higher level of education, not reporting other co-infections and reporting lower depressive symptoms were more consistently related to higher QoL in the majority of the domains. In both age groups, the association between socioeconomic variables and QoL was expected, which is in line with earlier studies [17, 19-21, 25] and suggests that these variables are relevant across age groups. Indeed, regardless of age, these findings support the notion that employment influences overall health and QoL [18, 19] and might provide more than simply financial benefits by offering structure, a social support network, role identity and meaning [64].

However, some differences were also found between the two groups. Being on cART was significantly associated with higher psychological and independence QoL, but only for middle-aged and older patients. Despite the presence of more co-morbidities and a higher likelihood of polypharmacy, it has been shown that older adults have a reduced risk of non-adherence to cART when compared to younger adults [65]. These findings may indicate that middle-aged and older adults are more motivated to receive treatment and adhere more consistently to cART, which ultimately is reflected in better QoL outcomes. Among younger patients, the presence of other co-infections (in this study, the most frequent co-infection was Hepatitis C) was consistently related to poorer QoL, which is in line with previous findings [30, 31]. Interestingly, among middle-aged and older adults, the presence of other co-infections was associated with enhanced social QoL (and was marginally significant in relation to

psychological QoL). This result may be explained by the prevailing modes of HIV acquisition of our study sample. Indeed, the proportion of middle-aged and older patients with intravenous drug use (IDU) as a mode of transmission was significantly lower than that of younger patients (8.2% vs. 36.9%). The observed association, along with this sample characteristic, obtain therefore some support in the evidence suggesting that younger IDUs reported lower emotional well-being, social functioning and more fragile social support indicators [66], even in comparison to those aged 50 years and older with other modes of transmission. An alternate explanation is provided by prior results indicating that patients with more comorbidities and physical strain show greater levels of social support [67]. Future studies should be conducted to clarify this association.

This study has important strengths to acknowledge. These findings contribute to substantiating the literature on QoL among PLWHA, particularly in higher age groups, by providing evidence that QoL and its correlates differ between younger and middle-aged and older patients. By differentiating cognitive-affective from somatic symptoms of depression, as previously suggested [59], we may have removed the potential effects of overlapping symptoms of HIV disease and somatic depression and therefore contributed to a clearer association between the different clusters of depressive symptoms and QoL. Finally, the questionnaires that have been used to assess QoL in some studies do not always cover the spectrum of domains and facets that are reflected in the WHOQOL-HIV-Bref, or these studies may have limited their analyses to physical and mental summary scores. The use of this multidimensional instrument (with widespread use in HIV research) is therefore noteworthy. Furthermore, the WHOQOL-HIV-Bref offers an important approach to dimensions related to spirituality, which are clearly overlooked in most QoL measures.

Despite these strengths, some limitations should be noted. First, the cross-sectional design and the non-probabilistic sample require caution in interpreting and generalising these findings to the HIV population. All participants were recruited from health settings and were actively engaged in health care. Because of the cross-sectional design, any causal relationships are precluded; therefore, future longitudinal studies should be conducted to clarify the directions of the associations reported in this study. Second, this study consisted of a re-analysis of data from a wider research project. Specific variables related to older PLWHA (e.g., number and type of medical comorbidities) that were not collected may have explained additional variance in QoL. Although the study sample was of a considerable size, the number of patients aged 50 years and older was much smaller than the younger group. Additionally, the sample comprised a relevant proportion of middle-aged patients rather than the elderly (adults aged 65 years and older, as conventionally defined by the WHO). Future studies with larger subgroups of the older HIV population are warranted.

In sum, this study highlights the importance of developing age-appropriate interventions that meet the unique characteristics and needs of older PLWHA. Additionally, because depression negatively impacts QoL and our findings reveal significantly greater somatic symptoms of depression among middle-aged and older HIV patients, it might be important to increase awareness among this

population of the different forms in which depression may present (or, at least, to clearly examine whether these are somatic symptoms of depression or symptoms caused by HIV infection or its treatments) so that diagnosis and mental health interventions can be implemented in an earlier stage of the disease. To maximise the well-being of PLWHA, individual differences should be accounted for and age stereotypes should be precluded (e.g., stereotypes of older adults as sexually inactive). Future research that specifically focuses on the older population is crucial to understand how policies and interventions should specifically address middle-aged and older PLWHA. There is no doubt about the relevance of this issue as this segment of the population is likely to be most prevalent in the years to come.

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ESTUDO 2

Prevalence and correlates of psychological distress of middle-aged and older women living with HIV²

Abstract

Objectives: The aims of this study were to examine the prevalence and correlates of psychological distress among older women living with HIV in comparison to their male counterparts and younger women and to identify the sociodemographic and disease-related factors associated with psychological distress.

