

HIV AND DEPRESSION: A SCOPING REVIEW OF THE SOUTH AFRICAN LITERATURE

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ABSTRACT

This scoping review attempts to contextualise the current state of research regarding responding to co-morbid depression and HIV in primary healthcare, identify the gaps in research and develop appropriate recommendations. The researcher used Arksey and O'Malley's six-stage scoping review method. The researcher reviewed articles from Springer Link, Ebsco Host, Pub Med and Psych Info that were found using the keywords 'depression'; 'HIV'; and 'primary healthcare' and that were published between 2010 and 2015. A final number of 27 articles were included in the scoping review. The review found that symptoms of depression in HIV positive patients can have a detrimental effect on their health-seeking behaviour and disease progression. Patients often do not report psychological symptoms of depression, unless enquired into, and usually focus on their physical symptoms. Additionally, there is a clear relationship between depression and antiretroviral treatment non-adherence and that treating depression with antidepressants or psychotherapy results in increased levels of adherence. Standardised and routine screening for depression in people living with HIV in primary care is the most ideal solution to this problem; a context-specific model that takes into account the shortage of resources in South Africa is greatly needed.

Keywords: Co-morbid; depression; HIV; primary healthcare; scoping review; South Africa.

INTRODUCTION



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Depression is a common and debilitating co-morbidity of HIV, with reported prevalence of 5% to 48% in HIV-infected adults (Moosa & Jeenah, 2012). The wide range of prevalence rates suggests that determining the true burden of depression in people living with HIV in South Africa is not regarded as important and as such recognising and responding to it is not a focus of primary healthcare consultations – the focus is ordinarily on laboratory results. This scoping review will attempt to contextualise the current state of research regarding responding to co-morbid depression and HIV in primary healthcare by identifying what is currently understood about the topic in South Africa, what research still needs to be conducted, and how this fits into policy and practice.

Untreated depression can lead to a number of negative consequences, such as unemployment, alcohol and drug abuse (Bongongo & Govender, 2013), sexually risky behaviour (Kitshoff, Campbell & Naidoo, 2012), and in extreme cases suicide (Cholera et al., 2014). Untreated depression in HIV positive people has the above and more detrimental consequences. Depression and HIV have a complex relationship; depression can be a result of living with HIV, it can be a risk factor for contracting HIV, or it can decrease adherence to and retention in treatment (See Figure 1) (Kitshoff et al., 2012).

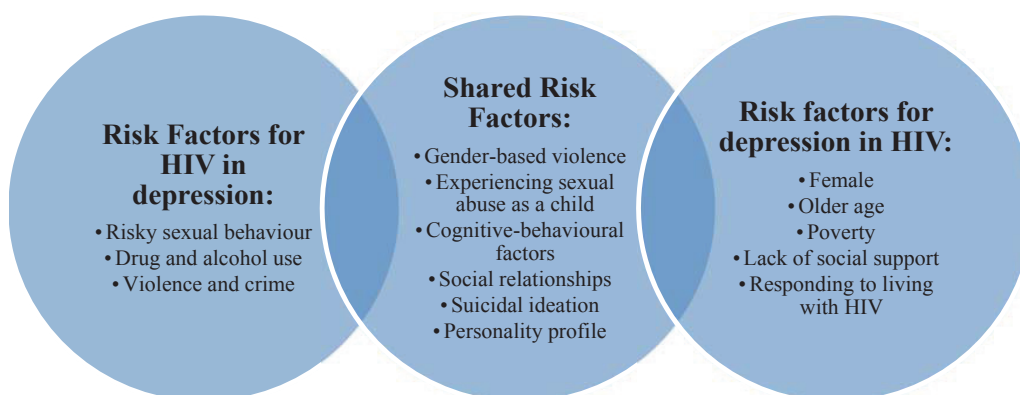


Figure 1: Overlapping Risk Factors for Depression and HIV

Some symptoms of depression reported by HIV-positive individuals can be considered to be directly related to the physical manifestations of the HIV infection such as feeling low in energy, or feeling that everything is an effort. Furthermore, some symptoms could be a natural reaction to having a life-long chronic illness – for example feelings of hopelessness, excessive worry about the future, or loss of interest in previously enjoyed activities (Kagee & Martin, 2010). Apart from the debilitating psychological symptoms of depression, it is also associated with faster HIV progression, lower CD4 cell count, decreased health-seeking behaviour (Kagee, & Martin, 2010) and it makes it more

difficult to adhere to antiretroviral therapy, which requires a 95% adherence rate to prevent developing a resistant strain of the virus (Kitshoff et al., 2012).

