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A SYSTEMATIC REVIEW OF THE UTILITY OF PSYCHOLOGICAL ASSESSMENT TOOLS IN THE DIAGNOSIS AND TREATMENT OF PSYCHOPATHOLOGY IN SOUTH AFRICA POST 1994

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DECLARATION

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ABSTRACT

A psychological test encompasses any procedures which involve educational, occupational and psychological assessment as well as the measurement of dysfunctional (abnormal) or normal behaviours. In the context of South Africa, the field of psychological assessment is still met with suspicion due to how these tests were used in the past in ways which marginalised already disadvantaged populations within the country. The implementations of the Employment Equity Act in 1998 along with other legislative policies went some way towards improving psychological assessment practices in South Africa. However, despite attempts to improve the administration and use of assessment instruments, the topic of the utility of these tools in a South African context remains largely unanswered.

The aim of this study was to systematically review the available literature in the field of psychological assessment in South Africa in order to obtain in-depth understanding of the utility of psychological assessment tools in the diagnosis and treatment of patients with various psychopathologies. The study also aimed to identify the types of psychological assessment tools commonly used to diagnose and treat patients with various psychopathologies. Additionally, the study aimed to identify and focus on the barriers to using psychological assessment tools in a country as multicultural and multilingual as that found in South Africa as well as looking at the benefits of using these assessment tools.

This review was conducted in accordance with PRISMA guidelines. Studies included in the review were South African studies, conducted in the context of psychological assessment and published in English from 1994 onwards. Eight studies with heterogeneous study designs were included in the current review. Using the Critical Appraisal Skills Programme tool, all included studies were determined to be of high quality. The included studies were summarised and analysed using a thematic synthesis approach.

Five dominant themes were identified along with 19 sub-themes. The dominant themes included: (1) Barriers for assessment in the context of South Africa, (2) Description of Psychological assessments in South Africa, (3) Consequences of poor administration of psychological assessment tools, (4) Strategies to improve use of psychological assessment tools in South Africa, and (5) Benefits to utilizing psychological assessment tools in South Africa.

From this review, it is evident that the continued use of psychological assessment tools in the context of South Africa has some utility, specifically in the context of clinical settings. However, three main challenges were highlighted which may affect the perception of psychological

assessment in the country. These challenges included a lack of trained mental health care specialists to administer and interpret assessment tools. Secondly the linguistic and cultural differences within a country as multicultural and multilingual as South Africa calls into question the use of western developed and normed instruments in this context. Finally, the lack of financialresources to aid the training of future practitioners and the development of assessment tools within the country remains a challenge. Failure to address these challenges may lead to a renewedpublic mistrust of assessment instruments in addition to overburdening already strained health care facilities in the country. This review offers valuable insight for South African practitioners and policy makers. These insights might also be useful for other resource-constrained countries.

Keywords: *assessment tools, clinical setting mental healthcare, mental illness, psychological assessment, psychopathology*

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Chapter 1: Introduction

The topic of psychological assessment in South Africa remains a controversial one. This is due to how psychological assessment tools were used during the Apartheid era which has led to many viewing psychological assessment tools in a negative light (Heuchert, Parker, Stumpf & Myburgh, 2000). The field of psychological assessment and psychometrics, much like the field of psychology, continues to this day to fight against the negative bias linked to it as a result of its use during the Apartheid era where psychological assessment tools were used to justify discriminatory policies of the government and to justify the ideology of the time (Laher & Cockcroft, 2013). The legislation that came with a more democratic country aimed to redress the mistakes of the past by making sure that tests used on the population were fair, scientifically valid, reliable and unbiased. As a result of such legislation the field of psychological assessment in South Africa has made strides in the ensuing years. Some international tests used locally have been translated and normed for local populations and psychological assessment tools have been developed locally as well (Mitchell et al., 2018; Shuttleworth-Edwards, Gaylard & Radloff, 2013).

In a South African context, there are practitioners who argue for the use of psychological assessment tools however the use of these instruments is met with some skepticism by other clinicians in the field of psychological assessment (Lambert et al., 2001). Internationally the use of psychological assessment tools has been shown to be useful in diagnosis as well as tracking the effectiveness of a treatment plan in clinical settings (Gilbert, Allan, Nicholls & Olsen, 2005). These instruments are particularly useful when used as a complimentary tool to gain more information by practitioners (Lambert et al., 2001; Payne& Edwards, 2009). The field of psychological assessment still face a lot of challenges in South Africa. One such issue relates to the scarcity of resources when it comes to funding for psychological assessment-based research and as such a gap exists in the South African context interms of exploring the utility of psychological assessment tools in the diagnosis and treatment of psychopathology in a clinical setting (Laher & Cockcroft, 2017). There has also been an increased emphasis on evidence-based practice in the health care professions. The emphasis on these practices however has not been given the necessary attention required in the field of psychological assessment (Bornstein, 2016). This systematic review aimed to provide relevant information and evidence to policy makers in the field of psychological assessment.

1.1 Research Rationale:

Psychological assessment in South Africa has a long history dating back as far as 1915. The use of psychological assessment instruments in the public domain fostered skepticism and suspicion of the field. For example, the use of assessment by practitioners such as Fick (1929) played an important role in justifying the policies of the apartheid government (Laher & Cockcroft, 2014). The use of psychological tests developed and normed on White populations to assess other ethnic populations within South Africa was unethical and led to a very negative perception of the field of psychological assessment. This negative perception of psychological assessment has continued to leave practitioners divided as to its utility within South Africa. However, since the late 1980s and early 1990s the field of psychological assessment and psychology in general has made strides to address the wrongs of the past and with the aid of legislation such as the Employment Equity Act of 1998 there has been a movement to more ethical applications of assessment tools (Laher & Cockcroft, 2013).

The use of psychological assessment tools in clinical settings has been a controversial topic of discussion by practitioners, some practitioners argue that the use of psychological assessment tools in clinical settings remains problematic due to issues around its utility in a diverse country like South Africa. Barriers exist such as issues of language, culture and environment which could all influence results of assessments performed on patients (Laher & Cockcroft, 2013). The use of psychological assessment tools in clinical settings has however been shown to be useful in aiding the process of diagnosis by practitioners. The use of these tools by practitioners has also been shown to aid the development of a treatment plan as well as tracking of the implemented treatment plan (Dattilio, Edwards & Fishman, 2010; Edwards & Kenan, 2006; Payne & Edwards, 2009).

The implementation of the Employment Equity Act in 1998 went some way towards the direction of psychological assessment in South Africa. According to the Act, psychological assessment tools developed and used on South African populations are required to be scientifically reliable, valid and unbiased. Although the act existed, less information exists on how it was operationalized on assessment platforms such as assessment practices used in public settings. As a result, whilst there has been an increasing emphasis on evidence-based practice in health care professions, the field of psychological assessment has not received sufficient attention in this regard (Bornstein, 2016). This has led to unscrupulous use of tests in the public domain which go unchecked (Laher & Cockcroft, 2014).

The first step towards this is gathering the information around the field of psychological assessment in order to document how psychological assessment tools are being utilized. This will assist in highlighting how best to utilize psychological assessment tools in clinical settings. In addition to this, the information gathering process serves the purpose of highlighting the barriers to effectiveimplementation of psychological assessment tools. By documenting good practices as well as highlighting the challenges and barriers the researcher and his supervisor aimed to identify guidelines to more effective use of psychological assessment tools in diagnosis and treatment of patients with various psychopathologies.

1.2 Research Aims:

The aim of this study was to systematically review the available literature in the field of psychological assessment in South Africa to gain an in-depth understanding of the utility of psychological assessment tools in the diagnosis and treatment of patients with various psychopathologies. Thus, the study aimed to 1) identify the types of psychological assessment tools commonly used to diagnose and treat patients with various psychopathologies, 2) identify the types of people these psychological assessment tools have been used on, 3) identify and focus on the barriers to using psychological assessment tools in a country as multicultural and multilingual as that found in South Africa and 4) identify the benefits to using psychological assessment tools in South Africa.

1.3 Research questions:

1. What types of assessments are commonly used for diagnosis and treatment of psychopathology in a South African context?
2. Which populations have these assessments been used for?
3. What are the benefits of using psychological assessment tools in the diagnosis and treatment of psychopathology in a South African context?
4. What are the barriers to using psychological assessment tools in a multicultural and multilingual population?

Outline of the Report

This research report includes five chapters beginning with Chapter 1 which defines the focus of research report. Chapter 2 provides a review on existing literature in the field of psychological assessment with specific focus on the barriers as well as the benefits to the continued use of psychological assessment tools in a South African context. In addition, Chapter 2 also introduces the theoretical framework which was used to make sense of the findings of the research report. Chapter 3 describes the methodology thatguided the review procedures. Chapter 4 reports the findings of this review, more specifically, the resultsof the research process, the sample characteristics as well as the dominant themes identified across included studies. In chapter 5, the findings of this study are discussed by drawing on other existing literature in the field and present strategies that could address identified barriers to the continued use ofpsychological assessment tools in South Africa. Chapter 5 concludes with the limitations and the strengths of the current review and includes recommendations for further studies in the field of psychological assessment.

Chapter 2: Literature review

2.1 Introduction:

The field of psychological assessment is still met with a lot of suspicion in South Africa and in order to understand why this negative view of the field persists it is important to understand the history of psychological assessment and how it was applied was applied in the pre-apartheid and apartheid era (Foxcroft, 2011). Psychological assessment tools in South Africa were used indiscriminately and to serve a specific purpose and it resulted in local populations having suspicions of the utility of psychological assessment tools (Foxcroft & Roodt, 2013). Understanding how psychological assessment tools were used previous to the regime change in 1994 and prior to the implementation of the Employment Equity Act in 1998 makes it possible to see how the field has developed and attempted to redress some of the discriminatory practices of the past.

2.2. The troubled past of psychological assessment (1915-1948)

The field of psychological assessment within South Africa cannot be separated from the broader field of psychology. Both these fields harbour a dark and troubled past due to how they were used during the Apartheid era (Laher & Cockcroft, 2014). The troubled past of psychological assessment stretches as far back as 1915 where psychological tests normed and tested on a white population were used on minority populations. An example of such practices would be the use of psychological assessment tools normed on a white population and administered to black populations. The results of administering these types of assessment tools (e.g., intelligence tests) displayed that black populations performed poorer than white populations and these scores were then used as "scientific" proof of the white populations' superiority (Seedat & Mackenzie, 2008). The role of psychologists in aiding the dominant ideology of the time (The Apartheid ideology) cannot be overlooked and it is important to look back at such malpractice in order to understand how the broader field of psychology but more specifically the field of psychological assessment has grown (Foxcroft & Roodt, 2013). Psychological studies were performed on the African population by psychologists stretching back further than just during the apartheid era and one such example of unethical use of psychological tests can be seen with Fick's 1929 study. Fick used psychological tests that had been normed on white children to test the intelligence of black children. Initially Fick concluded that the poorer results obtain by black children were due to external factors such as the role of the environment and educational factors. However, he would

later state that the difference seen in nonverbal intelligence test scores between the two groups were most likely the result of innate differences between the two groups (Laher & Cockcroft, 2013).

2.3 The Apartheid regime (1948-1994)

The use of psychological assessment tools normed and standardised on a white population and used on the black population continued during the apartheid era from 1948. The poorer scores obtain by black people on these tests were used as justification for the allocation of resources (Laher & Cockcroft, 2014). International pressure disapproving of the discriminatory practices of the Apartheid regime grew from 1960 to 1984 and during this period international sanctions directly affected the field of psychological assessment in South Africa. International sanctions brought about an important shift for psychological assessment practices in South Africa. International assessment tools were no longer on the market for South Africa and this contributed to the following. Firstly, psychologists in the country had to become conscious of how their practices were being viewedon the international stage. Secondly psychological assessment tools had to be developed locallywhich brought about the next era of test development in the country (Abrahams, 2001). The National Institute of Personnel Research (NIPR) played an important role in test development in South Africa until 1984 however there were still discriminatory practices in test development within the NIPR. In terms of developing tests for clinical practice the Institute for Psychological and Edumetric Research (IPER) played a critical role until 1984. During the periodbefore 1984, the NIPR and IPER began developing tests locally which were developed for and normed on a predominantly white population. One such procedure developed by the NIPR was the silent-film technique that used mime to convey test instructions and as such introduced adaptability testing to the country (Seedat & Mackenzie, 2008). The NIPR and the IPER due to international sanctions being placed on South Africa became instrumental in developing local psychological assessments during this period. Tests such as the High School Personality Questionnaire, the South African Personality Questionnaire and the Jung Personality Questionnaire were developed and normed on a white population thus resulting in a bias against populations which had less exposure to western culture. Also, during this period in the 1970's until 1984 the researchers at the NIPR were frontrunners in the field of computerized testing developing the PsiTest and Siegmund systems in addition to research on the Austrian-based Vienna Testing System in South Africa (Tredoux, 2013).

In 1984 both the NIPR and IPER were incorporated into the Human Sciences Research Council (HSRC) which became the most influential organisation in terms of psychological test development in the country for over a decade (Laher & Cockcroft, 2014). Tests developed prior to 1994 were still primarily normed on white populations however the development of tests for other ethnic populations also began (Abrahams, 2001). It is important to understand the development of psychological assessment tools within South Africa for a number of reasons. Firstly, in order to understand why the field of psychological assessment is still met with scepticism by many in the country including practitioners such as Foxcroft (2011) who argues that psychological assessment, especially in a country as diverse as South Africa, is still a contentious area with many questions to answer. Furthermore, the public will most likely still view psychological assessment tools in a negative light as a result of how these tests were used and manipulated to support the ideology of the Apartheid government. In addition to the unfair policies that were implemented due to the unethical practices of psychologists (Laher & Cockcroft, 2013).

2.4 Psychological assessment post 1994

The field of psychological assessment within South Africa went through major changes post 1994. Previously tests were administered to the multiple cultural populations of South Africa with no consideration given as to the varying levels of inequality that existed. Furthermore, the poorer scores obtained by minority groups were used to justify resource allocation, job reservations and other social issues such as quality of education (Foxcroft, 2011). The field of psychological assessment was restructured and with the introduction of the Employment Equity Act in 1998 the use of psychological assessment tools needed to be fair, reliable and scientifically valid for use with populations in the country (Foxcroft, 2004). The HSRC was restructured and experienced test developers also retired or were relocated to other divisions and thus the development of tests to be used on multicultural populations such as those in South Africa slowed down (Foxcroft, 2004).

The development of psychological assessment tools in the ensuing years since 1994 has allowed assessment tools to be standardised for use on local populations. Tests such as the Wechsler Adult Intelligence Scale–Third Edition (WAIS-III) and the Learning Potential Computerised Adaptive Test (LPCAT) demonstrate how practitioners and test developers have attempted to develop and adapt psychological assessment tools which are fairer on the local population (Laher & Cockcroft, 2014). As societies around the world become more interconnected and with the

accelerated developments of technology, Psychology and the field of Assessment needs to consider the ever-changing context of the current times as we find ourselves moving closer towards the Fourth Industrial Revolution. The accelerated use of technology precipitated by the pandemic calls for the field of assessment to embrace technology in order to progress. International studies have already begun incorporating the use of social media platforms such as Facebook and Twitter to aid developments in field of personality assessments. An example of this was the use of the Five Factor Model personality traits with big data from social media sites like Facebook and Instagram to attempt to predict personality (Harris & Bardey, 2019). However, with the recent developments in the field a myriad of issues that still need to be explored within this space also became clearer. These issues include the use of pre-existing data not necessarily collected for assessment purposes, issues around whether this data can effectively be used for validation or norming. In addition, issues such as the reliability, criterion and predictive validity of such information and the ethics of using this type of data are all concerns which will need to be addressed and answered as the field advances to the Fourth Industrial Revolution (Iliescu & Grieff, 2019; Laher, 2020).