Method: The sample consisted of 508 HIV-infected patients (65 older women, 323 women aged below 50 years, and 120 older men) recruited from 10 Portuguese hospitals. Data regarding psychological distress were collected using the Brief Symptom Inventory (BSI).

Results: Seven older women (10.8%), eight older men (6.7%), and 61 younger women (18.9%) reported a T-score ≥ 63 for global severity index (GSI), indicative of a need for further psychological evaluation. Overall, younger women reported significantly higher psychological distress than older men. The odds of having clinically significant psychological distress score were significantly lower for older women reporting sexual transmission, while for younger women, having other co-infections was a significant correlate of higher psychological distress. Younger women were 2.67 (95%CI: 1.22-5.84) times more likely to report psychological distress than were older men. The odds were not significantly different from older women.

Conclusion: This study shows that older women do not differ substantially from younger women and older men in terms of psychological distress. The results reinforce, however, that mental health interventions should be tailored to reflect individuals' circumstances as well as developmental contexts. Moreover, they draw attention to the importance of examining resilience characteristics in older adults to understand the mechanisms behind "successful ageing" while living with HIV.

Keywords: Psychological distress; HIV infection; Middle-aged and older women.

² O presente estudo encontra-se formatado de acordo com as normas da revista *Aging & Mental Health*, na qual se encontra submetido.

INTRODUCTION

HIV infection is increasingly affecting adults over the age of 50 years worldwide. Recent estimates of the Joint United Nations Programme on HIV/AIDS (UNAIDS, 2014) have indicated that there are 4.2 million people living with HIV/AIDS (PLWHA) aged 50 years and older. In Portugal, adults aged 50 years and older represent 14.4% of all HIV cases, with approximately 26% of new HIV infections occurring in this segment of the HIV population (Directorate-General of Health [DGH], 2014). Regarding gender, half of all HIV-infected individuals worldwide are women (UNAIDS, 2014). In Portugal, women represent approximately 25% of the registered cases of HIV/AIDS. Although the HIV epidemic affects all people, its impact on women, and particularly on middle-aged and older (hereafter older for short) women, is often overlooked. A deeper understanding of this specific group is extremely important, as older women may experience singular types of psychosocial and psychological burdens (for a review, see Durvasula, 2014) that may increase their vulnerability and accordingly contribute to further impairments in their well-being and mental health.

The interest on mental health among individuals living with HIV has been evidenced in the literature since the beginning of the AIDS epidemic (e.g., Chuang, Jason, Pajurkova, & Gill, 1992; Collins, Holman, Freeman, & Patel, 2006). However, most mental health research in this area has relied largely on samples of younger individuals, with an overrepresentation of men. Consequently, little is known about the mental health needs and the psychological distress, as well as the factors contributing to the psychological distress of older PLWHA, particularly of older women. This is somewhat paradoxical because it has been recognized that female gender is one of the main predictors of psychological distress in HIV patients (e.g., Kennedy, Skurnick, Foley, & Louria, 1995; Nacher et al., 2010) and that older women with HIV are challenged with differing physical and psychosocial burdens (Durvasula, 2014). Older women with HIV are often stigmatized because of myths about ageing or sexuality (Vanable, Carey, Blair, & Littlewood, 2006) and have the added burden of being a caregiver while living with a chronic medical condition (Hackl, Somlai, Kelly, & Kalichman, 1997). These aspects may compound the risk for mental health problems (Major & O'Brien, 2005), as these experiences may serve as additional stressors and contribute to increased difficulties in psychological adjustment (Heckman et al., 2004). Because past evidence has indicated that mental health problems compromise patients' quality of life and adherence to antiretroviral treatment (Gonzalez, Batchelder, Psaros, & Safren, 2011; Sherr et al., 2008; Sumari-de Boer, Sprangers, Prins, & Nieuwkerk, 2012), increase complexity to treatment planning (Baillargeon et al., 2008) or even worsen the progression of HIV (Nanni, Caruso, Mitchell, Meggiolaro, & Grassi, 2015), it is crucial to address mental health issues among older PLWHA, and particularly among older women.

The presence of psychological distress has been demonstrated with both men and women living with HIV (Kagee & Martin, 2010; Shacham, Reece, Ong'or, & Basta, 2010). Nonetheless, prior literature has also suggested that psychological stressors are a key factor in the women's experiences of the illness

and that symptoms of psychological distress (particularly depressive and anxiety symptoms) are more prevalent among HIV-infected women, when compared to men (e.g., Gordillo et al., 2009; Pereira & Canavarro, 2011; Robertson et al., 2014; Wisniewski et al., 2005) or to uninfected women (Morrison et al., 2002). Regarding age differences, past research has shown evidence of decreased mental health among older HIV patients (Groves, Golub, Parsons, Brennan, & Karpiak, 2010; Heckman et al., 2002; Kasl-Godley, Gatz, & Fiske, 1998; Murri et al., 2003). Despite these findings, a recent literature review suggested that mental health outcomes are less age-dependent (Degroote, Vogelaers, & Vandijck, 2014). Among older women with HIV, to our knowledge, there has been limited research specifically addressing the prevalence of psychological distress. In a report cited by Durvasula (2014), this author found that 67% of older women in her dataset reported an Axis I diagnosis when compared to younger women (50%). Given this dearth of research, additional studies are clearly needed.