There are approximately 6 million South Africans living with HIV and only 2 million of them are on antiretroviral therapy (Shisana et al., 2014). If we intend to get the remaining 4 million HIV-positive individuals onto treatment, and keep the 2 million who are already on treatment adherent, identifying and treating depression is essential. To try and address the significant burden of depression, the integration of mental health into primary healthcare has been suggested as a means of increasing access to mental healthcare in low- and middle-income countries (Cholera et al., 2014). However, in order to achieve this, significant barriers will have to be overcome, for instance the stigma attached to the mentally ill of being violent and disruptive in clinics; the already overburdened primary healthcare workforce being resistant to taking on more responsibilities; and the lack of resources to treat patients' depression once they are identified. To overcome these challenges, it is crucial that a new approach is developed to identify and respond to HIV-positive patients suffering from co-morbid depression in primary healthcare using brief, easy-to-administer, screening tools and evidenced-based treatment options that do not have to be provided by a specialist.

METHODOLOGY

Scoping studies are described by Anderson, Allen, Peckham and Goodwin (2008) as studies that are concerned with contextualising knowledge by identifying the current state of understanding; identifying what we know and what we do not; and setting this within policy and practice contexts. A scoping review can be conducted for a multitude of purposes including: 1) to examine the extent, range and nature of research activity; 2) to determine the value of undertaking a full systematic review; 3) to summarise and disseminate research findings; 4) and to identify research gaps in the existing literature (Ehrich, Freeman, Richards, Robinson, & Shepperd, 2002).

The methodological framework used to conduct this scoping study was developed by Arksey and O'Malley (2005), who use a six-stage approach (See Figure 2). The next paragraphs will outline the method for this review, following the Arksey and O'Malley approach.



Figure 2: Scoping Studies Methodological Framework. (Adapted from Nanni, M., Caruso, R., Mitchell, A., Meggiolaro, E., & Grassi, L. Depression in HIV infected patients: A Review. 2015. *Current Psychiatry Reports* 17(530)).

Determine the Research Question

While the main aim of this review is to summarise and disseminate research findings, doing so could identify research gaps in the existing literature or result in the undertaking of a full systematic review. The questions being researched in this scoping study were:

- What does the academic literature (published in South Africa between 2010 and 2015) say about depression in HIV-positive patients? (Primary research question)
- What does the academic literature (published in South Africa between 2010 and 2015) say about identifying depression in HIV-positive patients?
- How has this research impacted South African policy, or how should it have?

Search Plan and Identification of Studies

The key words ‘depression’; ‘HIV’; ‘primary healthcare’; ‘identifying’ were used in various combinations with ‘South Africa’ to search for literature on Springer Link, Ebsco Host, Pub Med, and Psych Info. The search resulted in a total of 3757 results across all databases.

Develop Inclusion and Exclusion Criteria

Please see Table 1 for the exclusion and inclusion criteria.

Table 1: Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> • Sub-Saharan or South African Research/publications only • Must focus on depression • Must involve HIV-positive patients (and HIV-negative patients if there is a control group) • Limited to research at primary healthcare level • Published between 2010 and 2015 • Research must have involved adults only (above the age of 18) 	<ul style="list-style-type: none"> • Post/ antenatal depression • Children and adolescents

Chart the Data

Twenty-seven articles were entered, charted and analysed in Microsoft Excel™ using the Levac model (Levac, Colquhoun & O'Brien, 2010) whereby each study was described by title; author(s); year; study design; aim; method; measurement tools; and main findings (See Figure 3).