2.5 Psychological assessment tools in clinical settings

The use of psychological assessment tools in clinical settings is another area within the field of psychology and more specifically psychological assessment which is much contested with some practitioners arguing for its utility in the care of patients while others remain quite sceptical (Foxcroft, 2011; Payne & Edwards, 2009). The use of psychological assessment tools can be a valuable source of information for practitioners with regards to understanding patient dynamics. Tools such as the Adult Psychological Symptoms Checklist can be used as additional sources of information for the clinician gain further information about the range of characteristics or symptoms which might have been missed or not sufficiently gathered during the clinical interview (Gilbert et al., 2005). Psychological assessment tools are not only useful in terms of the diagnostic process by helping the clinician gain further information about the client or patient but information from these tools can further contribute to developing a case formulation which will form the basis of atreatment plan. However, while these tools serve an important purpose with regards to gathering of information, how the clinician chooses to use the information is up to his/her clinical judgement (Laher & Cockcroft, 2013).

Psychological assessment tools can be used in both the screening and the diagnosis of patients. Screening tools refer to brief psychological measures which can be used to assess individuals for a range of mental health conditions (Strand, 2005). Screening measures are often questionnaires completed by clients. Screening tests are quick to administer but results are only indicative and require further investigation. Diagnostic instruments refer to psychological assessment measures that can support a qualified clinician in making a formal diagnosis of a mental health problem (Strand, 2005). These instruments can be in the form of semi-structured diagnostic interviews and validated questionnaires as well as items in self-report measures used for diagnosis which often bear a close correspondence to criteria specified in the diagnostic manuals such as the Diagnostic and Statistical Manual of Mental Disorders (DSM). Those that are sceptical of the use of psychological assessment tools in clinical settings argue against the use of tools such as the Beck Anxiety inventory (BAI), the Beck Depression Inventory-II as well as the Post-traumatic Diagnostic Scale (PDS) as such tools are normally validated in the USA or the UK. The use of these tools may be appropriate with some populations in South Africa who may share similar socioeconomic and educational backgrounds(Steele & Edwards, 2008). However, they may not be valid with other groups within the country(Laher & Cockcroft, 2013). Instruments such as the Draw-A-Person test are predominantly used in childcare psychiatric units in South Africa, especially in the case of Psychology interns and the use of such assessments is done for the purpose of establishing differential diagnoses (Foxcroft, Paterson, Le Roux & Herbst, 2004). For the purposeof assessing personality in clinical settings around the country, the Millon Clinical Multiaxial Inventory (MCMI) and the Minnesota Multiphasic Personality Inventory (MMPI) have often been used. Cognitive assessments such as the Wechsler Adult Intelligence Scale (WAIS) and the Senior South African Individual Scale - Revised (SSAIS-R) are examples of instruments that can provide additional information sources for clinicians. The use of a battery of assessment tools in psychiatric facilities around the country aids clinicians to further understand the patient and to develop a treatment plan specifically geared towards the needs of the individual/patient (Foxcroft et al., 2004)

2.6 Barriers affecting psychological assessment in South Africa

The field of psychological assessment faces a lot of difficulties, there are many considerations that need to be made when planning to develop tests to be used in multicultural/multilingual populations. Among these are issues of language as the use of tests on populations in South Africa need to think about different aspects of language with regards to test administration such as how proficient the test population is in the language. In addition, factors such as how languageproficiency will be determined need careful consideration (e.g., questionnaire which

assesses language proficiency) (Foxcroft, 2011). Within a country like South Africa educational background also needs consideration. This country continues to be plagued by issues of inequality due to unethical practices of the past regimes. Individuals from rural areas may not have had the same quality of education as those from urban areas and such factors require consideration (Foxcroft & Roodt, 2009). There is also an issue of multiculturalism, different cultures may understand the same construct differently. For instance, in the west intelligence is thought of as how clever a person is while in the east intelligence is viewed as being wise and thoughtful and psychological tests need to be aware of such differences (Foxcroft, 2004).

South Africa faces a considerable challenge when it comes to the use of psychological assessment tools to diagnose and treat patients. Previous studies which have reported on psychological assessment in South Africa have shown that factors such as language and culture influence test performance and in a country like South Africa with 11 official languages this poses a serious challenge to test developers and practitioners alike (Patterson & Uys, 2005). The problem is further exacerbated by the use of psychological assessment tools developed internationally which pose a serious problem when it comes to translation of these tests for use on local populations. For over a decade the lack of culturally appropriate psychological assessment measures has been identified as an issue (Foxcroft & Roodt, 2009). The issue of translating tests from different countries is complex for a number of different reasons. One particularly difficult and complex aspect of translating psychological assessment tools is semantics as the meanings behind certain items may be interpreted differently by individuals of different cultures. This may be based on their background and how certain terms are conceptualised in different environments (Branco e Silva & Laher, 2012).

The development of psychological assessment tools particularly in the past was not very sensitive to aspects of culture and environment which influence how certain populations would perform in those tests. Psychological tests are closely linked to the context they were developed and initially used in, therefore in order for such instruments to be deemed fair they would have to use items and constructs which are common in all cultures where the test will be used (Foxcroft, 2011). There has been a growing recognition that tests developed internationally need to be revised and normed for use on local populations and while this has been a growing trend as tests such as the Kaufmann Assessment Battery for Children (KABC) has been used widely around the sub-Saharan region of Africa (Bangirana, 2011). There have been issues raised by other practitioners such as Foxcroft (2011) who argue that studies which aim to adapt western-developed tests for use in the African context often have their own limitations. These limitations include small sample sizes which means that the results of those studies often are not representative of the larger demographic of these countries.

2.7 Theoretical Framework

The study utilized a knowledge production theoretical lens, particularly looking at the shift from Mode 1 knowledge production to Mode 2 knowledge production proposed by Gibbons et al. (1994). This theory can be used to explain the development of psychological assessment in South Africa. The shift from the industrial era to the post-industrial era brought about a shift in the way knowledge was produced. Previously knowledge production was quite insular in nature, there was a hierarchical structure to knowledge production and problems were posed by those in academia and solved by the very same people (Etzkowitz & Leydesdorff, 2000). This form of knowledge production is known as Mode 1 knowledge production and is characterised by discipline specific forms of knowledge, this form of knowledge production encourages separation between researchers and knowledge produced is only accountable to other academics in the form of peer review procedures (Gibbons et al., 1994).

Mode 2 knowledge production arose from the shift from an industrial society to a knowledge society. This form of knowledge production emerges not from academia but from practice, it is problem-orientated and is non-hierarchical. Mode 2 knowledge production is transdisciplinary and believes that solutions to societal problems requires that there be an interaction between a broader set of actors, from the scholars to those indigenous to the context of the problem and accountability extends beyond just academia (Moravec, 2007). This mode of knowledge production is more attuned to the practical problems of society and is more responsive to those needs as well as the practical problems of the economy. This mode of knowledge production is participatory and involves diverse social actors including marginalised social groups and advocates empowerment of the selected research community throughout the research process (Jacobs, 2000).

An example of Mode 1 knowledge production is the use of intelligence tests normed on a white population in South Africa during the Apartheid era. The WAIS (Wechsler Adult Intelligence Scales) and how it was administered previously is an example of Mode 1 knowledge production; researchers and clinicians were only accountable to their peers, the test was used extensively across all racial groups without being standardised for use with local populations (Claassen, Krynauw, Paterson & Mathe, 2001). As South Africa became democratic and there was a need to redress psychological assessment tools, researchers addressed the need for more up-to-date standardisation of the WAIS consulting local experts in the assessment field (Claassen et al., 2001). The interaction between researchers and those indigenous to the context in order to address a problem present in society which was a need for a suitable intelligence test which could be used on South African populations is an example of Mode 2 knowledge production (Moravec,

2007). The development of the WAIS and how it has been used within South Africa is an example of the shift from Mode 1 knowledge production to Mode 2 knowledge production. The study therefore aimed to understand previous forms of knowledge production in the field of psychological assessment as well as how knowledge has recently been produced in the field of psychological assessment in South Africa and also aimed to find ways to improve the effectiveness of knowledge production in the field to increase its benefits for society.

2.8 Conclusion

In this literature review the researcher gave a brief history of the field of psychological assessment in South Africa. The field of psychological assessment in South Africa is faced with a lot of difficult challenges it needs to address however due to the scarcity of financial resources as well as the scarcity of skilled practitioners progress on developing and adapting tests suitable to use on a multicultural and multilingual population remains slow (Laher & Cockcroft, 2014). I have highlighted the different era within which assessment tools were used as well as described how they were used. I have highlighted current conflicts in the field as well as some perceptions of practitioners in the field of psychological assessment. The barriers to the use of psychological assessment were also highlighted and finally the chapter was concluded by a discussion of the knowledge production theoretical lens that was used as the overarching frame to operationalize the review. The next chapter outlines the methods that were used in this study.

Chapter 3: Methods

3.1 Introduction

In this chapter the researcher presents the methods that were followed in conducting the study. The first section that is discussed and explained in this section is the reasoning behind the choice of research design, which is a systematic review. Following on from this section the researcher provides an overview of the procedures that were followed in the review process which is then be followed by a more explicit explanation of the seven steps that were followed in the review process. These steps were as follows: formulating clear and answerable review aims/objectivesas well as clearly defined questions, the next step is developing review protocols followed by identifying relevant studies. The next step is evaluating individual studies followed by synthesizing the data found in each study, after this the next step was to integrate the data found and finally conclusions and recommendations were made based on the data collected and analysed. This chapter will conclude with a brief ethical statement as well as a short reflection on my role as the researcher in this study.

3.2 Research design

A systematic review method was used to conduct this study. Systematic reviews make use of an explicit and reproducible methodology to identify and select all relevant studies, critically appraising the selected studies and assessing the risk of bias, extracting data and synthesizing the findings of selected studies to answer specific research questions (Higgins & Green, 2011). Using this framework, the researcher ensured that a set of predetermined steps were followed to increase transparency as well as limit bias, both of which improve the validity of reported findings (Higgings & Green, 2011). This is done in an attempt to provide a high-quality form of evidence on a particular field of interest. This study therefore used a systematic review method to identify, evaluate and summarize all relevant data from selected individual studies which focused on psychological assessment in clinical settings thereby making evidence more accessible to decision makers.

The study was guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Liberati et al., 2009). The PRISMA statement consists of a 27-item checklist deemed essential for transparent reporting. Systematic reviews require that information in a given area be fully reported and transparent to allow the reader to assess the strengths and

weaknesses of a given investigation. In addition, the use of the PRISMA checklist negates the possibility of poor reporting which could diminish the usefulness of a given study (Hassem & Laher, 2019; Moher et al., 2015)

3.3 Review procedures

For the purposes of this study the researcher made use of the structured framework proposed by Vandenberg etal. (2016) which consists of seven steps to guide the systematic review process. The first step is formulating the review question which consists of defining the overall objectives/problems and formulating specific answerable review questions, this step is covered under both research aims and questions (refer above). The second step is developing the protocol and this step consists of documenting all the steps involved in the review process explicitly to allow readers to reproduce the study (as is being done in the methods section).

The third step is identifying the relevant studies, this step consists of deriving the exclusion and inclusion criteria, comprehensively searching for all relevant data, designing a search strategy as well as documenting the search process. For Step three the PRISMA four-phase flow diagram was utilized, the flow diagram allowed me to depict information collected throughout the different phases of the systematic review which then enabled me to map out the number of studies identified, included and excluded as well as the reasons for excluding studies (Moher et al., 2015). The fourth step is evaluation of individual studies. This step consists of evaluating the qualities of individual studies identified in the previous step (Step 3). The CASP (Critical Appraisal Skills Programme) is a quality assessment tool which I used for the purpose of assessing the quality of individual studies identified (Critical Appraisal Skills Programme, 2017). A more detailed description of the choice of quality assessment tool will be given below.

The fifth step summarizes, evaluates and synthesizes the data identified in each study. The purpose of this step is to summarize relevant data from the individual studies evaluated in Step 4, and to synthesize the data within each study. The SPIDER (Sample, Phenomena of interest, Design, Evaluation, Research type) framework was then used to guide the fifth step. In the process of using this framework to guide data synthesis content analysis was also used to identify the tests used and the populations within the included studies (Cooke, Smith & Booth, 2012). Thematic synthesis was then used to synthesize qualitatively due to its value in synthesising qualitative research to facilitate more effective and appropriate health care (Thomas & Harden, 2008). The sixth step is integrating evidence across all streams, the purpose of this step was to

integrate the streams of data that were assessed in the previous step (Step 5) and assessing the overall strength of evidence/data found within the studies. The seventh and final step included conclusions, recommendations, uncertainties and consequences and this step concludes the review process, the main aim within this step was to assess the results of the review and make conclusions based on those results and furthermore recommendations were made based on the analysis of the results. These steps and the procedures that were followed are described in more detail hereunder.

3.3.1 Step 1 (Formulating review aims and questions)

The aim of this study was to systematically review the available literature in the field of psychological assessment in South Africa to gain an in-depth understanding of the utility of psychological assessment tools in the diagnosis and treatment of patients with various psychopathologies. Additionally, the study also aimed to identify the types of psychological assessment tools commonly used to diagnose and treat patients with various psychopathologies as well as the types of people these psychological assessment tools have been used on. Finally, the study aimed to identify and focus on the barriers to using psychological assessment tools in a country as multicultural and multilingual as that found in South Africa. With this in mind the current study aimed to answer the following research questions with regards to psychological assessment in the context of South Africa:

1. What types of assessments are commonly used for diagnosis and treatment of psychopathology in a South African context?
2. Which populations have these assessments been used for?
3. What are the benefits of using psychological assessment tools in the diagnosis and treatment of psychopathology in a South African context?
4. What are the barriers to using psychological assessment tools in a multicultural and multilingual population?

Systematic reviews are seen as crucial in the pursuit of evidence-based practice particularly in the health sciences as they play an important role in informing health care decisions (Methley, Campbell, Chew-Graham, McNally & Cheraghi-Sohi, 2014). Systematic reviews have traditionally been carried out in a similar manner, this entails using an objective and primary quantitative approach where an exhaustive search is conducted in an attempt to identify all relevant articles which are then integrated and assimilated through statistical analysis (Methley et al., 2014). The comprehensiveness of the search process has been viewed as a key factor in

preventing bias and providing an accurate representation of available research. Whilst traditionally guidance related to systematic reviews has focused on the review narrowing down the research participants (P), interventions (I), comparative interventions (C), outcomes of interest (O). This has been called into question as it could lead to an inability of the review identifying more qualitative articles thus calling into question the exhaustiveness/comprehensiveness of the search (Methley et al., 2014). For the purpose of my research the SPIDER (Sample, Phenomena of Interest, Design, Evaluation & Research type) framework was used with the intention of locating all relevant studies as the PICO framework might miss more qualitative/mixed methods studies (Cooke, Smith & Booth, 2012).

3.3.2 Step 2 (Develop the protocol)

The following section explicitly documents the search process I conducted which involved three separate steps. In an attempt to be as transparent as possible and to allow for reproducibility I have indicated the dates when each of these steps were conducted which allows for a clear timeline of the review process, dates were indicated in parenthesis. The first step involved conducting a search of databases using specific search terms in an attempt to identify all relevant studies. In an attempt to make data collection more manageable I used a reference manager software (Zotero) to document all citations, abstracts as well as full text articles. All databases that were accessed for this review had a function that allowed me to export all identified citations directly onto the Zotero software, I then screened all titles and abstracts using the pre-determined inclusion/exclusion criteria. The final step included screening the full-text articles of those studies that I identified for possible inclusion in the review based on the abstract screening (September – October 2018). Following on from this section, below I will outline the rationale for the different sources that I accessed as well as the rationale for the search terms that I used as well as how the inclusion/exclusion criteria was implemented during this process.