Research has also examined the sociodemographic and disease-related variables influencing mental health across multiple samples of PLWHA. Overall, studies have reported mixed findings. Nevertheless, there has been some consistency showing an association between better mental health and having a stable partner (Protopopescu et al., 2007), being more educated (Benoit et al., 2014; Murri et al., 2003), being employed (Blalock, McDaniel, & Farber, 2002; Rueda et al., 2011) and having a higher income (Hays et al., 2000). Regarding HIV-related variables, research has also provided mixed findings. A lower CD4+ T-cell count was associated with decreased mental health (Armon & Lichtenstein, 2012; Protopopescu et al., 2007), a longer time since HIV diagnosis was associated with both poorer (Zinkernagel et al., 2001) and better mental health (Rueda et al., 2011), and disruption of combination anti-retroviral treatment (cART) was associated with poorer mental health outcomes (Liu et al., 2006). As noted, these findings have been reported across multiple samples, most notably among younger PLWHA. Thus, it is possible that socio-demographic and disease-related variables may contribute differently to the psychological distress of older women, a focus that, to the best of our knowledge, has not been the subject of any past research.

In this study, the objective was to examine the prevalence and correlates of psychological distress among older women living with HIV, compared to their male counterparts and to women less than 50 years of age. A secondary objective was to identify the sociodemographic and disease-related factors associated with psychological distress within these groups. This knowledge is critical, as it may enable mental health professionals to develop and implement more targeted prevention and intervention programmes for women living with HIV.

METHODS

Participants and procedure

This prospective and cross-sectional study was part of a wider research project on the quality of life and mental health of Portuguese patients living with HIV. The study sample consisted of 508 HIV-infected patients attending the main departments of Infectious Diseases of Portuguese Hospitals (a total of 10 health institutions). After a detailed explanation of the study objectives, written

informed consent was obtained from all participants. Ethical approval was obtained from the Ethics Committee of all the institutions involved.

Patients were invited to participate in the research project while attending a consultation with their infectious disease specialist. The sample was recruited by convenience between September 2007 and July 2008. The recruitment procedures have been described with more detail elsewhere (Pereira & Canavarro, 2011). A total of 1,251 patients were consecutively recruited. Participants who did not complete the set of questionnaires (over 20% of missing data; $n = 54$) or did not report their age ($n = 2$) were excluded from the analyses. One participant was excluded because (s)he self-identified as transgender. Given the aim of this study, 686 participants (men aged below 50 years) were also excluded from the analyses. In total, 65 older women (12.8%), 323 women aged below 50 years (63.6%) and 120 older men (23.6%) were included in the study.

Measures

Sociodemographic and HIV-related variables

Sociodemographic and HIV-related data were obtained by self-report, and the latter were confirmed from medical records. Data were collected regarding sex, age, marital status, education, employment status, mode of HIV transmission, HIV stage, CD4+ T-cell count, year of HIV diagnosis, other co-infections, and combination anti-retroviral therapy (cART).

Psychological distress

Psychological distress was assessed with the 53-item Brief Symptom Inventory (BSI; Derogatis, 1993). Respondents were asked to rate the extent to which each identified problem had caused discomfort in the past week on a 5-point scale, ranging from “Never” (0) to “Very often” (4). The BSI assesses nine symptom dimensions (somatisation, obsessions-compulsions, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism) and three global indices. Raw scores were converted to T-scores with a mean value of 50 and a standard deviation (*SD*) of 10. The Global Severity Index (GSI), a summary index of psychological distress, was used as the primary outcome measure. According to Derogatis, participants with subscale or GSI T-scores ≥ 63 were defined as having clinically significant psychological distress. Therefore, a dummy variable was created to categorize individuals into one group if they had a T-score < 63 and into a second group if they had a T-score ≥ 63 (“caseness”). The Cronbach’s α ranged from 0.67 (paranoid ideation for older women) to 0.89 (depression for women aged below 50 years).