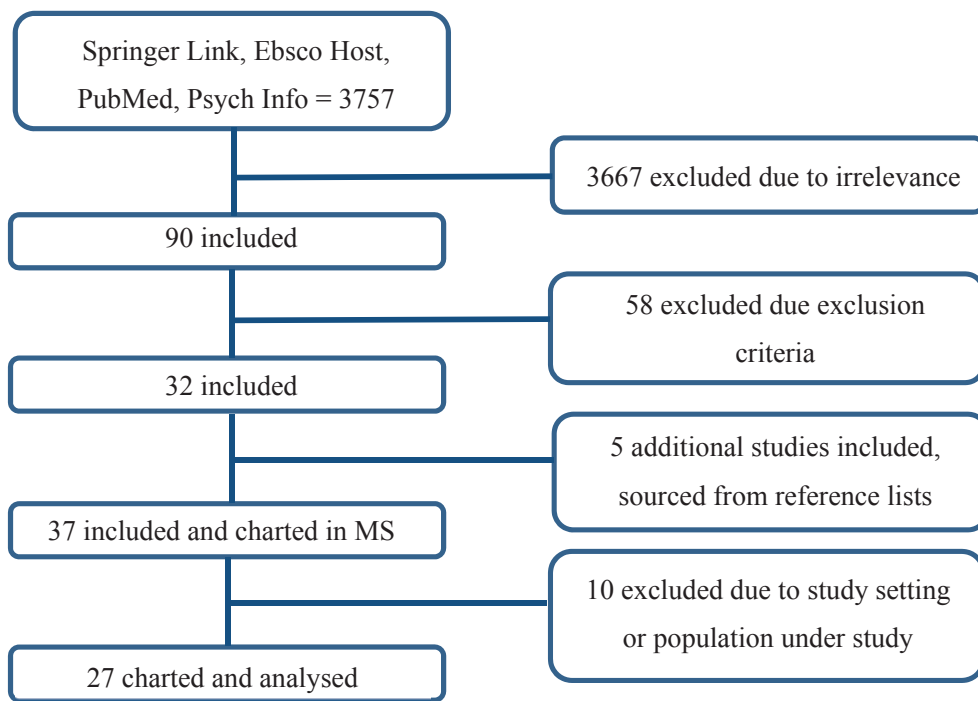


Figure 3: Study inclusion diagram

Thematically Analyse the Data

The following themes were found within the data:

1. Understanding the relationship between depression and HIV, both biological and cultural.
2. Screening instruments for identifying depression in HIV-positive patients.
3. The effect of depression on adherence to medication, specifically antiretroviral therapy.
4. Responding to depression in primary healthcare.

RESULTS

The Relationship Between HIV and Depression

It is well known that depression has a negative consequence on HIV progression and treatment (Kagee & Martin, 2010; Schlebusch & Govender, 2012). It is important to discuss this relationship within the South African context since factors such as culture and language greatly affect people's understanding of mental health and the presentation of symptoms of depression (Andersen, Kagee, O'Cleirigh, Safren, & Joska, 2015). In a study exploring the context and local understanding of depression in women living with HIV the researchers developed the following diagram (Figure 4) to describe the role of social factors in depression (Petersen, Hannas-Hancock, Bhana, & Govender, 2013).

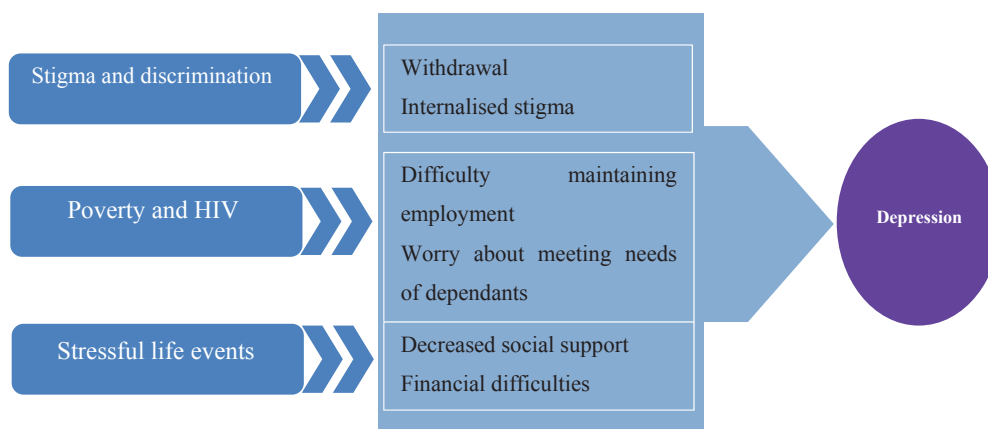


Figure 4: The role of social factors in depression in women living with HIV (Petersen, Hannas-Hancock, Bhana & Govender, 2013).