3.3.3 Step 3 (Identify relevant studies)

Research for the current study was accessed using seven electronic databases, available through the online WITS Library website, these databases allowed access to a range of relevant research in the field of psychological assessment and mental health. The databases used included; PsycInfo, PsycARTICLES and PubMed. Databases such as EBSCO and Science Direct were also used to give access to larger databases however these were also more general. Databases such as Sabinet but in particular Africa-Wide Information were used to increase the possibility of

locating studies published in the African continent and in particular South Africa which may not appear in more European or western databases. The table below summarises the databases used and the specific reasons for selecting these databases.

Figure 1 Databases used and reasons for selection

Database	**Reason for Selection**
PsycInfo	Provides access to relevant research in the field of mental health
PubMed	Provides access to relevant research in field of general and mental health
EBSCO	Provides a broad multidisciplinary search of scholarly literature globally
Science Direct	Provides a broad multidisciplinary search of scholarly literature globally
Africa-Wide	Provides access to interdisciplinary publications which are relevant to Africa
Sabinet	Provides access to literature from African electronic journals as well as African Digital Repository (includes theses & dissertations)
PsycARTICLES	Provides access to a broad range of psychological and behavioural science research/literature.

Search terms and strategy: The following search terms were used in the current study: "psychological assessment" "South Africa" "Mental health" "Assessment tools" "Clinical Psychology" "Psychiatry" "Psychopathology" "Africa" "Mental illness" "Clinical setting" which were all designed to locate relevant studies for the purposes of this review. The search focused on locating published studies in the English language. At a later stage of the search process, I cross-checked studies which were included for citations to search for studies which may potentially be relevant that were not identified through sources mentioned above. The initial search proved to be too narrow and there were an insufficient number of studies identified which took place in

clinical settings and as a result the search strategy was broaden and “clinical setting” was taken out of the search terms.

Inclusion/exclusion criteria: For the purposes of determining/assessing eligibility individual study titles and abstracts of studies which were identified from the chosen databases were screened. Studies which fell outside the inclusion criteria or those that meet the exclusion criteria were then excluded. Following on from this, the next phase of the inclusion/exclusion criteria required that I examine the full-texts of the remaining studies in order to determine their eligibility for the purpose of the review.

For studies to be deemed relevant for inclusion they must have satisfied the following criteria;

(1): They must be primary research,

(2): They must have been conducted in the context of psychological assessment tools used in South Africa,

(3) They must have been published from 1994 onwards.

The reason for considering only studies post 1994 (i.e., the last 25 years) was that around that time a very important change occurred in the country with a democratic constitution and changing of both legislation aswell as ideology with the aim of redressing the inequalities and mistakes of the previous regime and this extended to the use/misuse of psychological assessment tools.

Studies which met one or more of the following criteria were excluded:

(1) They were review articles or not primary research

(2) they looked at psychological assessment tools which were not focused on screening and diagnosis of psychopathology

(3) studies focused on a more general population of Sub-Saharan Africa and not primarily South Africa

(4) they were published in a language other than English.

During every stage of the review process, I documented reasons for exclusion of studies. The most common reasons for exclusion will be provided alongside some citations as examples in the results chapter of this study.

For the purposes of this study the framework that was used to guide the extraction of relevant data was the SPIDER (Sample, Phenomena of interest, Design, Evaluation, Research type) framework. The reason for using this tool to guide both the search process as well as the data synthesis process was that the tool aims to comprehensively search for qualitative and mixed-method studies which has been difficult using the PICO tool (Cooke, Smith & Booth, 2012).

3.3.4 Step 4 (Evaluation of individual studies)

Individual studies that were found to meet the eligibility criteria following the screening process (full-text screening process) then underwent quality assessment which was used to reduce the risk of bias within each study. The purpose of using a quality assessment tool was to evaluate aspects of the study that might influence the interpretation of the results such as the selection, validity, reliability, and/or sensitivity of the methods used (Vandenberg et al., 2016). The quality of individual studies was assessed using the CASP checklist tool (Critical appraisal skills programme) the reason for selecting this tool to assess the individual quality of studies was due to its accessibility (user friendly) as well as its flexible checklist which could be used for qualitative studies as it primarily is used for but can also be adapted to assess the quality of other study designs (Critical Appraisal Skills Programme, 2017). There are other quality assessment tools which were deemed inappropriate for the current study, tools such as the Cochrane risk of bias tool were designed specifically for assessing randomised control trials (RCTs) (Higgins & Green, 2011).

Quality Assessment of individual studies

Studies which were found to be eligible following the full-text screening process then underwent a quality assessment procedure. Quality assessment is seen an important part of a systematic review, it aims to reduce biases in the review process including biases in the primary research studies which are contained within this review (Hannes, Lockwood, & Pearson, 2010; Thomas & Harden, 2008). I used two different quality appraisal tools for eligible quantitative and qualitative studies, both are part of the CASP quality assessment tools however one of these (the quantitative tool) has been adapted slightly (Hassem & Laher, 2019).

I assessed the quality of the qualitative studies which were deemed to be eligible using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist Tool (Appendix C). The CASP Qualitative Checklist Tool consists of a 10-item checklist which was designed in the

context of systematic reviews to assess the quality of qualitative studies (Critical Appraisal Skills Programme, 2017). The 10 items are designed to review the clarity of the research aims, the appropriateness of the chosen methodology, the research design and how suitable it is to the study, the chosen recruitment strategy, whether the methods of data collection align with the previously stated research aims, the influence of the researcher on the study and whether it was critically examined, consideration of ethical issues, how rigorous the data analysis was in the study, the clarity of findings presented, and lastly the value of the research to the existing body of knowledge and understanding. Furthermore, various researchers have used the CASP Qualitative Checklist Tool for systematic reviews conducted in the Sub-Saharan African health context (see Colvin et al., 2013; Gourlay, Birdthistle, Mburu, Iorpenda, & Wringe, 2013; M'kumbuzi & Myezwa, 2016), and so it was deemed suitable for the present work.

For the purpose of assessing eligible quantitative studies, I used an adapted version of the CASPQualitative Tool (Hassem & Laher, 2019). (see Appendix D). Available quantitative quality assessment tools, such as the Cochrane Risk of Bias Tool (Higgins & Altman, 2008), were designed specifically for randomised control trials whereas the CASP Tool is user friendly and could easily be adapted to assess a variety of quantitative study designs.

The included studies were given a score on a range of 0-10 and were then classified according to the risk of bias ranging from "low risk" to "high risk". When deciding on a threshold for the current review I decided to use a score of 7/10 as the lowest useable score for the studies. In the next chapter I outlined the CASP rating of the eligible studies. I provided a table summarising the quality of each study under the item criteria including; aims, method, research design, recruitment strategy, data collection, researcher role, ethical issues, data analysis, findings, and value of research contribution (see also National Institute and Care Excellence, 2012).

3.3.5 Step 5 (Summarize and evaluate each data stream)

For the purpose of managing the data that I extracted from each of the studies included in this review I constructed a table which allowed me to extract relevant data in an efficient and manageable way. The next step of the review was to extract data relevant to the review and to achieve this I provided an overview of the characteristics of the study (context, population, methodological design etc.). The extracted texts were then subjected to a process of analysis, content analysis was utilised to aid with analysis of the extracted data. Content analysis is a flexible research tool that can be used in both quantitative and qualitative research. It is used to determine the frequency or repeated presence of certain words or concepts within a text or sets of

texts, these words will then be grouped and categorised by the researcher into smaller themes or phrases and inferences will be drawn from these (Hsieh and Shannon, 2005). In addition to content analysis, thematic synthesis was used to analyse the data which has been extracted and analysed, the reasoning behind using thematic synthesis in this study is because of the growing recognition for its value in synthesising qualitative research to facilitate more effective and appropriate health care (Thomas & Harden, 2008). Thomas and Harden (2008) proposed a three-step approach for thematic synthesis of qualitative systematic reviews: the first step is line by line coding of the text; the second step involves the development of descriptive themes and the third step involves the creation of analytical themes. While the development of descriptive themes remain close to the original content/findings of the included studies, analytical themes seek to move beyond the original information contained in the included studies to create/generate new hypothesis, concepts and understandings (Thomas & Harden, 2008). I used Microsoft Word to capture and structure data electronically as well as to assist me in the process of managing and synthesising the data.

To allow the data to be structured in an efficient and easily accessible manner the researcher decided to use three data extraction tables, each of these tables covered different subsections and these three tables also allowed the relevant extracted data to be recorded in a transparent manner. The first table was “Study characteristics” and the subsections include: title of article, author(s), publication date, journal of publication, the geographical context of study, as well as the types of assessment tools used. The second table was “Study design” and the included subsections were: Research aims, research design, participants, sampling methods, methods of data collection as well as methods ofdata analysis. The final table was “Study findings” and included the subsections: Findings, conclusions, recommendations, and limitations. The completed tables are provided in summarised format under Study Characteristics in the Results chapter.

3.3.6 Step 6 (Integrate evidence across all streams)

For the purpose of analysing the relevant data in the included studies I used a qualitative approach, whilst reviews of quantitative articles usually involve statistical analysis this approach would not be appropriate (Higgins & Green, 2008; Moher et al., 2015). Quantitative methods focus on making generalisations based on statistical analyses whilst qualitative methods are concerned with understanding phenomena and peoples’ experiences and how these are described in words (Silverman, 2013). The reason for choosing a qualitative approach is due to the main aims and questions which this review is attempting to answer, whilst more quantitative systematic

reviews investigate the efficacy of certain interventions, the value of qualitative systematic reviews is that they can be used to inform us of why and how interventions can be effective (Hannes & Macaitis, 2012). The purpose of this systematic review was to understand how psychological assessments had previously been used in South Africa, the types of assessments typically used, which population these instruments had been used on, the utility of using these assessment tools in a South African context and finally the barriers to the use of these instruments.

The data was analysed using both content analysis and thematic synthesis. A thematic synthesis method has previously been used to conduct systematic review research focused on the health fields and as such this method seemed to be appropriate to use with the current study (Thomas & Harden, 2008). The steps the researcher followed in conducting thematic synthesis involved three steps for the thematic synthesis of qualitative systematic reviews which include: (1) Line-by-line coding ofthe text, (2) the development of descriptive themes, and (3) creation of analytical themes (Thomas & Harden, 2008). The development of descriptive themes helps to summarise and describe the original findings of the studies included while analytical themes look to go beyond the surface level findings to generate additional concepts, understandings, or hypotheses (Thomas& Harden, 2008). After generating these analytical themes, I then aimed to use them to make recommendations to improve the use of psychological assessment tools in South Africa.

The first step in the process of generating themes was reading the data contained in the included studies in order to identify key issues that were recurrent in most of the studies, following this process I then created initial codes based on the themes/issues identified in most of the studies. Following on from this step I then categorised recurrent phrases which contained key issues identified, these phrases were then used to generate a list of codes. In terms of qualitative data analysis codes can be seen as the building blocks of the process (Braun & Clarke, 2006). Following on from this step I then compared the data found in the included studies to the codes that I generated, the purpose of this step was to document the prevalence of the generated codes in the included studies but also to generate new codes where necessary. To help me with managing and tracking the prevalence of codes in the included study I used Microsoft Excel. Thirdly, I then compared the similarities and differences which could be found in the list of generated codes, the purpose of this was to combine codes/themes which represented similar sets of data. For example, I grouped “lack of clinic spaces”, “lack of finances”, and “scarcity of human resources” under a theme “resources shortage”. I made diagrams to assist me in creating themes that were organised around a central concept in the data. Fourth, I unpacked every potential theme separately. I used the Microsoft Excel table, indicating the presence of codes in each included article, to revisit specific articles and to extract what each article discussed

pertaining to the identified theme. Once this had been completed for each theme, I wrote up the descriptive themes under Results. Additionally, the analysis of the data collected was discussed between the researcher and his supervisor.

While the coding of data took place with my specific review questions in mind, the researcher was cognisant of that factor and made sure not to impose his own presuppositions which could affect how the findings of the studies were documented thus closing off any other possibilities which might not have fit with the researchers' thinking (Thomas & Harden, 2008).

3.3.7 Step 7 (Conclusions, recommendations and consequences)

Drawing on the analytical themes generated in the previous step the research then made conclusions based on the findings and aimed to make recommendations based on those findings to improve the use of psychological assessment tools in clinical practice in the context of South Africa.

3.4 Researcher reflexivity

As I was the researcher conducting this study, I had to be actively involved throughout the research process, I was involved in selection of relevant studies, presentation of the data as well as the synthesis of the findings which means that my active role in the research process made investigator bias a large probability (Anney, 2014). Investigator bias occurs when a researchers' own background and prior experiences influences the content of the findings within a study (Rees, Sutcliffe, Dickson, & Thomas, 2017). Researcher reflexivity becomes even more crucial within the current study, it refers to an exploration of the researchers own perceptions and how these perceptions might influence the research process (Rees et al., 2017). For the duration of the study, I attempted to put aside my own inherent biases and preconceptions and systematically completed the selection of studies and data synthesis and analysis stage. To increase the rigor of the study discussions around the findings of the review took place between the researcher and his supervisor.

Systematic reviews require the researcher to capture as much detail as possible during all stages of the study which allows readers and other researcher to reproduce the study, for the purposes of the study I documented my own thoughts and reflections during the research process which helped me to remain aware of my biases and preconceptions and how these could have influenced the research process (Rees, 2017).

3.5 Ethical statement

The study was a systematic review and as such used published papers which were in the public domain therefore no special permission was required. Further the research did not involve human subjects. Hence ethical clearance was not required.

Chapter 4: Results

4.1 Introduction

This chapter contains the findings from the systematic review of the utility of psychological assessments in the diagnosis and treatment of psychopathology in South Africa. The chapter has been divided into three sections which include: (1) study/review process and findings, (2) Study characteristics, (3) Data analysis. The section on the review process reports on the findings of the review process, the steps taken to identify the studies which have been included as well as a discussion of the quality appraisal of included studies. Under study characteristics I included three summary tables of the included studies and a brief overview of the extracted data under three headings namely Study characteristics, Study design, and Study results. In the final section I presented the themes which were identified in the list of included studies.