Data analysis

The data were analysed using the Statistical Package for Social Sciences (IBM SPSS 22.0; Armonk, NY). Descriptive statistics were calculated to examine the sample’s characteristics. A contingency table (χ^2) and univariate analysis of variance (ANOVA) were conducted to compare the three groups on categorical and continuous variables, respectively. A χ^2 analysis was also conducted to assess whether the study groups had different proportions of people above the threshold of the BSI (T-score ≥ 63) for being considered “caseness”. Multivariate analysis of covariance (MANCOVA) was used to test for group differences in the symptoms of psychological distress. A multiple logistic regression analysis was used to identify factors associated with psychological distress. Covariates in the

univariate analysis with a significance level $< .10$ were included in the multivariate model and displayed as odds ratios (OR) and 95% Confidence Intervals (CIs). A p -value of 0.05 was set as the cut-off point of statistical significance.

RESULTS

Participant characteristics

The sociodemographic and HIV-related characteristics are displayed in Table 1. Overall, older women were less educated, were more likely to be widowed and to be diagnosed with HIV for a shorter time. In addition, they were less likely to be single and to report HIV transmission through intravenous drug use (IDU). No significant differences were found regarding employment status, HIV stage, CD4+ T-cell count, cART or the presence of other co-infections.

Table 1. Sociodemographic and HIV-related characteristics of the study groups (N = 508)

	Women \geq 50 years (n = 65)	Women < 50 years (n = 323)	Men \geq 50 years (n = 120)	F/χ^2	η_p^2 / Cramer's V
Age (years)	57.58 \pm 6.07	36.56 \pm 6.73	57.98 \pm 7.17		
Education (years)	5.83 \pm 3.56	8.32 \pm 3.99	7.34 \pm 4.98	10.35***	.04
Time since HIV diagnosis (years)	5.52 \pm 4.87	7.85 \pm 5.09	6.79 \pm 5.33	6.29**	.03
Marital status				35.26***	.19
Single	4.6	33.4	20.8		
Married/co-habiting	49.2	42.2	51.7		
Separated/divorced	27.7	17.8	22.5		
Widowed	18.5	6.6	5		
Employment status				5.95	.11
Employed	29.2	43.0	47.5		
Not currently working	70.8	57.0	52.5		
Mode of transmission				336.44***	.58
Sexual intercourse with man	86.2	71.2	11.8		
Sexual intercourse with woman	0.0	0.3	67.2		
IV Drug use	3.1	22.3	10.9		
Blood products	7.7	2.2	6.7		
Unknown	3.1	4.1	3.4		
HIV stage				5.48	.07
Asymptomatic	60.0	64.4	67.2		
Symptomatic	16.9	11.2	16.0		
AIDS	16.9	17.2	13.4		
Unknwon	6.2	7.2	3.4		
CD4+ T-cell count				4.19	.07
< 200 cells/mm ³	23.2	18.6	19.6		
201 e 499 cells/mm ³	33.9	43.9	49.5		
> 500 cells/mm ³	42.9	37.5	30.8		
cART				3.68	.09
Yes	61.4	68.3	75.5		
No	38.6	31.7	24.5		
Other co-infections				3.98	.09
Yes	10.8	18.6	12.5		
No	89.2	81.4	87.5		

Note: Continuous variables presented as mean \pm standard deviation; categorical variables are presented as percentage (%).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Psychological distress

Results of the MANCOVA comparing the study groups on the nine dimensions of the BSI indicated a significant multivariate effect (Wilks' lambda = .93, $F(18, 952) = 1.83$, $p = .018$, $\eta_p^2 = .03$). Follow-up univariate tests indicated differences in four dimensions, with younger women with HIV reporting significantly higher scores than older men in the interpersonal sensitivity, anxiety, hostility and paranoid ideation dimensions. No significant differences were found between younger and older women or between older women and men. The mean and standard errors (*SE*) of the psychopathological symptoms of the BSI are shown in Table 2.

Table 2. Descriptive statistics (T-scores) on psychopathological symptoms for the three study groups (adjusted for covariates)

	(A)	(B)	(C)	<i>F</i>	Post hoc
	Women ≥ 50 years	Women < 50 years	Men ≥ 50 years		
	(<i>n</i> = 65)	(<i>n</i> = 323)	(<i>n</i> = 120)		
	<i>M</i> (<i>SE</i>)	<i>M</i> (<i>SE</i>)	<i>M</i> (<i>SE</i>)		
Somatization	52.29 (1.30)	51.28 (0.58)	48.93 (0.95)	3.00	
Obsessions-Compulsions	51.12 (1.35)	50.93 (0.60)	48.35 (0.98)	2.74	
Interpersonal sensitivity	49.51 (1.36)	51.49 (0.60)	47.93 (0.98)	4.88**	B > C
Depression	51.27 (1.35)	50.95 (0.60)	48.61 (0.98)	2.32	
Anxiety	51.27 (1.31)	51.16 (0.58)	46.71 (0.95)	3.48*	B > C
Hostility	48.49 (1.26)	51.27 (0.56)	47.40 (0.91)	7.20**	B > C
Phobic anxiety	50.50 (1.36)	51.37 (0.60)	48.81 (0.99)	2.43	
Paranoid ideation	48.81 (1.26)	50.88 (0.56)	47.62 (0.92)	4.84**	B > C
Psychoticism	49.34 (1.29)	50.65 (0.57)	48.48 (0.93)	2.04	
Global Severity Index (GSI)	50.56 (1.32)	51.25 (0.59)	48.02 (0.96)	4.12*	B > C