Symptoms of depression can occur at any stage of HIV; before diagnosis, directly after diagnosis, or as the disease progresses. Ramirez-Avila et al. (2012) examined the prevalence and correlates of depressive symptoms in adults who were surveyed before HIV testing and subsequently diagnosed with HIV in two outpatient clinics (one urban and one rural) in Durban, South Africa. The Mental Health section of the questionnaire used the Mental Health Index-5 (MHI-5), although it had not been validated in South Africa. The results showed that 55% of the participants surveyed before diagnosis had depressive symptoms according to their MHI-5 score and that participants with depressive symptoms were less likely than those without depression to obtain a CD4 count (Ramirez-Avila et al., 2012). A study conducted in Mpumalanga, assessing a sample of post-HIV testing clients with the Centre for Epidemiological

Studies Depression Scale (CES-D), found that 22% of the HIV-positive group screened positive for depression, compared with 13% in the HIV-negative group (Peltzer, Szrek, Ramlagan, Leite, & Chao, 2015). While the prevalence is lower than that found in the Ramirez-Avila et al. study, both show that symptoms of depression may develop before a person is aware of their HIV-positive status.

Suicidal ideation is one of the symptoms that can indicate the presence and severity of clinical depression. One-hundred and two patients (at a university-affiliated state hospital in Durban) who had attempted suicide and had cited a recent diagnosis of HIV (within the preceding month) as the primary reason for their suicide attempts, completed a mental state examination and their psychiatric diagnosis was checked against the Diagnostic Statistical Manual of Mental Disorders-IV criteria (Schlebusch & Vawda, 2010). On average, mood disorders, including depression, accounted for 80% of psychiatric diagnoses. In another study a sample of 157 HIV-positive people were screened for depression using the Beck Depression Inventory (BDI) 72 hours after their HIV diagnosis and then six weeks later. It was found that suicidal ideation was present in 17.1% of the HIV-positive sample at 72 hours, and that this had increased by 7% at six weeks (Govender & Schlebusch, 2012). The average BDI score 72 hours after diagnosis was 15.2 out of a possible 20 (<9 indicating minimal depression to 20 indicating severe depression) and at six weeks was 14.3 – both indicating clinical depression (Govender & Schlebusch, 2012).

Other symptoms of depression found by Anderson et al. (2015) in a group of HIV-positive people include affective symptoms such as sadness, loneliness, anger and irritability; somatic symptoms such as sleep disturbances and chronic fatigue, body pain, loss of appetite and diminished libido; cognitive symptoms such as thinking too much, difficulty concentrating and loss of interest in usual activities; and behavioural symptoms such as social withdrawal.

Research shows that the prevalence of depression decreases when people living with HIV are on antiretroviral treatment. Kagee and Martin (2010) found that patients receiving ARV treatment had a significantly lower mean score on the BDI when compared to those not receiving treatment. Kagee and Martin (2010) postulate that this could be a result of feeling more optimistic about the future and less hopeless due to their improved health. In similar studies, measuring the prevalence of depression in patients receiving ART, rates of 25% (Pappin, Wouters & Booysen, 2012); 69% (Bongongo & Govender, 2013); and 33% (Yeji et al., 2014) were found.

It is clear from the discussion above that symptoms of depression are highly prevalent in people living with HIV; however, many of the symptoms reported in the studies conducted can be perceived as the expected reaction to being diagnosed and living with a chronic disease, especially considering the significant stigma and discrimination that HIV-positive people face. Individuals who are HIV positive with co-morbid depression experience a 'double burden' of symptoms; the symptoms expected to result from a diagnosis of HIV as well as depressive symptoms. Due to this 'overlap' of symptoms, it

is understandable that HIV-positive patients often do not report the affective symptoms of depression that they are experiencing as explained in the research below.