4.2 Study process

4.2.1 Study selection

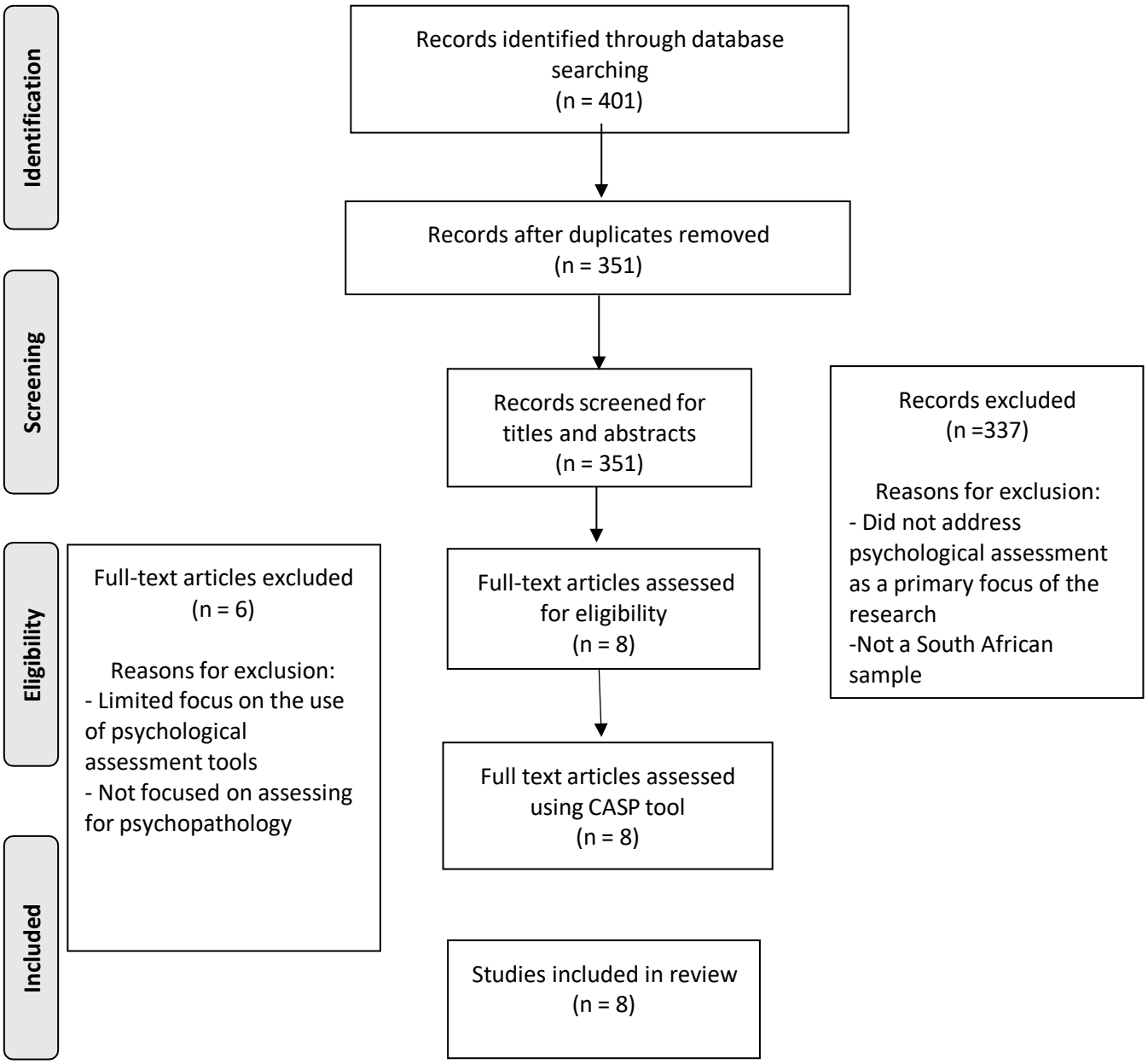
Below this section I have included a flow diagram (Fig. 4.1) which acts as a visual representation of the results of the review process (adapted from Prisma flow chart; Moher et al., 2009). The search across all databases yielded a search result of 401 articles. The 401 articles were identified based on the presence of keywords found in the title, abstracts or full-texts of the articles. Following the process of removing the duplicate articles the number of studies/articleswhich were left was 351 studies.

Following on from this, the next step was reviewing the titles and abstracts of each study and the most common reasons found for excluding documents here was the context of where the research was done (mostly in Europe) (Alschuler, Hoodin, & Byrd, 2009; Achenbach, Ivanova & Rescorla, 2017; Hsiao et al., 2017) or the lack of focus on assessment tools used for psychopathology (Ebesutani et al., 2012; Sharp et al., 2014). Other reasons for exclusion were articles which did not contain any primary research (Dazzi et al., 2017; Deutz et al., 2018).

There exists the possibility that some articles which could have been relevant for the purpose of the review were excluded however if the title or abstract did not reflect the contents of those articles clearly then they were excluded. Following on from the process of screening the abstracts

and titles of each article/study, I assessed 14 full-text articles for eligibility. During the process of screening full-texts articles I came to the realisation that some of the articles did not meet the inclusion criteria and as such these articles were excluded. At this stage of the process articles/studies were excluded for not focusing on assessing psychopathology (Isaacs, Roman, Savahl & Sui, 2018; Ahlen & Ghaderi, 2017; Makhubela & Mashegoane, 2017). Following on from this process I was left with eight articles which I then assessed for quality through using the critical appraisal skills programme (CASP) tool. Following the assessment of the included articles all eight articles were determined to be usable.

Figure 4.1 Flow-diagram of Review Process Results



4.2.2 Quality Assessment of articles

The quality of the included articles was assessed using the CASP tool (Critical Appraisal Skills Programme, 2017). Table 4.2 provides a summary of the results of the quality assessment process and how each included study performed on the 10 questions included in the CASP tool. After the process of assessing the quality of all 8 included studies I came to the conclusion that all the studies were of high quality and were included in the review as a result. Two studies obtained a score of 7/10 which represented the lowest score received by the included studies. This was followed by three studies which obtaineda score of 8/10 while the rest of the included studies obtained a score of 9/10. Seven out of the eight included studies obtained a low score for the subsection of "Research role" which indicatesthat the researchers did not critically examine how they might have influenced the research nor did they consider the relationship between themselves and the participants and how these two factors could contribute to a potential bias in their studies. However, with this being said the included studies all achieved the minimum quality criteria of 7/10 with the majority of them exceeding this minimum score.

Table 4.2 Quality Assessment of articles

Articles	Aims	Method	Research design	Recruitment strategy	Data collection	Researcher role	Ethical issues	Data analysis	Findings	Value	Tota
Andersen et al. (2011)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	8
Baron et al. (2017)	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	9
Boyes et al. (2012)	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	9
Boyes & Cluver (2013)	Y	Y	Y	Y	Y	N	Y	N	N	Y	7
Breuer et al. (2014)	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	9
Bantjes et al. (2019)	Y	Y	Y	N	Y	N	Y	Y	Y	Y	8
Regnart et al. (2019)	Y	Y	Y	N	Y	N	Y	Y	Y	N	7
Makhubela & Debusho (2016)	Y	Y	Y	N	Y	N	Y	Y	Y	Y	8

4.3 Article Characteristics

The number of studies that met the inclusion criteria for the current study was eight. In the following sections I have created three separate tables all outlining different aspects of the included studies (Study characteristics, study design and study findings and recommendations). The extracted data from each of the included studies is presented in a table format which will then be followed by a discussion of the data. The data that has been extracted from the included studies was the only data that is relevant due to the studies being conducted in a South African context and only this data was therefore extracted.

4.3.1 Study characteristics:

Table 4.3 mentions the author (s), date of publication, the study title, the context in which each of the included studies took place as well as the types of assessment tools used in each of the studies. The dates of publication for all of the included studies range from 2011-2019 with the bulk of the studies being published in the last five years. The included studies were done in rural, peri-urban and urban areas of South Africa, mostly in Cape Town and were thought to be a representative sample of poorly resourced/serviced populations in the country (Baron, Davies & Lund, 2017; Breuer et al., 2014; Boyes & Cluver, 2013). One study was located in the South African Stress and Health (SASH) study which took a nationally representative sample of households in South Africa (Andersen et al., 2017). Five studies were located in the Western Cape province with four of those being basedaround the peri-urban areas of Cape Town (Bantjes, Kagee & Saal, 2019; Baron et al., 2017; Boyes, Cluver & Gardner, 2012; Boyes & Cluver, 2013; Breuer et al., 2014), and one was locatedin Port Elizabeth in the Eastern Cape (Regnart, Truter, Zingela & Meyer, 2019). One study was done in two separate universities located in South Africa (Makhubela & Debusho, 2016).

Table 4.3 Study Characteristics

Author	Date	Title	Journal	Context	Psychological assessment tool
Andersen et al.	2011	The psychometric properties of the K10 and K6 scales in screening for mood and anxiety disorders in the South African Stress and Health study	International Journal of Methods in Psychiatric Research	SASH study nationally representative sample (Households and hostel residents)	Kessler Psychological Distress Scales (K10 & K6)
Baron et al. (2017)	2017	Validation of the 10-item Centre for Epidemiological Studies Depression Scale (CES-D-10) in Zulu, Xhosa and Afrikaans populations in South Africa	BMC Psychiatry	City of Cape Town metro district and Ethekwini district in KwaZulu Natal (both rural and urban areas)	The 10-item Centre for Epidemiological Studies Depression Scale (CES-D-10). Patient Health Questionnaire (PHQ-9). WHO Disability Assessment Schedule 2.0 (WHODAS).
Boyes et al.	2012	Psychometric properties of the Child PTSD Checklist in a community sample of South African children and	PLOS One	Cape Town settlements (Peri-urban area)	Child exposure to community violence checklist The children's depression inventory – short

		adolescents			form Children's manifest anxiety scale – revised Child behaviour checklist – somatic subscale Child PTSD Checklist
Boyes & Cluver	2013	Performance of the Revised Children's Manifest Anxiety Scale in a sample of children and adolescents from poor urban communities in Cape Town	European Journal of Psychological Assessment	Cape Town (poor urban areas)	Revised Children's Manifest Anxiety Scale (RCMAS). The Children's Depression Inventory – Short Form. Youth Self Report Inventory (YSR). Child PTSD Checklist.
Breuer et al. (2014)	2014	The validity of the Substance Abuse and Mental Illness Symptom Screener (SAMISS) in people living with HIV/AIDS in primary HIV care in Cape Town, South	AIDS and Behavior	Two primary health care clinics: Langa and Crossroads Community Health Clinics in Cape Town.	Mini Neuropsychiatric Interview (MINI) Substance and Mental Illness Symptom Screener

		Africa			(SAMISS).
Bantjes et al.	2019	The Utility of the Hopkins Symptom Checklist as a Trans-Diagnostic Screening Instrument for Common Mental Disorders Among Persons Seeking HIV Testing	AIDS and Behaviour	Western Cape Province of South Africa (Peri-urban area)	The Hopkins Symptom Checklist (HSCL) Structured Clinical Interview (SCID)
Regnart et al.	2019	A pilot study: Use of the Adult Attention-Deficit/Hyperactivity Disorder Self-Report Scale in a South African patient population	The South African journal of psychiatry: SAJP: the journal of the Society of Psychiatrists of South Africa	Port Elizabeth, South Africa	Adult ADHD Self-Report Scale (ASRS)
Makhubela & Debusho	2016	Factorial invariance and latent mean differences of the Beck Depression Inventory – second edition (BDI-II) across gender in South African university Students	Journal of Psychology in Africa	Two South African Universities; University of Limpopo & University of Pretoria	The Beck Depression Inventory – second edition (BDI-II)

4.3.2 Study Design:

Table 4.4 summarises the study aims, the methodological design/approach, the types of participants, the sampling method used, how the data was collected as well as the method of data analysis for each of the studies which have been included. Seven of the included studies followed a quantitative approach to conducting their research while one of the studies followed a mixed-method (both qualitative and quantitative) methodological approach. What can be deduced from these studies is that the aim of the research was to offer a generalizable framework to using different psychological assessment tools, the majority of these studies indicate that they form a first step to exploring the applicability of these tools in a South African context.

The most common means of data collection in the included studies was clinical interviews with Lay counsellors that was done face-to-face, the Lay counsellors then administered a range of psychological assessment screening tools however given that the majority of these studies were quantitative (n=7) the views of the participants were not adequately captured. The administration of the psychological assessment tools required the use of Lay counsellors in six of the included studies, this required training as well as supervision by registered psychiatrists.

The most common means of data analysis in the included studies was STATA which was used in four of the seven included studies. The second most common means of data analysis which was used in the included studies was AMOS 16 which was utilized in two of the included studies while one of the studies used SPSS and the other study utilised EQS.

Table 4.4 Study Design

Author	Research Aims	Research Design	Participants	Sampling	Data Collection	Data Analysis
Andersen et al. (2011)	To evaluate the validity of the Kessler Psychological distress scales in screening for depression and anxiety disorders in the multi-cultural population of South Africa	Quantitative	A nationally representative sample of 4351 adult participants	Probability Sampling	Fieldworkers (Lay counsellors) administered the CIDI interview which is face-to-face interview and later administered the K10 & K6	Data analysis was conducted using STATA version 10.0
Baron et al. (2017)	To establish the utility of the short version of the Hopkins Symptom Checklist (HSCL-25) to correctly identify common mental disorders (CMDs) among persons seeking HIV testing.	Quantitative	500 individuals seeking HIV testing in a peri-urban area of the Western Cape Province of South Africa	Convenience Sampling	Individual interviews conducted by trained data collectors who also administered the Hopkins Symptoms Checklist under the supervision of two registered psychologists	Data analysis was conducted using STATA version 13
Boyes et al. (2012)	To establish the reliability and validity of the 10-item Centre for Epidemiological Studies Depression Scale (CES-D-10) in Zulu,	Quantitative	A total of 944 participants were recruited: 307 in the Zulu sample, 334 in the Afrikaans sample and 303 in the	Systematic Sampling	Face-to-Face interviews with fieldworkers	AMOS 16

	Xhosa and Afrikaans		Xhosa sample			
Boyes & Cluver (2013)	To assess the basic psychometric properties of the Child PTSD Checklist and explore the structure of PTSD symptoms in a large South African community sample	Quantitative	A sample of 1025 children and adolescents recruited from nine schools, 18 non-government organisations, and from door-to-door sampling ranging from 10-19 years old.	Purposive Sampling	Face-to-face interviews with local community health or social workers who received training in the administration of standardised questionnaires which were administered verbally due to low literacy rates.	AMOS 16
Breuer et al. (2014)	To assess the basic psychometric properties of the Revised Children's Manifest Anxiety Scale (RCMAS) in a South African community sample.	Quantitative	A sample of 1025 children and adolescents recruited from 18 non-government organisations, nine schools, and from door-to-door sampling.	Purposive Sampling	Questionnaires were administered verbally by seven interviewers who received training in the administration of standardised questionnaires.	STATA Version 12
Bantjes et al. (2019)	to determine the validity of a lay counsellor administered Substance and Mental Illness Symptom Screener (SAMISS) compared to the Mini International Neuropsychiatric Interview in	Quantitative	356 Participants recruited from two primary health care clinics: Langa and Crossroads Community Health Clinics in Cape Town, South Africa.	Purposive Sampling	The parcipants were randomly organised into two groups, one group completed the MINI International Neuropsychiatric Interview administered by a mental health nurse while the other group completed the	Statistical Package for the Social Sciences (SPSS)

	a pre-HAART PLWHA in two primary care HIV clinics in South Africa.				SAMISS administered by a trained lay counsellor under the supervision of a psychiatrist.	
Regnart et al. (2019)	To investigate the application of the Adult ADHD Self-Report Scale (ASRS) in a South African setting	Mixed Method	30 patients from a patient population in Port Elizabeth, South Africa which was identified representative of a developing or low- and middle-income country (LMIC) patient population.	Convenience Sampling	A total of three nurses who each interviewed and administered the ASRS to 30 patients (10 patients each).	STATA Version 12
Makhubela & Debusho (2016)	This study sought to examine the validity of the BDI-II among female and male South African university students	Quantitative	Participants were 919 South African university students (females = 72%)	Purposive Sampling	University students were asked to complete the self-report instrument in English	EQS 6.1 Programme Multivariate Software

4.3.3 Study results:

Table 4.5 summarises the findings, recommendations, conclusions as well as limitations identified in each of the included studies. The most common findings which were identified in the included studies were: the lack of resources (financial, number of trained mental health specialists etc.), the cultural and linguistic differences which affected the appropriateness of the psychological tests being used, the unethical use of screening tools which were being regularly administered to South African populations, the lack of training among the administrators of these assessment tools as well as strategies to improve the administration these assessment tools in South African and the benefits which could come from this.