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Cases and non-cases prevalence

Regarding caseness (an indicator of the need for further psychological evaluation), there were significant differences in the proportion of individuals in the three groups. Table 3 indicates the percentage of the sample that scored above the criteria for caseness (T-score ≥ 63). Compared with older men, a greater proportion of younger women met caseness for interpersonal sensitivity, hostility and paranoid ideation. No significant results were found in the remaining comparisons.

Table 3. Proportion of the study groups meeting criteria for caseness

	Women ≥ 50 years	Women < 50 years	Men ≥ 50 years	χ^2	Cramer's <i>V</i>
	(<i>n</i> = 65)	(<i>n</i> = 323)	(<i>n</i> = 120)		
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)		
Somatization	13 (20.0)	50 (15.5)	11 (9.2)	4.57	.10
Obsessions-Compulsions	9 (13.8)	51 (15.8)	13 (10.8)	1.76	.06
Interpersonal sensitivity	7 (10.8)	57 (17.6)	7 (5.8)	10.79**	.15
Depression	12 (18.5)	52 (16.1)	12 (10.0)	3.28	.08
Anxiety	11 (16.9)	53 (16.4)	12 (10.0)	3.05	.08
Hostility	5 (7.7)	57 (17.6)	9 (7.5)	9.94**	.14
Phobic anxiety	11 (16.9)	54 (16.7)	11 (9.2)	4.15	.09
Paranoid ideation	8 (12.3)	54 (16.7)	7 (5.8)	8.94*	.13
Psychoticism	10 (15.4)	53 (16.4)	12 (10.0)	2.88	.08
Global Severity Index (GSI)	7 (10.8)	61 (18.9)	8 (6.7)	11.30**	.15

Correlates of psychological distress

In the univariate model (Table 4), for older women, the only mode of transmission was significantly related to increased risk of psychological distress (OR = 0.15, 95% CI: 0.03-0.86). The odds of having a clinically significant GSI score were significantly lower for older women reporting sexual transmission. Among younger women, the only significant correlate of increased psychological distress was having other co-infections (OR = 0.51, 95% CI: 0.27-0.97). Regarding older men, none of the variables were significantly associated with increased likelihood of psychological distress.

For older women, the multivariate logistic regression showed that none of the variables were associated with a GSI T-score ≥ 63 . Among younger women, the only factor independently associated with a higher likelihood of psychological distress was the presence of other co-infections (OR = 0.51, 95% CI: 0.26-0.99). Because in the male group only one variable was associated with a GSI T-score ≥ 63 for $p < .20$, the multivariate model was not computed.

Table 4. Univariate logistic regression for variables associated with GSI T-score ≥ 63

	Women ≥ 50 years		Women < 50 years		Men ≥ 50 years	
	OR [95% CI]	<i>p</i>	OR [95% CI]	<i>p</i>	OR [95% CI]	<i>p</i>
Age (years)	1.11 [0.99-1.25]	.075	1.01 [0.97-1.05]	.642	0.99 [0.89-1.10]	.803
Education (years)	0.82 [0.57-1.17]	.280	1.03 [0.96-1.10]	.477	1.04 [0.91-1.19]	.542
Employment status	2.70 [0.30-24.10]	.374	1.21 [0.68-2.13]	.518	0.90 [0.21-3.77]	.884
Marital status	1.33 [0.27-6.49]	.722	1.60 [0.89-2.89]	.115	1.07 [0.26-4.51]	.922
CD4+ T-cell count	1.00 [1.00-1.00]	.260	1.00 [1.00-1.00]	.604	1.00 [1.00-1.00]	.535
HIV stage	0.88 [0.18-4.28]	.870	0.59 [0.33-1.05]	.074	1.50 [0.29-7.80]	.630
Mode of transmission	0.15 [0.03-0.86]	.033	0.99 [0.54-1.83]	.985	0.82 [0.16-4.32]	.813
Time since HIV diagnosis (years)	0.96 [0.79-1.16]	.652	1.03 [0.97-1.08]	.369	1.11 [0.99-1.25]	.088
cART	0.60 [0.11-3.40]	.564	0.84 [0.40-1.73]	.629	0.42 [0.05-3.56]	.424
Other co-infections	0.69 [0.07-6.77]	.752	0.51 [0.27-0.97]	.041	-	-

Note: Employment status [0 = Employed; 1 = Unemployed or not currently working]; Marital status [0 = Living alone; 1 = Living with partner]; HIV stage [0 = Asymptomatic; 1 = Symptomatic/AIDS]; Mode of transmission [0 = Other; 1 = Sexual]; cART [0 = No; 1 = Yes]; Other co-infections [0 = No; 1 = Yes].