A study conducted by Andersen et al. (2015) provide persuasive evidence of the need for routine screening for depression in this population. They found that the symptomatic presentation of depression, assessed through the CES-D and the MINI International Neuropsychiatric Interview (MINI), was distinctive in that somatic symptoms were most prominent in the patients' initial presentation, and that other symptoms such as affective or behavioural symptoms were not readily reported as patients did not perceive these to be relevant to their medical treatment. The most prominent somatic symptoms included sleep disturbances and chronic fatigue, body pain, loss of appetite and diminished libido. Another important study by Bongongo and Govender (2013) found that 69.2% of their sample of depressed patients who were on ART were unaware of the significance of their symptoms and as such would not have sought treatment unless they had been screened. This finding, read with the research conducted by Anderson et al. (2015), highlights the importance of healthcare workers actively enquiring about a patient's psychological symptoms as many will not readily report them. The next section will describe studies that have been conducted validating screening instruments for depression in people living with HIV.

Screening for Depression in HIV Positive Individuals

A number of screening instruments for identifying depression in primary healthcare have been developed across the world. However, a patient's culture, gender, and dominance of somatic symptoms can hinder the detection of depression, especially in self-reported screening tools (Nakimuli-Mpungu et al., 2012).

Cholera et al. (2014) explain that a limited number of validation studies for depression screening tools have been conducted against diagnostic reference standards in sub-Saharan African settings. The studies varied in their choice of context, screening tool, and diagnostic measure. In particular, the populations included in the studies, such as university students, pregnant or post-natal women, are not easily generalised to the primary healthcare or HIV-positive population (Cholera et al., 2014).

In response to this situation, Cholera et al. (2014) conducted a study that aimed to determine the validity of an interviewer-administered brief screening tool for depression in a high HIV burden, low literacy primary healthcare population. The researchers chose the Patient Health Questionnaire-9 (PHQ-9) as the brief screening tool and used the MINI for a reference standard. The PHQ-9 is a nine-item depression screening tool that determines the presence and frequency of the nine core depressive symptoms identified in the DSM IV (Cholera et al., 2014). Scores range from 0 to 27, with a score of 10 or higher typically used to indicate the presence of a depressive disorder that would benefit from treatment. The MINI is a short, structured diagnostic interview for major psychiatric disorders that has been validated in South African populations (Cholera et al., 2014). The

study was conducted at an HIV clinic in Johannesburg, with eligible patients selected randomly each day after registration, but prior to attending HIV counselling and testing. The patients completed the screening interview, which included administration of the PHQ-9, with a trained lay-interviewer. The questionnaire was translated into the five most common languages spoken in that area. After the screening interview, the patient completed the MINI interview with a healthcare professional who had been trained to administer it. The results showed that with a cut-off score of <10 , the PHQ-9 had a sensitivity of 78.7% and a specificity of 84.4% for the diagnosis of a depressive disorder that would benefit from treatment (Cholera et al., 2014). Cholera et al. (2014) concluded that the PHQ-9 showed high accuracy in correctly classifying cases of current major depressive episodes relative to the reference standard MINI (Cholera et al., 2014). The PHQ-9 was validated again in HIV-positive patients in Cameroon (Pence et al., 2012) using the Composite International Diagnostic Interview (CIDI) as the gold standard. The results showed that at a cut-off point of <10 , the PHQ-9 had a rather low sensitivity of 27% and a specificity of 94% for identifying cases of major depression (Pence et al., 2012). Pence et al. (2012) recognise that the sensitivity at the standard cut-off score was lower than many previous studies, especially in primary healthcare populations. They postulate that this may be because of the low literacy levels of the population and the low number of major depression cases (3%) (Pence et al., 2012). The results of this study underline the importance of diagnostic validation studies when applying a depression screening instrument in a new population.