The recommendations which were made in these included studies with regards to the utility of psychological assessment tools and their use in South Africa concerned both their use in practice as well as for further research. The most common recommendations for practice were concerned with increasing the training and expertise of those administering the tools as well as using psychological assessment tools which have been empirically shown to be appropriate for the context. With regards to recommendations for research, the most common issue raised was the need to adapt these assessment tools for use in a South African setting as well as further research on the linguistic and cultural biases which appear to influence performance on these instruments.

The most commonly mentioned limitation with regards to the included studies was the issue of generalizability, the small sample size or the homogeneity of the sample meant that the results presented in these studies could not be generalised to the larger South African population. In addition, the administrators (e.g., Lay counsellors) lack of expertise with regards to knowledge ofthe selected instruments appeared to influence the results of these studies.

Table 4.5 Study Results

Author	Findings	Conclusions	Recommendations	Limitations
Andersen et al. (2011)	(1) The K10 and K6 while found to be adequate in detecting depression and anxiety in the general population, these scales were not as effective in detecting mood and anxiety disorders as when they are used in more developed countries (Canada, Australia etc.) (2) The Kessler scales had significantly lower discriminating ability with respect to depression and anxiety disorders among the Black group than among	This study highlighted the complexity of using psychological assessment tools such as the Kessler psychological distress scale in South Africa due to issues of illiteracy as well as the variation in cultural expression of symptoms.	In order to determine cross-cultural equivalence, follow-up studies are needed to fully investigate the existence of differential item functioning or biased measurement on the Kessler scales. Further research, standardizing the time period assessed or asking about worst 30-day period in the past year is recommended.	One limitation is the use of local residents with insufficient training over registered clinicians with extensive experience in administration of assessment tools.

	the combined non-Black group (3) With respect to their clinical use neither of these two scales were found to be useful in a South African context as their ability to accurately identify those who are in need of mental health services was shown to be inadequate			
Bantjes et al. (2019)	(1)The Hopkins Symptom Checklist (HSCL-25) has limited utility as a valid brief trans-diagnostic screening tool to identify individuals who are likely to have a common mental disorder among individuals seeking HIV testing.	Due to the scarcity of mental health resources available in South Africa there is a need for a trans-diagnostic screening tool especially with regards to HIV testing and treatment centres however the HSCL-25 is not an appropriate screening tool for this context.	It is important for future research to establish how user-friendly the HSCL-25 is and how patients in different cultural settings experience its use. Future studies could establish the utility of screening instruments such as the CAGE Screening Test for Alcohol Use Disorders and	Data for the study was collected in one location and the sample only consisted of individuals who could speak either English or Afrikaans thus the results cannot be generalised to the larger population. The study did not assess symptoms of bipolar spectrum disorder and thus estimates of

	(2) The screening tool does however have utility as a screening tool for both depression and PTSD among individuals seeking HIV testing. (3) The HSCL-25 has limited utility in low resource environments.		AUDIT to be used in conjunction with the HSCL-25.	MDD may be marginally inflated because they might include some individuals with a bipolar spectrum disorder.
Baron et al. (2017)	(1) The CES-10 is reliable and valid for use among general populations of Xhosa, Zulu and Afrikaans speaking individuals, the tool has utility in clinical settings in a South African context. (2) The CES-D 10 is a short assessment instrument which is not time consuming and	This study highlighted differences in the perception and experience of depression, and in the idioms of distress used among different South African populations	Future studies can examine the cultural and gender differences among different populations in South Africa with regards to possible measurement biases that may exist, the current study had fairly homogenous groups and thus the results cannot be generalised to other ethnic populations.	It was not possible to assess the cultural differences in the CES-D-10's performance among the Afrikaans-speaking population in given the small number of non-coloured individuals recruited. Generalising the present findings

	as such is a good tool to use in overburden and under resourced contexts such as South Africa.			to other linguistic groups within South Africa may not be possible due to differences found within the three sample groups (Zulu, Xhosa and Afrikaans).
Boyes et al. (2012)	The results suggest the Child PTSD Checklist is a reliable and valid measure of PTSD symptoms the South African context.	The current study highlighted difficulties assessing the reliability of children self-report checklists due to problems with social desirability and limitations in children's ability to reliably report subjective states of internal distress.	Further research examining the performance of this measure in South African children is clearly needed. Future research evaluating the diagnostic performance of the Child PTSD Checklist in terms of its sensitivity and specificity is required before conclusions regarding its use as a diagnostic tool in South African samples can be drawn.	Verbally administering questionnaires through interviewers is a non-standard method for administration of the Child PTSD Checklist.
Boyes & Cluver (2013)	The Revised Children's Manifest Anxiety	The current study highlighted differences in the	Further research examining the psychometric	This study did not use a representative

	Scale (RCMAS) is a valid and reliable measure for anxiety among South African youth.	expression and understanding of symptoms of anxiety among different cultures and genders.	properties of these measures (RCMAS, Children's Depression Inventory) in South African samples is required. Future research should attempt to replicate these results using self-reported (not verbally administered like in current study) data obtained from South African community samples.	sample of the South African Population thus this results cannot be generalised to the larger South African population. .
Breuer et al. (2014)	(1) The Substance and Mental Illness Symptom Screener (SAMISS) can be a useful initial screening tool for common mental disorders for individuals living with HIV (2) The SAMISS over-detected the presence of mental disorders in this study	This study demonstrated that the SAMISS can be used by lay HIV counsellors in the initial screening for substance abuse and mental disorders in busy primary health care settings however this tool should be used in conjunction with other measures to avoid over-detection.	This study highlighted the need for more extensive training for Lay counsellors in administration of screening tools to avoid over-detection of cases which leads to increased referrals for further assessment and treatment.	The difference in the time periods between the SAMISS and the MINI as the SAMISS records symptoms in the last 12 months whereas the MINI records more recent symptoms.

Regnart et al. (2019)	The Adult ADHD Self-Report Scale (ASRS) is a useful screening tool in the assessment of ADHD in acute inpatient settings in a South African context	While the ASRS is a useful screening tool further investigation is required before the tool is widely used with South African populations due to linguistic and cultural variables which had an influence in the current study.	A large scale investigation into the utility of the ASRS is required to determine its diagnostic value in the assessment of individuals with ADHD in the South African health care system.	Due to the small sample size the results of the study cannot be generalised to the larger South African population. A convenience sample was used, and thus, a selection bias existed in the study population. The English version of the ASRS was used for a population with varying home languages. The use of administrators with limited knowledge of the psychological assessment tool used was a limitation in the current study
Makhubela & Debusho (2016)	(1) It is concluded that the BDI-II is a reliable and valid measure that can	The study highlighted that while the DBI-II is a useful instrument for	Prospective research in this area should sample non-student and clinical populations	The study did not use a representative sample of the South African

	be used to assess the severity of depressive symptoms over time among South African university students. (2) There was however evidence of significant latent mean differences on NA (Negative Attitude) factor and the S (Somatic complaints) factor, with females endorsing higher scores under these factors.	screening depressive symptoms among a university population, further investigation is required to assess the utility of the instrument with different contexts and populations within South Africa	To further clarify the measurement proprieties reported for the BDI-II from this study.	Population thus this results cannot be generalised to the larger South African population.

4.4 Data Analysis

Themes	Subthemes
Barriers for assessment in the context of South Africa	(1) Lack of financial resources. (2) Insufficient number of mental health specialists. (3) Under resourced and overburdened health care facilities. (4) Linguistic and cultural barriers affecting the implementation of assessment tools. (5) Differences in the expression and understanding of mental illness among different ethnic groups.
Description of Psychological assessments in South Africa	(1) Types of assessment tools used on South African populations. (2) Types of people assessments are used on. (3) The location of where these tools are developed. (4) Measurement/Item bias inherent among the currently used assessment tools. (5) The need and use of shorter assessment tools.
Consequences of poor administration of psychological assessment tools	(1) Use of internationally developed tools on an untested population. (2) Unethical administration of tools not adapted for use on South African population.
Strategies to improve use of psychological assessment tools in South Africa	(1) Translation and adaptation of internationally developed tests for South African context. (2) Continued large-scale testing of assessment tools (3) Training and education of mental health specialists.
Benefits to utilizing psychological assessment tools in South Africa	(1) Decreasing number of referrals to health care facilities (2) Increased accuracy of detection of mental disorders (3) Early detection of mental illness

	(4) Increased prognosis of treatment

Structural barriers in the context of South Africa

There were several of the included studies which pointed to specific structural issues which influenced the types of assessment tools which were being used as well as the need to develop more context appropriate tools. These structural issues include the lack of financial resources available to health care facilities in the country, the insufficient number of mental heath specialists trained in the use of psychological assessment tools as well as the increasing number of referrals received by health care facilities in South Africa. To contextualise assessment practices in South Africa, it is important to understand the screening and referral process. Screening is handled mainly by community mental health nurses at local clinics in addition to registered counsellors who are trained to administer screening tools, they are only permitted to use screening instruments not psychological tests. The use of psychological/ diagnostic tests are restricted to psychologists, and in some instances psychiatrists. The researcher will discuss all of the issues raised in the included studies with regards to structural barriers which prevent the effective use of psychological assessments.

4.4.1.1 Lack of financial resources

The first issue which was raised is that of a lack of financial resources and this was discussed in two different ways; the first is the lack of financial resources to develop and test new psychological instruments which are culturally appropriate. In previous studies the issue of finances being a specific barrier to the development of assessment tools has been raised and three of the included studies agree with this notion and stated this as a limitation to the development of culturally appropriate assessment instruments (Andersen et al., 2011; Baron, Davies & Lund, 2017; Bantjes, Kagee & Saal, 2019). The lack of financial resources in these studies meant that the sample size was quite limited and thus the results of the studies could not be used to generalise to the larger population.

In addition to the first issue raised, the lack of financial resources also constricted the scope that the research could cover, with the variety of different ethnicities which exist in South Africa this means that the results could only be generalised to the specific populations covered in the study. These are issues which continue to affect the field of psychological assessment as practitioners have previously raised concern over the use of internationally developed tests which have not been adapted for use in South Africa. The use of these tests such as the K10 and K6 as well as the RCMAS which have little to no empirical evidence remains unethical and could bias groups which are already historically disenfranchised in this country (Baron et al., 2017).

4.4.1.2 Insufficient number of mental health specialists

Another issue which was raised in six of the included studies is that of a lack of trained mental health specialists to administer these assessment tools (Andersen et al., 2011; Boyes, Cluver & Gardner, 2012; Boyes & Cluver, 2013; Breuer et al., 2014; Baron, Davies & Lund, 2017; Bantjes, Kagee & Saal, 2019). The studies mentioned state that factors which might affect individuals' performance on assessment tests is both how they are administered as well as how those administering the tests interpret the results. Ethically the administration of assessment tools should only be done by a trained specialist who is competent in the administration and interpretation of the used assessment tools and this was a particular limitation of the studies.

This brought up a broader issue of an insufficient number of practitioners who can administer assessment tools which leads to two further issues in the context of South Africa. The first of these issues is that without competent practitioners administering and interpreting the tests individuals who suffer from some form of psychopathology could be overlooked or inaccurately diagnosed, this was highlighted in several studies (Andersen et al., 2011; Breuer et al., 2014; Bantjes et al., 2019). The second issue is that administrators of psychological assessment tools who lack expertise in the field could refer a larger number of individuals to health care facilities for further treatment and assessment. This would then further exacerbate the problem of overburdened facilities that do not have the resources to treat large numbers of patients (Breuer et al., 2014; Bantjes et al., 2019). In addition to the issues raised above, competent practitioners are required to develop context appropriate assessment tools and the lack of these professionals slows down the process of research in the field of psychological assessment (Andersen et al., 2011; Boyes, Cluver & Gardner, 2012; Boyes & Cluver, 2013; Breuer et al., 2014; Baron, Davies & Lund, 2017). The slow progress of research in the field of psychological assessment has led to the unethical use of these tools developed internationally which are still used on South African populations with no empirical evidence supporting their utility in this context.

4.4.1.3 Under resourced and overburdened health care facilities

Studies further found that the use of internationally developed psychological assessment instruments without further research looking at their utility in a South African context can lead to an over-detection of a mental illnesses (Breuer et al., 2014; Bantjes et al., 2019). This leads to

further strain on already overburdened and under resourced health care facilities. The use of adapted tests was shown to be beneficial in solving the issue of increased strain on health care facilities, this was shown in a number of the studies which were included. The accuracy of these adapted tools meant that individuals in need of further assessment and treatment could be identified and referred to receive appropriate health care services (Breuer et al., 2014; Bantjes et al., 2019).

4.4.1.4 Linguistic and cultural barriers affecting the implementation of assessment tools

A theme that was present in all included studies was the issue of linguistic and cultural differences which led to some form of measurement bias, certain questions such as "How often do you feel that everything is an effort?" and "How often do you feel worthless?" are likely to be endorsed by black groups regardless of the existence of a mental disorder (Andersen et al., 2011; Boyes et al., 2012; Baron et al., 2017). However, what was highlighted by such measurement items is the lowered ability for psychological instruments such as the Kessler Psychological Distress Scale to discriminate between individuals with a mental disorder such as depression or anxiety from those who do not have a mental illness. The findings of the studies contend that measurement biases inherent in internationally developed assessment tools could lead to an over-detection of certain mental illnesses (Breuer et al., 2014; Bantjes et al., 2019; Makhubela & Debusho, 2016). Furthermore, the studies included in the review point to differences in the expression of symptoms of various mental disorder due to cultural, linguistic or in some cases gender differences (Andersen et al., 2011; Makhubela & Debusho, 2016). Although the existence of cultural or gender differences in depressive symptoms is widely established (Herman et al., 2009; Ngcobo & Pillay, 2008), the reasons for these differences are not yet well understood. It is however generally considered that gender differences in the symptoms of depression reflect gender differences in the perception and the expression of depressive symptoms (Kockler & Heun, 2002).

Another possible reason stated in several of the included studies for the differences in test performance among different ethnic and cultural groups is that mental illnesses are understood or expressed differently in different cultures.

The issue of linguistic proficiency was further seen as an issue with regards to participants/patients understanding of items present in these assessment tools which meant that the results of these assessments could not be considered valid until these instruments are adapted for use in the South African context. In order to combat the inherent bias present in these tests,

five studies verbally administered self-report assessment tools however this brought two unexpected findings. The first of these findings was that when these instruments were administered verbally participants/patients tended to give socially desirable answers to questions posed and this put into question the utility and validity of administering these tools in the current context of South Africa. In addition, the included studies further found that linguistic proficiencyin the test language affects patients/participants ability to accurately report their subjective state of internal distress. This called into question the utility of these assessment tools which have notbeen adapted for use in the context they are currently being used in.

4.4.2 Psychological assessment in South Africa

4.4.2.1 Types of assessment tools used on South African populations

The most common type of assessment tool which was used in all of the included studies was mental illness screening tools, in all cases these tools were self-report assessment instruments and a number of reasons were given as to the common use of these types of assessment tools (Andersen et al., 2011; Boyes et al., 2012; Boyes & Cluver, 2013; Breuer et al., 2014; Baron et al., 2017; Bantjes, Kagee & Saal, 2019; Regnart et al., 2019). The first reason for using this type of assessment tool is the lack of registered practitioners capable of administering assessment tools and to combat this issue self-report assessment tools were used to allow larger numbers of individuals to be assessed. In several studies self-report tools were being used as initial screeners for the presence of some form of psychopathology, the reasoning behind the usage of these tools was that it allowed health care facilities to identify individuals in need of further treatment without putting too much strain on already overburdened health care facilities (Baron et al., 2017; Bantjes, Kagee & Saal, 2019; Regnart et al., 2019). Findings from these studies however revealed that the use of these instruments in their current state was not appropriate in many instances, this is due to the large inequality that exists among different populations in the country. These large-scale inequalities meant that the use of internationally adapted assessment tools were only useful in cases where the population was made up of middle to upper class individuals who have completed their secondary education (high school) as a minimum. In cases where these assessments were used on low-income populations who had not completed their secondary education the utility of these instruments decreased greatly. The ability

to discriminate between individuals with mental disorders and those who did not lowered when these assessments were used on such populations.