These analyses were also conducted in the total sample, adding the study groups as an independent variable. The univariate model (Table 5) indicated that compared to older men, younger women were 3.26 times more likely to report psychological distress (95% CI: 1.51-7.04). Living without a partner, advanced HIV stage, more time since HIV diagnosis and having other co-infections were associated with psychological distress at $p < .20$ and thus were included in the multivariate model. In the multivariate model, only the age-group was an independent correlate of psychological distress (OR = 2.67, 95% CI: 1.22-5.84). Reinforcing the results of the univariate analysis, younger women were almost 3 times more likely to report with a GSI T-score ≥ 63 , compared with older men.

Table 5. Univariable and multivariable logistic regression analysis of study variables associated with GSI T-score \geq 63

	Univariate analysis		Multivariate analysis	
	OR [95% CI]	<i>p</i>	OR [95% CI]	<i>p</i>
Study groups		.005		.027
Women < 50 years vs. Men \geq 50 years	3.26 [1.51-7.04]	.003	2.67 [1.22-5.84]	.014
Women \geq 50 years vs. Men \geq 50 years	1.69 [0.58-4.89]	.333	1.41 [0.46-4.29]	.548
Education (years)	1.03 [0.97-1.09]	.315	-	-
Employment status	1.23 [0.74-2.02]	.426	-	-
Marital status	1.59 [0.96-2.65]	.071	1.56 [0.91-2.68]	.104
CD4+ T-cell count	1.00 [1.00-1.00]	.590	-	-
HIV stage	0.68 [0.41-1.13]	.134	0.75 [0.44-1.28]	.291
Mode of transmission	0.76 [0.44-1.30]	.312	-	-
Time since HIV diagnosis (years)	1.04 [0.99-1.09]	.089	1.03 [0.98-1.08]	.225
cART	0.77 [0.41-1.45]	.426	-	-
Other co-infections	0.56 [0.31-1.01]	.055	0.66 [0.35-1.24]	.198

Note: Employment status [0= Employed; 1 = Unemployed or not currently working]; Marital status [0 = Living alone; 1 = Living with partner]; HIV stage [0 = Asymptomatic; 1 = Symptomatic/AIDS]; Mode of transmission [0 = Other; 1 = Sexual]; cART [0 = No; 1 = Yes]; Other co-infections [0 = No; 1 = Yes].

DISCUSSION

This study examined the prevalence and correlates of psychological distress among older women with HIV, compared to their male counterparts and to women less than 50 years old, as well as the sociodemographic and disease-related factors associated with psychological distress within these groups. The main findings indicated greater psychological distress among younger women when compared with older men (the odds of being assessed with clinically psychological distress was 1.22 to 5.84 times higher among younger women). A possible explanation may be the myriad of psychosocial stressors observed in HIV-infected women, such as financial, employment related stress and housing problems, caregiving tasks, relationship problems or even abandonment (Durvasula, 2014; Gurung, Kemeny, & Myers, 2004; Jenkins & Coons, 1996), which may not affect so prominently their male counterparts. These findings can also reflect a possible “successful ageing”, either related to greater resilience amongst older PLWHA, which has been recently highlighted in several studies (e.g., Emler, Tozay, & Raveis, 2011; Fang et al., 2015; McGowan et al., 2014; Moore et al., 2013) or a positive reappraisal, which has also been found to be related to enhanced mental health for older adults, particularly in the context of physical illness (Nowlan, Wuthrich, & Rapee, 2015). Despite HIV and age-related consequences, there has been evidence showing that older adults seem to demonstrate strengths and even decreased symptoms of depression and anxiety when compared to younger patients (McGowan et al., 2014). However, in our study, there was a trend indicating that older women reported higher scores than older men in all dimensions of psychological distress, although the results did not achieve statistical significance. Hence, there is no doubt that mental health issues are an essential topic, as this segment of the population is likely to be most prevalent in the years to come. The need for developing mental health interventions appropriate for age and gender is therefore of major relevance in the context of HIV.