Nakimuli-Mpungu et al. (2012) set out to translate and culturally adapt the Self Reporting Questionnaire (SRQ-20) for use in Uganda and to investigate its psychometric properties in HIV-positive patients attending a rural ART programme. The MINI was used as the gold standard in this study. The SRQ-20 is a brief questionnaire that can be interviewer- or self-administered, and is designed for common mental disorders (Nakimuli-Mpungu et al., 2012). It consists of 20 items designed to identify common mental disorders, including depression and anxiety disorders. A score of 1 is used if the symptom was present during the last month; a score of 0 if the symptom was absent, with a maximum possible score of 20. The SRQ-20 score distinguished well between subjects with and without current depression based on the MINI; with a sensitivity of 84% and specificity of 93% (Nakimuli-Mpungu et al., 2012). The researchers noted that the translation of some of the SRQ-20 items from English to Luganda was difficult and required the use of alternative conceptually equivalent terms. For example, the question 'Do you cry more than usual?' was culturally offensive to men because in the local Buganda culture it is strongly believed that men should not cry. In total, the researchers adapted five items to suit the local culture (Nakimuli-Mpungu et al., 2012). Another interesting finding of this study was that the most frequently reported symptoms on the SRQ-20 in this population were somatic complaints, as opposed to depression or psychological symptoms (Nakimuli-Mpungu et al., 2012). This adds strength to the findings of previous studies that show that among developing countries' populations,

depression is often expressed as somatic complaints. Screening tools that overemphasise psychological symptoms may underestimate the prevalence of mental health problems in these contexts.

In Zambia, 649 patients who had started either TB treatment or ART in the preceding month were selected to participate in a validation study of the CES-D (Chishinga et al., 2011). Participants were first interviewed using the CES-D and subsequently using the MINI. The optimum cut-off score used in screening for major depressive disorder was 22 – which resulted in a sensitivity of 73% and a specificity of 76% (Chishinga et al., 2011).

It has been suggested that patients who initiate ART should be routinely screened for psychiatric conditions; however, researchers have also cautioned that routine screening does have limitations and that it should only be undertaken in settings where it is possible to follow up and interpret positive results and where proper interventions are available (Nel & Kagee, 2011).

The decision of which screening instrument to use is a complex one and involves consideration of multiple factors such as the availability of follow-up mental healthcare; the cost of false positives versus the cost of false negatives; the availability of healthcare staff to identify cases of depression; literacy levels of patients; and cultural understandings of mental health. The PHQ-9 is the only brief screening tool that has been previously validated in South Africa among people living with HIV, and it showed high levels of sensitivity and specificity in this population (Cholera et al., 2014). However, it is recommended by the researchers that a larger-scale validation of the instrument among different population groups should be conducted in primary healthcare before it is endorsed for routine use.

Depression and Adherence to Treatment

While the success of ART in suppressing the HIV virus and improving survival rates is unquestionable, it is highly dependent on sustaining high rates of adherence; the minimum level of adherence required for ARVs to work is 95%, with non- or partial adherence potentially resulting in drug-resistant strains of the virus (Kitshoff et al., 2012). Common barriers to adherence to ARVs that have been identified in southern African contexts include fear of disclosure, alcohol use, traditional medicine use, feeling better on treatment, inadequate knowledge of the disease and ARVs, stigma, transport costs, lack of social support, discrimination, depression and hopelessness (Peltzer, Friend-du-Preez, Ramlagan & Anderson, 2010). A review of literature regarding mental health disorders and their effect on adherence to ART found that depression has been identified as the most important mental health-related barrier to adherence (Nel & Kagee, 2011).

Symptoms of depression such as low motivation, poor concentration, sleep disturbances, fatigue, and feelings of worthlessness – all have a clear impact on clinic attendance and adherence to medication (Nel & Kagee, 2011).

Peltzer et al. (2010) studied the factors that contribute to ARV adherence six months after commencement at three public hospitals in KwaZulu-Natal. Patients were interviewed by a trained Human Sciences Research Council researcher, with an anonymous questionnaire that requested information such as demographics, clinical history, health-related characteristics and health beliefs. Most notable to this scoping review is the finding that lower depression scores were significantly associated with higher adherence (Peltzer et al., 2010). However, in a similar study, researchers found that while 62% of their sample of patients on ART had higher-than-threshold levels of depression on the CES-D, it was not associated with non-adherence (Kitshoff et al., 2012). The researchers hypothesised that factors such as self-efficacy, the ability to express emotions, differing cultural expressions of psychological distress and complex adherence behaviour could have influenced the results (Kitshoff et al., 2012).