4.4.2.2 The location of where these tools are developed

The tools which were used in the included studies were internationally developed tools such as the Kessler Psychological Distress Scale which have been developed and tested for use on middle-class homogenous groups. The findings from Six of the studies highlight the need for these tools to be tested for use on the South African population before they are used in clinical settings for diagnostic purposes (Andersen et al., 2011; Baron et al., 2017; Boyes et al., 2012; Boyes & Cluver, 2013; Breuer et al., 2014; Makhubela & Debusho, 2016). The studies highlighted thatassessment tools which were used on different ethnic groups in the country yielded significantly different success rates meaning that the utility of using these tools in a multicultural population isstill questionable. The issues identified with administering and interpreting the results of internationally development assessment tools in South Africa ranged from the lack of competent trained mental health specialists to literacy issues which have an effect on the reliability and validity of these instruments in this context.

4.4.2.3 Types of people assessments are used on

The studies mainly focused on low to middle-income populations in South Africa and this highlighted the need to adapt the assessment tools for use on local populations. The assessment tools were found to be inaccessible to populations with low levels of education and the main reason for this was the type of assessment tool which was being used. In all included studies the type of assessment tool was a self-report tool, this mean that illiterate groups were at a disadvantage and this was highlighted as a particular limitation in the use of assessment tools in South Africa.

In two of the studies the population of interest were people living with HIV/AIDS. The prevalence of common mental disorders (CMD) in people living with HIV/AIDS (PLWHA) is high and the rate of infection in Sub-Saharan Africa is 1.8 million a year (Breuer et al., 2014; Bantjes, 2017). In South Africa, a nationally representative study of PLWHA attending public health facilities found that 44 % had a mental illness (Freeman, Nkomo, Kafaar & Kelly, 2008). In addition, these studies found that mental disorders in PLWHA lead to poorer HIV outcomes

and that PLWHA with mental disorders in low- and middle-income countries have pooreradherence to treatment (Breuer et al., 2014; Bantjes, 2017).

The location where the included studies were done had some similarity with five of the included studies being done in the Western Cape, one being done in Kwa-Zulu Natal, one in Limpopo and Gauteng and the other one being one in the Eastern Cape (Andersen et al., 2011; Bantjes et al., 2019; Baron et al., 2017; Boyes et al., 2012; Boyes & Cluver, 2013; Breuer et al., 2014; Mahubela & Debusho, 2016; Regnart, Truter, Zingela & Meyer, 2019). This is of particular interestwith reference to research on psychological assessment tools due to two reasons. The first of these reasons is that due to the variability in the utility of these tools among different populationsthe results of the study could only be used to generalise on the specific population which was tested. The results of the studies showed that there are significant differences on test performanceamongst different ethnic groups which mean that the results of these assessment tools should not be used to make assumptions on the utility of these instruments on the general population of South Africa (Andersen et al., 2011; Bantjes et al., 2019; Baron et al., 2017; Boyes et al., 2012; Boyes & Cluver, 2013; Breuer et al., 2014; Makhubela & Debusho, 2016). The second reasonwhy the location of the included studies is of particular note is that it points to the difficulty of conducting large scale research on the utility of psychological assessment tools in South Africa. The reason for this difficulty as pointed out in six of the included studies is the lack of professionally trained practitioners capable of conducting these tests as well as the lack of financial resources needed to conduct research on this scale. (Andersen et al., 2011; Bantjes et al., 2019; Baron et al., 2017; Boyes et al.,2012; Boyes & Cluver, 2013; Breuer et al., 2014).

4.4.2.4 The need and use of shorter assessment tools

There is a need to develop or adapt specific types of assessment tools in South Africa, this is due to the increasing strain faced by health care facilities in the country, this has meant that there has been an increasing need to find effective screening tools for mental illness (Breuer et al., 2014; Baron et al., 2017; Bantjes et al., 2019). These assessment tools need to be short and user-friendly, reasons for this include the number of patients who require assessments as well as the shortage of professions capable of administering assessment tools. There has been a shift indicated in Six of the included studies which points to health care providers researching shorter self-report assessment tools to ease the burden on mental health specialists as well as to combat the issue of overcrowded health care facilities (Andersen et al., 2011; Baron et al., 2017; Boyes et al., 2012; Boyes &Cluver, 2013; Breuer et al., 2014). Research in the field of psychological

assessment is shifting towards finding effective, accurate assessment tools which require very little time to administer which are also user-friendly. These assessments such as the Hopkins Symptoms Checklist are used to accurately identify individuals with mental illnesses who are in need of further assessment and treatment (Bantjes, 2019). The aim was to develop or adapt assessment tools which can be used to accurately identify individuals suffering from some sort of psychopathology in the shortest amount of time possible.

There have been some problems identified in several of the included studies which point to issues in using shorter (less comprehensive) assessment tools in the interest of screening as many individuals as possible in the shortest amount of time (Breuer et al., 2014; Baron et al., 2017; Bantjes, 2019). One issue is that the use of these assessment tools has been shown to decrease the accuracy of identifying mental illnesses in individuals. This is a particular problem because it puts further strain on an already overburdened health care system. Assessment tools such as the Hopkins Symptom Checklist, Kessler Psychological Distress Scales and the Revised Children's Manifest Anxiety Scale all over-detected the presence of a mental illness on the populations which were tested (Andersen et al., 2011; Boyes & Cluver 2013; Bantjes, 2019). This meant that the use of these assessment instruments had the potential to strain the financial resources of health care facilities which was the opposite of the desired effect of using these tools. These shorter scales in all the included studies were self-report scales which meant that these instruments were inaccessible and difficult to understand for individuals with lower levels of education. This is an important finding as it points to the difficulty of using these types of assessment tools in the context of South Africa as it would exclude some populations in the country from benefiting from mental health services.

4.4.3 Consequences of poor administration of psychological assessment tools

4.4.3.1 Unethical administration of tools not adapted for use on South African population.

Four of the included studies indicated that in many areas of South Africa the most used assessment tools have not yet been adapted for use with local populations however there was still the unscrupulous use of these assessment tools (Andersen et al., 2011; Boyes et al., 2012; Boyes & Cluver, 2013; Regnart et al., 2019). There has been an effort to cut down the use of unstandardized assessment tools in South Africa however tests such as the Revised Children's Manifest Anxiety Scale, Child PTSD Checklist as well as the Hopkins Symptom Checklist are still being used on local populations despite the unethical nature of this practice (Boyes et al.,

2012; Boyes & Cluver, 2013). These assessment tools have little to no empirical evidence backing their utility in this context and further research is needed to determine the diagnostic capabilities of these tools. Several studies highlighted that these tools are still being used on South African populations despite findings suggesting that certain constructs in the instruments discriminate against previously disenfranchised groups in South Africa (Andersen et al., 2011; Boyes et al., 2012; Boyes & Cluver, 2013; Regnart et al., 2019).

Studies also suggested that these assessment tools were being administered by lay counsellors with very little training on the administration of the tools, there was significant variation in how these assessments were administered and interpreted as a result (Breuer et al., 2014; Baron et al., 2017; Bantjes et al., 2019). The use of lay counsellors as administrators of the assessment tools were highlighted as variables which potentially influenced the performance of individuals in the studies. The lack of standardisation in administration and interpretation of test performance was highlighted as a particular weakness of three studies and meant that the results of the studies could not be generalised to the larger South African population.

4.4.4 Strategies to improve use of psychological assessment tools in South Africa

4.4.4.1 Translation and adaptation of internationally developed tests for South African context

All the included studies highlighted efforts to improve the use of psychological assessment tools, one particular way this was done was the extensive process of adapting internationally developed tools for use in the South African context. There was an extensive process for translating assessment tools to local languages which involved the following process. Assessment tools were translated and back-translated into Afrikaans, Zulu, Xhosa, Northern Sotho, and Tswana by bilingual and multilingual experts. Discrepancies that emerged from the back-translation were decided on by consensus of a team of experts. This process was done in six of the seven included studies and highlighted the work that went into making these assessment tools more accessible to local populations (Andersen et al., 2011; Bantjes, 2019; Baron et al., 2017; Boyes et al., 2012; Boyes & Cluver, 2013; Breuer et al.,2014).

4.4.4.2 Training and education of mental health specialists

In addition to translating the assessment tools into local languages, the tools were administered face-to-face and, in some cases, verbally which was done to limit the influence of literacy on test

performance (Boyes et al., 2012; Boyes & Cluver, 2013). Researchers outlined strategies to improve the utility of assessment tools in South Africa. The first strategy was the continued training of local practitioners as one of the most important problems highlighted was the scarcity of trained practitioners capable of administering and interpreting the assessment instruments. In six of the seven studies a particular limitation which was highlighted was the scarcity of competent assessment practitioners which meant that Lay counsellors with limited training were being used in an attempt to ease the burden on health care facilities (Andersen et al., 2011; Bantjes, 2019; Baron et al., 2017; Boyes et al., 2012; Boyes & Cluver, 2013; Breuer et al., 2014). However, the use of lay counsellors increased the chance of over-detection and increased referralsfor treatment which increased the strain on under resourced health care facilities.

4.4.4.3 Continued large-scale testing of assessment tools

The studies highlighted the need for large-scale research on assessment tools in South Africa in order to develop or adapt assessment tools. Internationally developed assessment tools are commonly used on local populations and the included studies highlighted the problems of using these tools without adapting them for use in the current context (over-detection, inaccessibility of tools for many populations in the country etc.). The studies identified differences in test performance among different ethnic and racial groups, this suggested that generalising the findings to other linguistic or racial groups within South Africa was not appropriate (Andersen et al., 2011, Baron et al., 2017). Great care was taken in each of the studies to translate and back-translate the tools used therefore it was unlikely that any differences found between the samples were due to translation errors (Andersen et al., 2011, Baron et al., 2017). Instead, these were likely to reflect differences in the perception and experience of depression, and in the idioms of distress used among different South African populations. This further highlighted the need for further large-scale studies looking at the utility of assessment tools in the context of South Africa with focus on adapting these tools for use on local populations.

4.4.5 Benefits to utilizing psychological assessment tools in South Africa

Psychological assessment tools such as the Kessler Psychological Distress Scale, the Revised Children's Manifest Anxiety Scale and the 10-item Centre for Epidemiological Studies Depression Scale have been shown to be valid and reliable screening tools for mental illness (Andersen et al., 2011; Boyes & Cluver, 2013; Baron et al., 2017). Several studies have documented the utility of these self-report scales in accurately describing the current levels of

symptomology and aiding in the diagnosis and treatment process (Andersen et al., 2011; Boyes et al., 2012; Boyes & Cluver, 2013; Breuer et al., 2014; Baron et al., 2017; Bantjes, 2019). These tools were shown to be adequate to good screening tools particularly for anxiety and mood related disorders. Tools such as the K10 and K6 have the potential to play important roles in raising the awareness of the mental health needs of South African populations, who have overburdened and under resourced health care services by helping to identify as well as monitor the prevalence of mental disorders in these populations (Andersen et al., 2011). The use of psychological assessment tools was also identified as key in the testing and treatment process of PLWHA due to the association between mental illness and HIV/AIDS (Breuer et al., 2014; Bantjes et al., 2019). An interesting finding from two studies was that the use of trans-diagnostic assessment tools such as the Substance Abuse and Mental Illness Symptom Screener (SAMISS) can aid in the identification of people with mental illness (Breuer et al., 2014). This is an important finding as mental illness is a risk factor in developing a substance use disorder as well as poor adherence to treatment and early detection of mental illness can help to prevent this.

Assessment tools such as the Kessler Psychological Distress Scale and the 10-item Centre for Epidemiological Studies Depression Scale (CES-D-10) were identified as reliable screening tools for mood disorders which is important as depression is the leading cause of disability worldwide (Andersen et al., 2011; Baron et al., 2017). At its most severe level depression can lead to suicidal ideations/attempts. Therefore, reliable screening tools such as the K10 and K6 as well as the CES-D-10 are important in the initial assessment phase to both identify the presence of the mental disorders and to inform further treatment (Andersen et al., 2011; Baron et al., 2017). In South Africa nearly 10% of the population will suffer from a major depressive episode at least once in their lifetime however only one in four individuals with depression or anxiety receive treatment in South Africa (Seedat et al., 2009). In contexts where mental health services are available the use of screening tools (e.g. CES-D-10) has been advocated as a way to detect the presence of a mental illness (Kagee, Tsai, Lund & Tomlinson, 2012). The studies further suggest that the timely identification of individuals displaying depressive symptoms plays an important role. This will allow such individuals to be referred for mental health treatment services to prevent depressive symptoms from worsening into full clinical depression (Baron et al., 2017).

The use of psychological assessment tools and their utility increased when these instruments were used as a battery to screen for the presence of psychopathology (Boyes et al., 2012; Boyes & Cluver, 2013; Breuer, 2014). In several of the included studies the use of a battery of assessment tools increased the accuracy of detecting mental illnesses which made sure that individuals in

need of mental health treatment were identified and treated accordingly. However, two issues were identified with regards to using a battery of tests, the first is that it increased the amount of time it took to screen individuals and this meant that few groups could be assessed. The second issue was the resources required and therefore the use of a battery of tests was determined to not be feasible in the resource-scarce context of South Africa.

Depression and anxiety in children has been known to lead to behavioural and scholastic difficulties, the use of assessment tools such as RCMAS as well as the child PTSD Checklist were shown to be useful screening tools for the presence of some form of psychopathology. These tools in several studies were shown to be reliable and valid screening tools for mental illness. The early detection of mental illness in children has been shown to increase the success rate of treatment (Boyes et al., 2012; Boyes & Cluver 2013).

The use of assessment tools in several studies has been shown to be useful in the early phase of treatment as the use of these instruments aids in the early detection that informs treatment of mental illnesses. As highlighted in the included studies this is important in the context of South African due to the limited resources available. The use of diagnostic specific tools such as the CES-D-10 helps to reduce the number of referrals to health care facilities and also helps to identify individuals in need of further psychiatric treatment (Breuer et al., 2014; Bantjes et al., 2019).

4.5 Conclusion

In this chapter the researcher presented the results obtained from the systematic review of the utility of psychological assessment tools in the diagnosis of psychopathology in South Africa. The first section of the results chapter included a flow diagram to illustrate how studies were identified for this review, following on from that I provided a summary of the quality appraisal of the included studies. Following on from this the researcher gave an overview of the characteristics of the articles using three different tables which included: study characteristics (summary of the general characteristics of the study), Study design (summary of methods used in the studies) and finally Study findings (summary of findings and recommendations). In the final section I presented the themes and subthemes that I identified in the data. In the present review, five main themes were identified which included: (1) Barriers for assessment in the context of South Africa, (2) Description of Psychological assessment in South Africa, (3) Consequences of poor administration of psychological assessment tools, (4) Strategies to improve use of psychological assessment tools in South Africa and (5) Benefits to utilizing psychological assessment tools in South Africa. In the chapter to follow, these results are discussed further.

Chapter 5:

5.1 Introduction

The aim of this study was to systematically review the available literature in the field of psychological assessment in South Africa to gain an in-depth understanding of the utility of psychological assessment tools in the diagnosis and treatment of patients with various psychopathologies. Additionally, the study also aimed to identify the types of psychological assessment tools commonly used to diagnose and treat patients with various psychopathologies as well as the types of people these psychological assessment tools have been used on. Finally, the study aimed to identify and focus on the barriers to using psychological assessment tools in a country as multicultural and multilingual as that found in South Africa. This chapter contains a discussion of the findings of the current review which is done by drawing on literature in the field of psychological assessment and the findings of the review are then placed within the existing body of evidence. Thereafter the possible limitations and strengths of the current study are outlined and discussed before concluding the chapter with some recommendations for future research.

