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Research Report

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A systematic review exploring the psychosocial factors affecting adolescent access to HIV treatment services

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Abstract

Context: Adolescent populations are a prominent group implicated in the global HIV epidemic. Adolescents living with HIV (ALHIV), as a collective, represent a growing cohort presenting with clinically distinct psychosocial vulnerabilities which differ from both child and adult HIV-positive populations. Despite the global realization that increasing access to antiretroviral treatment promotes significant bio-medical gains amongst ALHIV, the psychosocial impact of HIV on the health and well-being of ALHIV has been overlooked. **Objective:** To identify, synthesize, and discuss the psychosocial factors which affect ALHIV who are accessing HIV treatment services in South Africa. **Data sources**: Only empirical research published in English were searched for via four electronic research databases (i.e., ProQuest, Web of Science, EBSCO, and Sabinet Online) of the University of the Witwatersrand on 1 August 2020. **Eligibility criteria:** Full-text articles published in English were included in the sample on the following basis: (1) the identified studies included HIV-positive adolescents (≥ 10 years old and ≤ 19 years old) residing in South Africa; (2) the phenomena under investigation within the identified studies related to psychosocial factors which affect ALHIV accessing HIV treatment services in South Africa; (3) measures exploring any form of psychosocial factors associated with ALHIV in South Africa had to be utilized; (4) study research designs were either an observational or cohort study; (5) studies were of a quantitative or qualitative nature, and (6) studies ought to have been published between 1 January 2000 and 31 July 2020. **Data extraction:** Data from the articles included in this systematic review were extracted using predefined data fields, including study quality indicators. **Data synthesis:** A total of 18 empirical articles met the inclusion criteria informing this research report. From the articles included in this systematic review, it was evident that ALHIV accessing HIV treatment services in South Africa were impacted by seven major psychosocial factors. Specifically, this included their (1) psychosocial development, (2) quality of life, (3) experience of adversity, (4) availability of social support, (5) experience of HIV stigma, (6) HIV status disclosure, and (7) adherence to ART. **Conclusion:** The physiological, social, behavioural, and cognitive functioning of ALHIV accessing HIV treatment services predisposed them to psychosocial distress, which in turn had implications for their health and well-being.

Key terms

Adolescents, HIV, psychosocial health, South Africa, systematic review

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Introduction

This research is geared towards an exploration of the psychosocial factors affecting adolescents living with HIV (ALHIV) who are accessing HIV treatment services in South Africa via a systematic review of the literature on this topic. Psychosocial factors are multidimensional constructs encompassing one's (1) mood status (i.e., anxiety, depression, distress, and positive affect), (2) cognitive behavioural responses (i.e., satisfaction, self-efficacy, self-esteem, and locus of control), and (3) social factors (i.e., socio-economic status, education, employment, religion, ethnicity, family, physical attributes, locality, relationships with others, changes in personal roles, and status) (Gellman & Turner, 2013). For the purpose of this research report, psychosocial factors will, from this point onward, be defined as "any exposure that may influence a health outcome through a social or psychological mechanism" (Macleod & Smith, 2003, p. 565). Psychosocial factors are significant causes of health inequalities (Macleod & Smith, 2003) and either have a positive or negative psychosocial impact (i.e., the net effect of psychosocial factors on one's social or psychological well-being) on health and behavioural outcomes, which affect one's quality of life (QoL) (Gellman & Turner, 2013; UNAIDS, 2018). QoL, an indicator of one's psychosocial health (Lutgendorf et al., 1994), is an important psychosocial factor associated with health outcomes (Vu et al., 2020) and is defined as the perception of one's "position in life in the context of the culture and value systems in which [one lives in] and in relation to [one's] goals, expectations, standards, and concerns" (World Health Organization, 2012, p. 11). From a public health perspective, gaining insight into the psychosocial factors affecting the every-day-life of ALHIV in South Africa is critical in order to (1) facilitate the provision of holistic healthcare that takes mental health and QoL into account, and (2) promote an understanding of the lifeworld of ALHIV receiving HIV treatment. An understanding of the lifeworld of ALHIV is essential to support antiretroviral therapy (ART) adherence initiatives aimed at achieving positive health outcomes in the South African context.