Unlike the study by Kitshoff et al. (2012) above, a study which used the BDI to determine the severity of symptoms of depression and their association with self-reported adherence to ART (Nel & Kagee, 2013) found a significant relationship between symptoms of depression and adherence. Nel and Kagee's (2013) results indicated that patients reporting non-perfect adherence were approximately three times more likely to have moderate to severe symptoms of depression than those reporting perfect adherence.

In a randomised control trial, conducted by Moosa and Jeenah (2012), it was found that treating depression in HIV-positive patients affects adherence to ART. The researchers selected 62 HIV-positive persons receiving ART at Chris Hani Baragwanath Hospital; 32 in the control group (not depressed) and 32 in the patient group (depressed). The depressed patients were put onto treatment; either psychotherapy or antidepressants. At entry to the study the mean adherence in the patient group was 92.1%, significantly lower than the control group (99.5%). At the end of the study the patient group's mean adherence increased significantly to 99.5%, while the control group increased slightly to 99.7% (Moosa & Jeenah, 2012). Following two months of treatment, the mean adherence rate of the depressed group increased significantly to >99%, independent of the type of treatment received (pharmacotherapy or psychotherapy) (Moosa & Jeenah, 2012).

Responding to depression in Primary Healthcare

As funding for ART programmes is limited, ensuring optimal adherence is essential, not only to decrease mortality and improve quality of life, but also to make these programmes financially sustainable. As evidenced in the previous section, depression has a detrimental effect on an HIV-positive individuals' ability to adhere to ART. To respond to this threat HIV-positive patients should firstly be screened for depression and secondly be provided with treatment options. As discussed in the literature in the preceding sections, a number of brief screening instruments for depression have been used and validated in sub-Saharan Africa among the HIV population. However, South

Africa faces several challenges that must be overcome before routine screening and access to treatment is a reality.

Firstly, in South Africa primary healthcare facilities are mainly run by nurses and often only have one doctor, who may not always be there (Cullinan, 2006). Nurses and other primary healthcare workers are already overextended and overburdened – requesting that they take on extra training, tasks and responsibility seems unjust. The Standard Treatment Guidelines for Primary Healthcare do not allow clinic nurses to prescribe antidepressants and most have had little experience in managing such patients. Currently patients identified with mental health problems are referred to special clinics. However, the use of nurses and community healthcare workers to provide public healthcare services, such as HIV counselling and testing, has been successfully implemented in South Africa in a number of programmes.

One solution may be to provide group-based counselling interventions, such as the intervention piloted by Petersen, Hannas-Hancock, Bhana and Govender (2014) in a randomised control trial. A group of HIV-positive patients were screened for depression using the PHQ-9, Hopkins Symptom Checklist (HSCL-25), and the Multidimensional Scale of Perceived Social Support (MSPSS) at baseline and at three month follow up. The intervention group attended group-based Interpersonal Therapy, with a lay counsellor, for eight weeks which addressed issues such as poverty, grief, interpersonal conflicts, internalised and externalised stigma. The analysis showed a significantly greater improvement in depression scores on the PHQ-9 at three months in the intervention group, compared to the control group (Petersen et al., 2014). There was also a significant improvement in the scores on the HSCL-25 scale for both groups, specifically for the intervention group the pre-test score was 2.59 and the post-test score was 1.97, both indicating the presence of depressive symptoms (Petersen et al., 2014). No significant difference was found on the MSPSS, though the researchers state that the scores were in the appropriate direction for the intervention group (Petersen et al., 2014). During interviews with the counsellors and some of the participants they reported that attending the group was valuable – addressing issues such as internalised stigma increased their self-esteem and reduced their social isolation, which in turn assisted them with hope for the future (Petersen et al., 2014).

Recommendations

In order to reach HIV-positive patients that are most at risk of experiencing depressive disorders, routine screening of patients not on treatment or those not adherent to treatment should be conducted. To this end, it is recommended that a pilot study be conducted to assess the integration of brief, routine screening for depressive symptoms into HIV treatment, as well as to assess the pathways patients have to mental healthcare once they have been identified.