5.2.1 What types of assessments are commonly used for diagnosis and treatment of psychopathology in a South African context?

The health care sector in South Africa has attempted to compensate for various challenges that exist in the mental health care system in the country and this has led to a shift towards the use of self-report assessment tools which was identified in several of the included studies. The use of self-report assessment instruments has been used in other international studies and is primarily used to combat the issue of a lack of mental health care specialists trained in the use of assessment tools (Lee, Jones, Mineyama & Zhang, 2002; Newby et al., 2015). These types of assessment tools are used to allow a larger number of patients to be screened for the presence of a mental illness in contexts where there is a scarcity of resources. Self-report assessment instruments are typically used as initial screeners for the presence of some form of psychopathology which then allows health care facilities to identify individuals in need of further treatment without further straining already overburdened health care systems (Bantjes, Kagee & Saal, 2019; Regnart et al., 2019). The use of these instruments however adds an additional

challenge as the accuracy of the instruments appears to be related to the level of education of the patient population. Practitioners in the context of South Africa have previously raised concerns about the existing inequality within the country and further state that such inequality poses further challenges for psychological assessment in this context (Fetvadjiev et al., 2015; Laher & Cockcroft, 2017).This large scale inequality means that the use of internationally adapted assessment tools prove useful only in cases where the population is made up of middle to upper class individuals who fall in the educated, employed population. In cases where these assessments are being used on low-income populations who had not completed their secondary education the utility of such instruments decreases significantly (Laher & Cockcroft, 2017). One of the areas of psychological assessment which has focused on the use of self-report assessment instruments and their utility in the country is personality assessment and multiple innovative strategies have been posed as potential solutions to the challenges that currently exist. Practitioners in the field of personality assessment have discussed methods to address the bias which can exist when assessment instruments are introduced and administered in contexts different from the original context where these instruments were developed and normed. These methods involve more qualitative data gathering techniques such as the use of the diary study method. The diary study method involves individuals making note of personality or psychopathology information in a daily diary is presented as an alternative and possibly more efficacious method with diverse samples. A study done by Fetvadjiev et al. (2017) explored the consistency of personality traits across both individualist and collectivist samples in South Africa using the diary method. This study did not find significant differences between the use of this method and the self-report method. The study however highlighted the movement towards more innovative ways to measure personality which could only serve to aid the utility of personality assessment instrument tools in the future and help to make these instruments more accessible to larger populations in the country.

There is a huge body of literature internationally that supports the use of self-report measures like the NEO-PI-R and the MMPI-2 for assessing personality in normally functioning individuals while instruments like the MCMI have been used to assess maladaptive personality patterns in clinical practice (Laher, 2012; Cheung & Fetvadjiev, 2016). Instruments such as the MMPI-2 have been cross-culturally validated across multiple different countries and contexts and the continued adaptation and research on the assessment instrument provides clinicians with well-established tests in countries where assessment is only beginning to develop with an efficient and reliable battery of assessment tools (Cheung, 2004).

5.2.2 Ethics of assessment in South Africa

Another significant challenge faced by practitioners using psychological assessment instruments in the context of South Africa is that there is of a lack of mental health specialists trained in the administration and interpretation of assessment tools (Baron, Davies & Lund, 2017; Bantjes, Kagee & Saal, 2019). When taking into account the number of health workers in the country, the total number of human resources working in Department of Health mental health facilities or NGOs is 9.3 per 100,000 population. There are 0.28 psychiatrists, 0.45 other medical doctors (not specialized in psychiatry), 7.45 nurses, 0.32 psychologists, 0.4 social workers, 0.13 occupational therapists, 0.28 other health or mental health workers per 100,000 population (Docrat, Besada, Cleary, Daviaud & Lund, 2019). While this study was completed in 2019 and there is a predicted 2% increase in staff per year, these numbers suggest that mental health care facilities in South Africa are understaffed. These numbers further point to a general lack of mental health care specialists trained in the administration and interpretation of assessment tools in the country. The study further reported that South Africa's public mental health expenditure in the 2016/17 financial year was USD 615.3 million, representing 5.0% of the total public health budget (provincial range: 2.1–7.7% of provincial health budgets). Inpatient care represented 86% of mental healthcare expenditure, with nearly half of total mental health spending occurring at the psychiatric hospital-level (population (Docrat, Besada, Cleary, Daviaud & Lund, 2019).

South Africa is one of the few countries that have legislation pertaining to the use of psychological assessments, this is of particular note due to the history of assessment within the country and how it was utilized under previous regimes (Laher & Cockcroft, 2014). Ethically the administration of assessment tools in South Africa should only be done by trained specialists who are competent in the administration and interpretation of the assessment tools being used. The lack of mental health care specialists trained in the administration and interpretation of assessment tools means that assessors may refer a larger number of individuals to health care facilities for further treatment and assessment. Other studies in the context of South Africa have cited a lack of resources leading to overburdened health care facilities which are ill-equipped to handle large patient populations (Truong, Paradies & Priest, 2014; Southwood & Van Dulm, 2015).

The studies included in the review commented on previous studies conducted in the field of psychological assessment in the context of South Africa which have pointed to the development and use of the online space as a means to improve mental health care service delivery in the

country. A survey conducted in 2017 found that 61.8% of households had at least one member who had access to the internet (Statistics South Africa, 2017). As a result, some researchers havecommented on the potential for online screening tools to be utilized to aid early detection and treatment of mental illnesses (Hassem & Laher, 2020). However, the use of the online space brings up further ethical issues which policy makers need to consider and address prior to the utilization of the online space. Currently there are no clear guidelines for the ethics of online screening for mental health in South Africa.

The use of the online space to screen for mental illness holds promise for a number of different reasons, these include the lowering of costs for test administration as online screening tools can be administered in the comfort of an individual's home (Hassem & Laher, 2020). Further benefits of the online space include reducing the likelihood of human error and increasing the accuracy of test scores and interpretation (Hassem & Laher, 2020). Another benefit includes low costs of the tests which increases its accessibility in rural areas. Scores are also saved and can be accessed for research or clinical purposes at any given time (Hassem & Laher, 2020; Naglieri et al., 2004). Several studies have also compared online versus pen-and-paper psychological tests with regards to psychometric properties and in those studies negligible differences were observed (Bagby et al., 2014; Grieve & De Groot, 2011; Hassem & Laher, 2019).

However, despite the promise of online psychological screening tools, concerns have also been raised regarding the disadvantages of this method of testing. One of the concerns is with regards to the testing environment, while it is beneficial and convenient for individuals to take tests in their homes it raises concerns over the standardised environment for testing (Hassem & Laher, 2020). Another concern relates to the test-taker's identity and how this could be authenticated as this opens up the possibility for cheating to take place (Buchanan, 2002). Testing online is not regulated. The online testing environment is unique in that there is no face-to-face contact with the practitioner and as such feedback is not often possible (Buchanan, 2002).

5.2.3 What are the benefits of using psychological assessment tools in the diagnosis and treatment of psychopathology in a South African context?

Several studies done in the context of mental illness and HIV have pointed to the importance of integrated mental health care services and the need for effective psychiatric screening procedures within HIV testing and treatment centres (Breuer et al., 2012). Sub-Saharan Africa has the highest rates of people living with HIV worldwide, with South Africa having the highest rates of any country worldwide (Freeman, Nkomo, Kafaar & Kelly, 2008). Studies done in sub-Saharan

Africa found that around half the population of people living with HIV screened positive for the presence of a mental illness (Breuer, Myer, Struthers & Joska, 2011; Nakimuli-Mpungu et al., 2012). Another study done in the United States found similar results when screening for mental illness among people living with HIV (Bing et al., 2001). These findings correspond with other South African studies which report the prevalence of mental illness in people living with HIV attending HIV clinics to be between 19 and 56 % (Olley, Seedat, Nei & Stein, 2004; Myer et al., 2008; Thom, 2009). These studies highlighted that among those living with HIV, mental illness was correlated with treatment adherence further highlighting the importance of assessment instruments in contexts similar to South Africa. The use of assessment instruments in this context aids health care facilities to accurately identify patient populations in need of further psychiatric treatment which has long term benefits with regards to treatment adherence (Boyes & Cluver, 2013; Baron et al., 2017). These studies included in the review are further supported by a study done by Mayston et al. (2012) which reported similar findings around the correlation between mental illness among people living with HIV and treatment adherence. Furthermore, the review found that it was beneficial to include certain assessment tools in the context of South Africa, these instruments such as the K10 & K6 were found to be valid and reliable in detecting the presence of mental illness (Andersen et al., 2011; Boyes & Cluver, 2013; Baron et al., 2017). The use of trans-diagnostic assessment screeners such as the Substance Abuse and Mental Illness Symptom Screener (SAMISS) allowed mental health care specialists to accurately identify individuals with comorbid mental illnesses (Breuer et al., 2014). These findings are further supported by a previous study done by Pence et al. (1999) assessing the utility of the SAMISS as a screening tool for mental illness among individuals living with HIV. Furthermore, the use of assessment instruments in clinical settings then aids the multi-disciplinary teams to formulate appropriate treatment plans for their patients (Seedat et al., 2009; Kagee, Tsai, Lund & Tomlinson, 2012). In contexts where mental health services are available the use of screening tools such as the CES-D-10 has been advocated as a way to detect the presence of mental illnesses (Kagee et al., 2012).

Furthermore, the use of assessment tools in the included studies was shown to be useful as a tool in the early phase of treatment as this aided in the accurate detection and treatment of symptoms of mental illness. This was an important finding as it has previously been stated that low resource contexts such as South Africa require strategies to aid the strain felt by overburdened health care facilities (Breuer et al., 2014; Regnart et al., 2019). Killian, Van der Riet, O'Neill, Hough and Zondi (2008) also support the findings of the review and the role of assessment instruments as a

method to gain information around the presenting problem of patients which then informs the treatment plan formulated by the multi-disciplinary team. Assessment instruments have commonly been used in clinical settings during all phases of the treatment process and forms an integral part of the action plan developed by the treating team.

5.2.4 Barriers and challenges in the field of psychological assessment

The studies which have been included in this review show that there has been a shift towards adapting psychological assessment tools for use with local South African populations however progress in the field has been slow due to a number of challenges which will be discussed. The studies included in the review discussed several strategies which are being implemented to make psychological assessment tools more accessible to the general population (Andersen et al., 2011; Bantjes, Kagee & Saal, 2019). However, a more predominant theme of the studies were the challenges involved in using these tools in the context of South Africa. These challenges included the lack of financial resources, the lack of trained mental health specialists capable of administering and interpreting assessment tools, linguistic and cultural barriers as well as the types of tools commonly used. A major challenge highlighted was the lack of financial resources and this was highlighted in two ways among the studies included. The first was that the lack of financial resources meant that there was a challenge with regards to developing and testing new assessment instruments which are deemed to be culturally appropriate. Gladstone et al. (2010) also agree with these findings, stating that a challenge of developing tools which are linguistically and culturally appropriate arises when funds have not been specifically allocated for the community being served. Financial restriction being a specific challenge to the development of assessment tools was highlighted as a key barrier to the development of assessment tools which are deemed culturally appropriate in the included studies (Andersen et al., 2011; Baron, Davies & Lund, 2017; Bantjes et al., 2019).

Fetvadjiev et al. (2015) noted the rich diversity of cultures and languages in South Africa has been poorly accommodated in terms of psychological assessment. This has led to the use of an emic–etic approach in developing culture-informed instruments for assessment of personality in South Africa. It is widely known that in South Africa many clinicians in an attempt to ensure that clinical practice takes patients' languages into account have translated assessment instruments (Bornman et al. 2010; Southwood & Van Dulm, 2015). However, it should be noted that translations often fail to target what the original tool aimed to assess. Translation from one language to another may not factor in cultural intricacies and may lead to the use of items or

concepts that are unfamiliar to the target populations (Trembath, Wales & Balandin, 2005). The studies included in the review also found this to be a challenge when translating tools for use in the various languages. Making use of a measure with a population besides the one it was created for, without taking any linguistic or cultural factors taken into consideration, puts the validity of such a measure at risk (Bornman et al. 2010).

In addition, the lack of financial resources meant that the sample sizes used in the included studieswas quite limited and thus the results of the studies could not be used to generalise to the larger population. This was due to the difference in successful detection of psychopathology among different population groups in South Africa. Other studies done internationally also agree with thenotion that the accuracy of different assessment tools varies depending on the ethnic population with which the instruments are used (Patel et al., 2008; Rahm, 2015). Practitioners in the field of psychological assessment in South Africa have previously raised concern over the use of internationally developed tests which have not been adapted for use in South Africa. The present review notes that the use of assessment tools which have not been adapted for use on local populations is still a major concern in South Africa. The challenges faced by practitioners utilising psychological tools in a multicultural, socioeconomically and linguistically diverse population is not unique to South Africa (Mpofu & Ortiz, 2009; Suzuki & Ponterotto, 2007). The limited resources available to practitioners means that there is always tension between responding appropriately to the diversity present in South Africa and compromising assessment principles of standard administration (Young & Edwards, 2013). Studies done internationally also address the complexity which can be seen in the use of instruments developed in western context and used in other contexts. These studies have pointed to the expression of symptoms in separate cultural contexts differing and this further complicates the use of assessment tools in contexts different from the country which the instrument was first developed and normed (Cheung, Kwong & Zhang 2003; Mak, Cheung & Leung 2012; Cheung & Mak, 2018). A previous study focusing on Indian females reported that the population had a tendency to somatise their pathology due to a stigma that exists with regards to mental illness (Laher, Bemath & Subjee, 2018). Hassem and Laher (2019) reported on the expression of pathology differing between separate cultural contexts while addressing the use of depression screening tools within the context of South Africa. These studies further show the issues which exist in using assessment tools in contexts which differ from the country where the instruments were originally developed and normed.

A previous study done which assessed the prevalence rate of Major Depressive Disorder (MDD) in South Africa found that the rate was 4.6 % and furthermore it was found that the majority of

depression screenings occurred in primary care facilities (Hassem & Laher, 2019). Additionally accurate diagnosis of MDD occurs in less than 50% of the cases in primary care facilities. Further supporting the findings made in the review around the challenges to using psychological assessments in South Africa, primary health care providers mentioned a lack of resources available to facilities, time constraints and lack of training as the main contributors to the inaccuracy of screening for MDD (Hassem & Laher, 2019).

5.3 Implications for theory

The current review comments on the recent development and adaptation of psychological assessment tools in South Africa and has made specific mention of the movement towards emic approaches to the development of assessment tools. Primarily this movement has been seen in the development of personality assessment instruments such as the South African Personality Inventory (SAPI) project (Valchev et al., 2014). The emic approach to assessment development emphasizes the relevance of culturally specific characteristics, stating that personality is also shaped by culture (Benet-Martinez & Oishi, 2008). One of the main aims of the emic approach is to identify individual differences in personality that are characteristic of a cultural context (Saucier, Thalmayer, & Bel-Bahar, 2014). The etic approach seeks to understand to what extent a theoretical personality model is successfully replicated in a new cultural context (Rolland, 2002). This approach focuses more on universal factors assumed to exist in all contexts. The studies included in the review appear to support the recent movement towards emic approaches to assessment development and appear to highlight indigenous aspects which are assumed to be integral when developing assessment tools for the South African context (Andersen et al., 2011; Boyes & Cluver, 2013; Baron et al., 2017).