Overall, 15% of the sample reported psychological distress beyond the threshold considered clinically significant for the BSI. This value is similar to those reported by other studies in which the same measure has been used (Shacham, Basta, & Reece, 2008; Basta, Shacham, & Reece, 2009). However, these results are lower than those reported recently by Benoit et al. (2014), although the fact that a different measure was used in their study (the Kessler Psychological Distress Scale) may account for this difference. Considering the study groups, the proportion was 10.8% among older women, 18.9% among younger women and 6.7% among older men. Regarding the BSI dimensions, the results indicated a higher prevalence among HIV-infected women, most notably among younger women and in comparison to older men. These results are consistent with prior studies indicating that symptoms of psychological distress were more prevalent among HIV-infected women when compared to men (e.g., Kennedy et al., 1995; Wisniewski et al., 2005; Gordillo et al., 2009; Robertson et al., 2014). To some extent, these findings also support those found in a study in the general population showing that young people experience a higher prevalence of psychological distress, compared with older groups, regardless of the presence of chronic medical conditions, sociodemographic, and other health-related variables (Chittleborough, Winefield, Gill, Koster, & Taylor, 2011). As well, they support earlier findings indicating an association between poorer mental health and younger age and female sex (Hays et al., 2000).

The mode of HIV transmission was a significant correlate of psychological distress among older women, with those reporting transmission through IDU being more likely to report clinically significant psychological distress. Recently, among HIV-positive women of all ages, Benoit et al. (2014) found that not reporting IDU in the last six months was associated with decreased psychological distress, which was partially in agreement with our results. A possible explanation may be the previous history of drug and substance, which has been shown to be associated with poorer mental health in HIV-infected patients (e.g., Degroote et al., 2013; Korthuis et al., 2008), including in all-female samples (te Vaarwerk & Gaal, 2001). As we do not have data regarding current drug use, future studies are warranted to better understand this association. As noted before, for older women, on-going substance abuse may serve as a barrier to successful coping with HIV (Psaros et al., 2015).

Among younger women, the presence of other co-infections (in this study, 44 out of 60 women with co-infections had hepatitis C virus [HCV]) was significantly associated with higher odds of psychological distress. This is particularly noteworthy as there has been evidence of a positive association between psychological distress and the presence of HIV in combination with other infections, and particularly hepatitis C (e.g., Baillargeon et al., 2008; Pereira, Fialho, & Canavaro, 2014; Yoon et al., 2011). However, because research in the area of co-infections has focused on mixed (predominantly male) or exclusively male samples, additional studies specifically focusing on women are needed. This is particularly relevant for younger women, as most are of reproductive age (in this study, 73.3% were below 40 years) and, for example, it has been shown that HIV/HCV co-infected mothers have significantly increased likelihood of vertical HCV transmission than do women with HCV alone (Polis,

Shah, Johnson, & Gupta, 2007).

This study has several limitations. The cross-sectional design and the convenience sample require caution in interpreting and generalizing these findings to the HIV population. All participants were recruited from health settings and were actively engaged in health care. Thus, patients who were not actively engaged in the medical system were not represented in this sample. It is possible that the rates of psychological distress observed in this study may differ from those who are not receiving this health care. Because of the cross-sectional design, causal associations cannot be identified; longitudinal studies should be therefore conducted to confirm the associations reported herein. Other specific variables that were not collected, such as social support, resilience characteristics or coping, could add significant inputs for our findings, specifically regarding the lower psychological distress in older PLWHA when comparing to HIV younger women. This would help to clarify the factors and/or mechanism underlying the concept of “successful ageing”. Although the overall sample was of a considerable size (and recruited from 10 different sites across the country), the number of women aged 50 years and older was much smaller than the younger group. Finally, the sample comprised a relevant proportion of middle-aged patients rather than the elderly (adults aged 65 years and older, as conventionally defined by the World Health Organization). Thus, these results must be viewed as preliminary and in need of replication and extension.

Despite these limitations, this study has important strengths to address. This study shows that psychological distress in PLWHA includes not only depression and anxiety but also a wide range of psychopathological symptoms that should be contemplated when considering mental health in HIV. In this context, the BSI offers an important approach, which has been widely used as a screening measure in mental health. Most importantly, these findings contribute significantly to the scarce literature on the mental health of middle-aged and older women with HIV, being, to the best of our knowledge, the first study examining the prevalence and correlates of psychological distress in this group of the HIV population.

Because middle-aged and older adults are slowly becoming recognized as a risk group for HIV infection, prevention, testing, diagnosis and, subsequently, treatment, may be delayed. As the prevalence of older PLWHA is expected to increase, addressing their mental health needs and recognizing the diversity of individual circumstances and developmental contexts are increasingly needed. In this regard, the training of age-specialized mental health providers is also of major relevance. As noted by Justice (2010), new treatment paradigms (encompassing a comprehensive and integrated care) are needed to cope with this emergent population. Finally, as psychological distress was not highest among the older age groups, our findings also draw attention to the importance of examining resilience characteristics of older adults to understand the mechanisms behind successful ageing while living with HIV. Importantly, a greater attention to younger women is also needed to prevent further impairments in physical and mental health.

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Conclusões

A presente dissertação teve como objetivo geral estudar a QdV e a saúde mental de um grupo ainda pouco analisado na área da infeção por VIH/SIDA, os doentes com mais de 50 anos. Pelo facto de, em termos de epidemiológicos, este segmento da população estar em grande crescimento, aliado à conceção atual da infeção por VIH como uma condição crónica de saúde, tornam este tema de extrema relevância. Com este objetivo geral, esta dissertação consubstanciou-se em dois estudos distintos.