CONCLUSION

This review has shown that sufficient research has been conducted to show that depressive symptoms in HIV-positive patients can have a detrimental effect on their health-seeking behaviour and disease progression (Nanni, Caruso, Mitchell, Meggiolaro & Grassi, 2015). HIV-positive patients often perceive their physical symptoms to be more medically relevant than their psychological or emotional symptoms, resulting in symptoms of depression not being reported by patients or being identified by healthcare workers unless actively investigated (Anderson et al., 2015). Additionally, there is a clear relationship between depression and ART non-adherence and that treating depression with antidepressants or psychotherapy results in increased levels of adherence (Moosa & Jeenah, 2012). The reviewers conclude that the relationship between HIV and depression in South Africa has been thoroughly researched; however, more research needs to be conducted into responding to this 'double burden' in primary healthcare, specifically the validation of the PHQ-9 in a more diverse sample.

Standardised and routine screening for depression in people living with HIV in primary healthcare is the most ideal solution to this problem. However, in South Africa, the primary healthcare system and its healthcare workers are already greatly overburdened. Research regarding context-specific models that take into account primary healthcare workers' workload; the availability and training of counsellors or community healthcare workers; and the availability of treatment options and care once a diagnosis is made, must be conducted.

The screening instrument that will be used must be carefully considered and tested within the primary healthcare context of South Africa, taking into account factors such as cultural implications and understandings of depression; language and literacy levels; and the cost of missing cases of depression versus the cost of incorrectly diagnosing depression. It is recommended by the reviewers that the PHQ-9, which has already been validated in this population, be considered as the standard tool for screening for depression in primary healthcare.

It is expected that by 2020, 90% of all HIV-positive people in South Africa will receive sustained antiretroviral therapy and 90% of those receiving ART will have viral suppression. As such, it is anticipated that this scoping review will prompt a response to this public health concern from the Department of Health and NGOs working in the public health sphere to move towards the development of a standardised model for routine screening for depression in people living with HIV.

Limitations and Trustworthiness of the Scoping Review

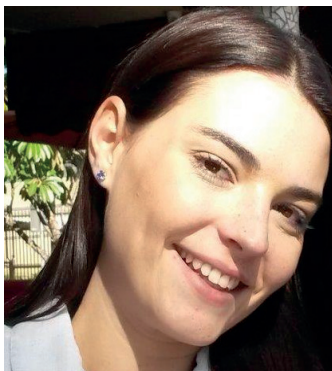
One limitation of this review is that only one researcher conducted the review, under the guidance and supervision of a second researcher; typically scoping reviews require more than one researcher. However, the researchers ensured the credibility of the results by following a structured and theoretical approach to sourcing, charting and analysing

the data. Additionally, the researchers only used well-known library databases to source the articles from, generally from journals that are peer-reviewed. Adhering to the inclusion and exclusion criteria in Table 1 ensured that only relevant articles were sourced, published between 2010 and 2015.

Authors' Contributions and Acknowledgements

Frances Slaven contributed to the majority of this article, under the guidance and supervision of David Cameron. David Cameron played a major part in conceptualising the research and assisted in interpreting the results and writing the manuscript. Frances Slaven sourced, screened, charted and analysed the data, interpreted the findings and wrote the manuscript. All authors approved the final manuscript.

BIOGRAPHICAL NOTES



FRANCES SLAVEN completed her Bachelor of Arts in Law in 2011 and a postgraduate Bachelor of Social Sciences Honours in Psychology in 2012 from the University of Pretoria. She completed a research fellowship with the Foundation for Professional Development in 2014 and has been with the Programme Evaluation Unit since. Her interests include mental health, gender-based violence and HIV/AIDS, particularly the interaction with and effect on each other.



DR DAVID CAMERON is a family physician with more than 40 years of experience in clinical and academic primary care with special interests in medical education, palliative healthcare, HIV/AIDS, programme evaluation and research. At the time of writing this article, Dr Cameron was a senior consultant with the Foundation for Professional Development, as well as chairing the Research Ethics Committee. Prior to that he was an associate professor in the Department of Family Medicine at the University of Pretoria from 1998 to 2015. Currently, Dr Cameron is providing palliative care to people with advanced illnesses along Cape Town's West Coast.

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