The shift of focus in developing assessment tools primarily for the context of South Africa and the shift of focus from assumed universal factors to more indigenous context-based forms of knowledge appear to support the theoretical framework used in the current review. The movement from Mode 1 knowledge production towards Mode 2 knowledge production proposed by Gibbons et al. (1994) appears to correlate with the recent studies done in South Africa. This theory was used in the current review to understand the development of psychological assessment in South Africa. The shift from the previous regime seen in South Africa to the new regime post 1994 has led to a different approach in how knowledge in the field of psychological assessment is created and disseminated. A shift from more insular and hierarchical ways of knowledge production towards more context-based forms of knowledge production (Etzkowitz &

Leydesdorff, 2000). The previous form of knowledge production was understood as Mode 1 knowledge production and was characterised by discipline specific forms of knowledge. This form of knowledge production was characterised by universally assumed factors which were then tested in different contexts (Gibbons et al., 1994).

Mode 2 knowledge production assumes that knowledge emerges not from academia but from practice, it is problem-orientated and non-hierarchical. Mode 2 knowledge production believes that solutions to societal problems requires that there be an interaction between those from academia (e.g., researchers) and those indigenous to the context of the problem (Moravec, 2007). The shift to this form of knowledge production necessitates that knowledge/research produced takes into consideration the nuances of the specific contexts where knowledge is produced (Jacobs, 2000). The current review highlighted attempts made in recent research in the field of psychological assessment to incorporate the ideas of a Mode 2/knowledge society as attempts are being made to account for the context where research is being done. Special consideration is made in contexts which are multicultural such as the one found in South Africa. Previous research in the field of assessment focused on an etic approach where assessment tools were being cross-culturally validated (Andersen et al., 2011; Boyes et al., 2012). However recently there has been a shift towards developing assessment tools in the context of South Africa which focus on indigenous aspects such as the 11 different official languages in the country (Laher & Cockcroft, 2017). The movement towards more emic approaches to assessment development aim to redress previous mistakes made in the field of psychological assessment and to move towards assessment tools which are deemed valid, fair and reliable.

5.4 Limitations of the Review

The first limitation of this current study was that I was the sole reviewer. As a result of resource and time constraints a secondary reviewer was not appointed to assist during the process of conducting the review. Given this factor it is possible that my own biases may have influenced the studies which were included in the review. With that in mind steps were taken to ensure that the review process was carefully and methodically documented to ensure that the current study was of high quality and followed a strict methodology. It is thus my hope that through discussing the research process and including a section on reviewer reflexivity in addition to discussions with my supervisor and using a quality screening tool, I have contained some of my own biases.

A second limitation to be considered is the search strategy that was employed and the likelihood of publication bias and language bias. The current review only included studies published in the public domain and excluded grey literature such as university research projects, conference papers etc. Additionally, this review only included studies published in English. Available literature which has been published in English is not likely to be an accurate representation of the larger body of research that has been conducted. As a result, conclusions drawn in this review may not be an accurate reflection of available research.

5.5 Strengths of the Review

Despite the limitations which have been mentioned above, this review also had some strengths. Based on the extensive searches of databases which were done during this review process, a first major strength of this review was that it seemingly was among the first studies to review psychological assessment and its utility in a South African context. This systematic review provided a quick and thorough mapping of available research on psychological assessment in South Africa. In addition to this, it further described the current status of this research field, and offered commentary that can inform further policy. More specifically, this review provided insight into the barriers to utilizing psychological assessment tools in a South African context. Furthermore, it also provided insight into some of the benefits of continued use of these assessment tools and strategies to improve their accessibility to the larger population of South Africa.

A second strength of the review is that findings can also prove to be useful for other resource constrained countries. A commonly cited critique of systematic reviews is that they decontextualize individual studies. In an attempt to preserve context, I provided detailed summaries of the sample, setting, methods, and findings of each of the studies included in this review. In this way, readers will then be able to decide for themselves whether the contexts of the included studies in the current review are similar or different to their own. This review, therefore, contributes to the growing body of literature on psychological assessment both locally and internationally.

Lastly an additional strength of this study was that I assessed all included studies to be of a high quality and classified them as low risk. Although using a more sensitive quality assessment instrument might have yielded slightly different or more specific results, based on the quality assessments conducted in this review, it is the opinion of the reviewer that the findings of the review can be considered robust.

5.6 Recommendations for Future Research

Based on questions that emerged from this study and the gaps I identified in the literature, I will make some recommendations for future research. Firstly, it is important that future research into the utility of psychological assessment tools in a South African context examine the cultural and gender differences among different populations in South Africa. This is with regards to possible measurement biases that may exist, the current studies included had fairly homogenous groups and thus the results cannot be generalised to other ethnic populations in the country.

Secondly, this review highlighted the need for more extensive training for test administrators (e.g.,lay counsellors) in administration of assessment and screening tools to avoid over-detection of patients which leads to increased referrals for further assessment and treatment. This is of particular importance due to the findings of several of the included studies which emphasised caution in interpreting findings of the research due to this factor.

Lastly, future research into the utility of psychological assessment tools in the context of South Africa needs to make use of a larger participant group. The sample size used in the included studies was determined to be small and usually located with only a small group of people (eg. HIV individuals), and thus, the generalizability and reliability of the studies were limited. As a result, future studies would require reproduction on a larger scale in order to appropriately identifytrends.

5.7 Conclusion

From this review, it is evident that the continued use of psychological assessment tools in the context of South Africa has some utility, specifically in the context of clinical settings. However, several challenges still exist which call into question the utility of these instruments as they are currently being utilized. These challenges/barriers included the lack of trained mental health specialist competent in the administration and interpretation of psychological assessments, lack of financial resources to develop and adapt internationally developed tests. Additional barriers also included linguistic and cultural challenges as well as differences found in how mental illness is understood and expressed among different ethnic groups in the country. Failure to address these challenges may lead to a public mistrust of assessment instruments in addition to overburdening already strained health care facilities in the country. The findings of the review in addition to literature focusing on the development of psychological assessment tools in South Africa appear to support the notion of a movement from a Mode 1 form of knowledge production towards a

Mode 2 knowledge production proposed by Gibbons et al. (1994). Furthermore, the movement towards more emic approaches to assessment development align with the ethical principles outlined by the Employment Equity Act in 1998. According to the act, assessment tools used in South Africa are required to be proven reliable, valid and fair for use with a South African population.

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Appendix A: PRISMA Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in	

		the search and date last searched.	
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	

Section/topic	**#**	**Checklist item**	**Reported on page #**
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	
Additional	16	Describe methods of additional analyses (e.g., sensitivity or subgroup	

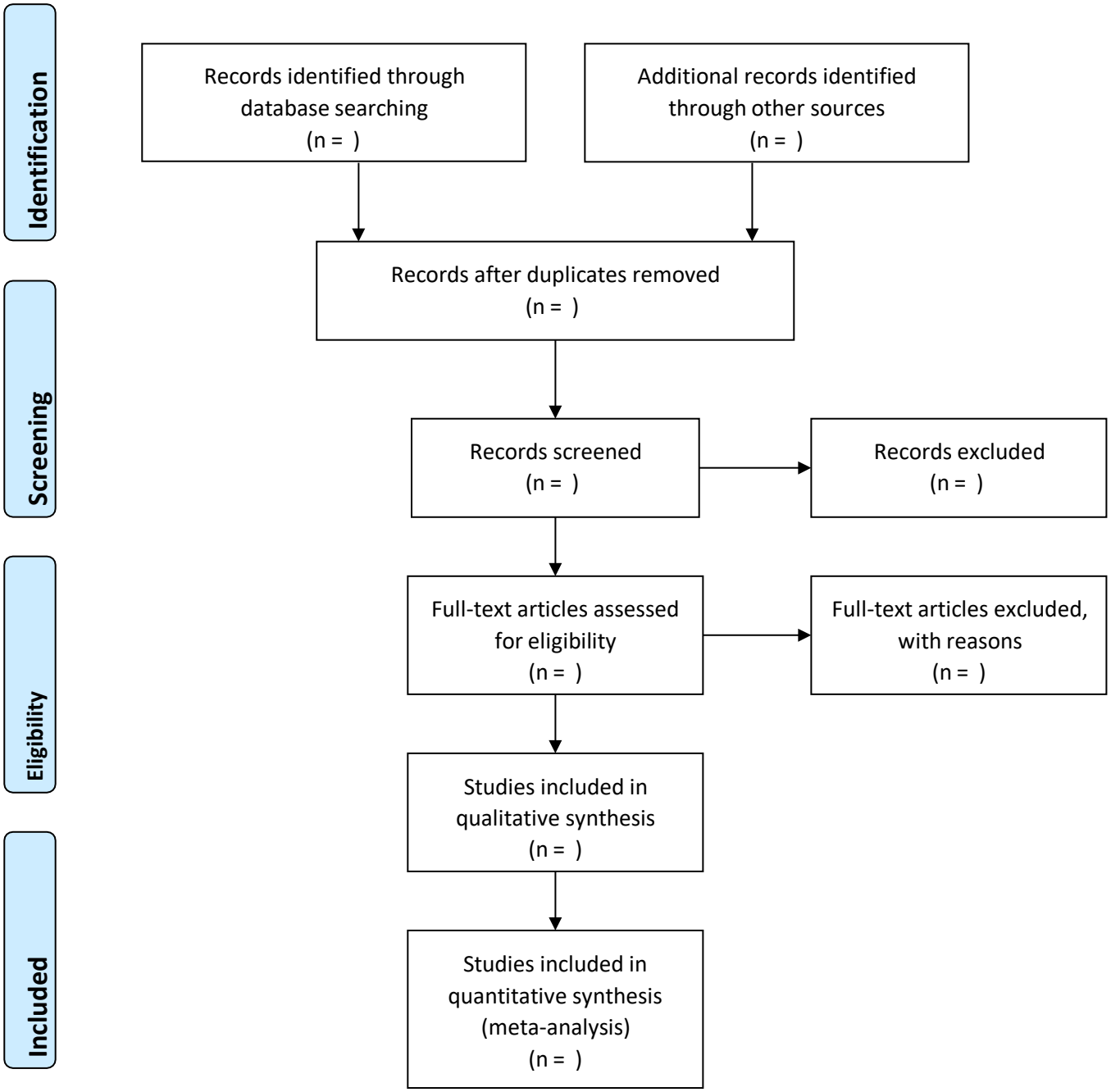
Analyses		analyses, meta-regression), if done, indicating which were pre-specified.	
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	

FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: **www.prisma-statement.org**.

Appendix B: PRISMA Flow-diagram



Appendix C: CASP Qualitative Checklist

Screening Questions:

1. Was there a clear statement of the aims of the research? **□Yes □Can't tell □No**

HINT: Consider

□ What was the goal of the research?

□ Why it was thought important?

□ Its relevance

2. Is a qualitative methodology appropriate? **□Yes □Can't tell □No**

HINT: Consider

□ If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants

□ Is qualitative research the right methodology for addressing the research goal?

Is it worth continuing?

Detailed questions:

3. Was the research design appropriate to address the aims of the research? **□Yes □Can't tell □No**

HINT: Consider

□ If the researcher has justified the research design (E.g. have they discussed how they decided which method to use)?

4. Was the recruitment strategy appropriate to the **□Yes □Can't tell □No**

aims of the research?

HINT: Consider

 If the researcher has explained how the participants were selected

 If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study

 If there are any discussions around recruitment (e.g. why some people chose not to take part)

5. Was the data collected in a way that addressed the research issue? **Yes Can't tell No**

HINT: Consider

 If the setting for data collection was justified

 If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)

 If the researcher has justified the methods chosen

 If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted, or did they use a topic guide)?

 If methods were modified during the study. If so, has the researcher explained how and why?

 If the form of data is clear (e.g. tape recordings, video material, notes etc)

 If the researcher has discussed saturation of data

6. Has the relationship between researcher and **Yes Can't tell No**

participants been adequately considered?

HINT: Consider

 If the researcher critically examined their own role,

potential bias and influence during

(a) Formulation of the research questions

(b) Data collection, including sample recruitment and

choice of location

 How the researcher responded to events during the study

and whether they considered the implications of any changes

in the research design

7. Have ethical issues been taken into consideration? **Yes Can't tell No**

HINT: Consider

 If there are sufficient details of how the research was explained

to participants for the reader to assess whether ethical standards

were maintained

 If the researcher has discussed issues raised by the study (e.g.

issues around informed consent or confidentiality or how they

have handled the effects of the study on the participants during

and after the study)

 If approval has been sought from the ethics committee

8. Was the data analysis sufficiently rigorous? **Yes Can't tell No**

HINT: Consider

 If there is an in-depth description of the analysis process

 If thematic analysis is used. If so, is it clear how the

categories/themes were derived from the data?

 Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process

 If sufficient data are presented to support the findings

 To what extent contradictory data are taken into account

 Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

9. Is there a clear statement of findings? **Yes Can't tell No**

HINT: Consider

 If the findings are explicit

 If there is adequate discussion of the evidence both for and against the researchers arguments

 If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)

 If the findings are discussed in relation to the original research question

10. How valuable is the research?

HINT: Consider

 If the researcher discusses the contribution the study makes to existing knowledge or understanding e.g. do they consider the findings in relation to current practice or policy? , or relevant research-based literature?

 If they identify new areas where research is necessary

 If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Appendix D: CASP Quantitative Checklist (Adapted)

Screening Questions:

1. Was there a clear statement of the aims of the research? **□Yes □Can't tell □No**

HINT: Consider

- What was the goal of the research?
- Why it was thought important?
- Its relevance

2. Is a quantitative methodology appropriate? **□Yes □Can't tell □No**

HINT: Consider

- If the research seeks to examine a relationship between variables with the aim of making predictions
- Is quantitative research the right methodology for addressing the research goal?

Is it worth continuing?

Detailed questions:

3. Was the research design appropriate to address the aims of the research? **□Yes □Can't tell □No**

HINT: Consider

- If the researcher has justified the research design (E.g. have they discussed how they decided which method to use)?

4. Was the recruitment strategy appropriate to the aims of the research? (Assess selection bias) **□Yes □Can't tell □No**

HINT: Consider

 If the researcher has explained how the participants were selected

 Are the individuals selected to participate in this study likely to be representative of the target population?

 If there are any discussions around recruitment (e.g. why some people chose not to take part)

5. Was the data collected in a way that addressed the research issue? **Yes Can't tell No**

HINT: Consider

 If the setting for data collection was justified

 If it is clear how data were collected

 If the researcher has justified the methods chosen

 If the researcher has made the methods explicit

 Were data collection tools shown to be valid?

 Were data collection tools shown to be reliable?

 If methods were modified during the study. If so, has the researcher explained how and why?

6. Have ethical issues been taken into consideration? **Yes Can't tell No**

HINT: Consider

 If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained

 If the researcher has discussed issues raised by the study (e.g. issues around informed consent, anonymity, and confidentiality or how they have handled the effects of the study on the participants during and after the study)

 If approval has been sought from the ethics committee

7. Was the data analysis sufficiently rigorous? **Yes Can't tell No**

HINT: Consider

 If there is an in-depth description of the analysis process

 Were the statistical methods appropriate for the study design?

 If sufficient data are presented to support the findings

 To what extent contradictory data are taken into account

 Were potential sources of bias discussed?

8. Is there a clear statement of findings? **Yes Can't tell No**

HINT: Consider

 If the findings are explicit

 If there is adequate discussion of the evidence both for

and against the researchers arguments

 If the findings are discussed in relation to the original

research question

9. How valuable is the research?

HINT: Consider

 If the researcher discusses the contribution the study makes to existing knowledge or understanding e.g do they consider the findings in relation to current practice or policy, or relevant research-based literature?

 If they identify new areas where research is necessary

 If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used