No primeiro estudo, os principais resultados demonstraram que os doentes mais velhos manifestaram uma QdV significativamente mais baixa que os mais novos nos domínios físico, nível de independência e relações sociais, revelando também valores tendencialmente mais baixos nas facetas específicas. Para além disso, os dois grupos diferiram ainda nos sintomas de depressão apresentados, sendo que o grupo dos mais velhos demonstrou ter significativamente mais sintomas somáticos que o grupo correspondente aos doentes mais novos. No que respeita aos fatores associados aos diferentes domínios de QdV, os resultados demonstraram que, para ambos os grupos, a variância explicada pelas variáveis sociodemográficas e associadas ao VIH é relativamente pequena. Os sintomas depressivos (somáticos e cognitivo-afetivos) explicaram a maior parte da variância nos domínios da QdV, sendo que o domínio psicológico foi o mais afetado.

Em relação ao segundo estudo, focado fundamentalmente nas mulheres com idade superior a 50 anos, de forma geral, os resultados evidenciaram um maior *distress* psicológico nas mulheres mais novas comparativamente aos homens com 50 ou mais anos. Apesar de as mulheres com mais de 50 anos terem apresentado valores mais elevados que os homens do mesmo grupo etário, o estudo mostrou que estas não diferem significativamente dos restantes dois grupos em termos de *distress* psicológico. De forma geral, mais que uma questão de idade, este estudo reforçou a centralidade das questões de género na saúde mental dos doentes com o VIH.

Os dois estudos contribuem de forma substancial para a escassa literatura na população com mais de 50 anos que vive com VIH e fornecem informação pertinente para o desenvolvimento e implementação de intervenções direcionadas para a QdV e saúde mental desta população. De facto, foi possível evidenciar que os doentes de meia-idade e idosos diferem significativamente dos mais novos no que diz respeito à QdV e aos seus determinantes, assim como nos sintomas de depressão, o que realça a ideia de que a doença é vivenciada de forma diferente nestes dois grupos e de que as intervenções devem por isso ter em conta as suas particularidades. Mais especificamente, estes resultados realçam a importância de considerar um processo de avaliação da depressão diferente para doentes mais velhos que vivem com o VIH, dando especial atenção aos sintomas somáticos de depressão. Foi ainda demonstrado um possível “envelhecimento bem-sucedido”, o que chama a atenção para características de resiliência (ou outros recursos pessoais) presentes nos doentes mais velhos, que devem ser melhor analisadas em estudos futuros, uma vez que poderão ter um papel fundamental ao nível da intervenção. Além disso, foi também possível verificar uma maior vulnerabilidade

das mulheres para ter *distress* psicológico, o que evidencia a relevância de continuar a considerar o sexo feminino como central nesta área de investigação. “Sabe, o VIH não é o meu maior problema”, é o que afirmou uma das mulheres questionadas por Gurung e colegas (2004). De facto, as mulheres compreendem diversas particularidades nos planos físico e psicológico (Durvasula, 2014), que as colocam numa posição de risco para doenças do foro mental, assim como para diversos problemas de ordem financeira ou psicossocial.

O “envelhecimento” do VIH apresenta-se, sem dúvida, como um tópico de extrema relevância. O facto dos adultos mais velhos terem maior probabilidade de viverem sozinhos (Emlet & Farkas, 2002; Schable, Chu, & Diaz, 1996), de estarem em maior risco de isolamento, e de terem redes sociais mais pequenas (Emlet, 2006), reforça essa mesma importância. Embora estas alterações nas redes de apoio e no apoio social recebido também se verificarem na população geral mais velha (e.g., Cornwell, 2011; Marcum, 2012), a presença do VIH, pelo estigma que ainda lhe tem associado, pode agravar estes contextos. Deste modo, apresenta-se como necessário o reconhecimento da crescente relevância da população de meia-idade e idosa no contexto do VIH, assim como de que a mesma comporta grande heterogeneidade. Porque esta população ainda não é totalmente reconhecida como um grupo de risco (ou não se percebe como estando em risco), diversas estratégias podem e devem ser adotadas por forma a diminuir o risco de infeção neste grupo (e.g., desenvolvimento de campanhas de prevenção explicitamente dirigidas a este grupo etário), assim como o impacto da doença no mesmo. Uma vez que as questões relevantes para os doentes mais velhos com o VIH comportam problemas de diversas áreas (e distintas dos mais novos), torna-se essencial a presença de equipas multidisciplinares no planeamento e execução de programas de intervenção na saúde mental, com profissionais treinados especificamente para as particularidades deste grupo etário.

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