Rationale

Adolescent populations are a prominent group implicated in the global HIV epidemic, and ALHIV, as a collective, represent a growing cohort presenting with clinically distinct psychosocial vulnerabilities which differ from both child and adult HIV-positive populations (Jaspan et al., 2009; Marfatia & Naswa, 2010). ALHIV are comprised of two sub-groups: vertically/perinatally-infected ALHIV (VALHIV) and horizontally/behaviourally-infected ALHIV (HALHIV) (Evans et al., 2013; Sherr et al., 2018). VALHIV and HALHIV differ on the basis of their mode of HIV infection, the impact of infection, length of infection, and impact of ART (Davies & Hamlyn, 2018; Sherr et al., 2018). The survival of ALHIV poses a unique challenge to existing HIV treatment programmes (Anderson et al., 2020; Whetten et al., 2008) as ALHIV sub-populations have dissimilar psychosocial susceptibilities requiring specialized healthcare interventions (Goga et al., 2019; Slogrove & Sohn, 2018).

There is a growing consensus that despite the global realization that increasing access to ART promotes significant bio-medical gains (Roser & Ritchie, 2020), the psychosocial impact of HIV on ALHIV has been overlooked, particularly in the Global South (Close, 2010; Mavangira & Raniga, 2015). The pervasive nature of HIV has been documented in all regions of the world with research conducted on ALHIV primarily occurring in the Global North, which has vastly different epidemiological contexts to that of the Global South (Ashaba et al., 2019; Evans et al., 2013; Kim et al., 2015; Maskew et al., 2019). In particular, research findings on ALHIV populations in developed countries cannot be extrapolated to or compared with African populations where ALHIV are exposed to multiple additional risks and vulnerabilities (Woollett et al., 2017). In sub-Saharan Africa, limited research is available on ALHIV, mental health outcomes, and the prevalence of mental, neurological, and substance use (MNS) disorders in particular (Kemigisha et al., 2019; Kim et al., 2015; Woollett et al., 2017).

Historically, the evaluation of HIV/AIDS treatment programmes in sub-Saharan Africa has focused on adults and children (<12 years of age) living with HIV (LHIV) while ALHIV have been overlooked (Ashaba et al., 2019; Boyes et al., 2018; Cluver, Orkin, Gardner, et al., 2012; Kim et al., 2015; Lwidiko et al., 2018; Toska et al., 2019; Woollett et al., 2017). Research on ALHIV in sub-Saharan Africa is typically conducted in specialist, well-resourced clinics that may not be representative of the broader health systems in sub-Saharan Africa at large (Boyes et al., 2018). Empirical research on mental health among ALHIV has lagged considerably behind that of adults, particularly in poorly resourced HIV endemic communities (Besthorn et al., 2018; Boyes et al., 2018; Evans et al., 2013; Kemigisha et al., 2019; Lwidiko et al., 2018; Van Vilsteren et al., 2011; Woollett et al., 2017).

Although limited in number, studies conducted in sub-Saharan Africa have reported inconsistent findings regarding the mental health of ALHIV (Kemigisha et al., 2019; Toska et al., 2019). Due to the nature of those studies being either entirely qualitative or quantitative in nature, their results are not entirely transferable or generalizable to that of the South African context (Boyes et al., 2018; Evans et al., 2013; Toska et al., 2019; West et al., 2019; Woollett et al., 2017). The available research conducted amongst ALHIV has demonstrated a significant burden of both internalizing and externalizing symptoms. In addition, findings from South Africa have highlighted that ALHIV experience an abundance of biological, behavioural, social, and economic vulnerabilities (Jaspan et al., 2009; Koenig et al., 2011; Marfatia & Naswa, 2010; Whetten et al., 2008) which have been implicated in their sub-optimal utilization of HIV testing services, timely initiation of ART, successful adherence to ART, and retention in HIV care programmes (Anderson et al., 2020; Maskew et al., 2019; Sohn & Hazra, 2013; Van Wyk & Davids, 2019). Therefore, the local examination of ALHIV in South Africa is critical; utilization of a systematic review may consolidate and synthesize research conducted in the South African context whilst ensuring that the mental health and QoL of ALHIV are taken into account.

Background

Epidemiology

Approximately 37.9 million individuals across the globe were LHIV in the beginning of 2019; an estimated 36.2 million adults and 1.7 million children (under the age of 15) were LHIV (UNAIDS, 2019). Amongst all people LHIV (PLHIV) across the globe, an estimated 79% knew their status, 62% were accessing treatment, and 53% were virally suppressed in 2018 (UNAIDS, 2019). The highest prevalence of PLHIV are located within South Africa (AVERT, 2020; Moosa & Jeenah, 2012a; Van Wijk, 2013). Specifically, 7.97 million people – an estimated 13.5% of South Africa's total population – were LHIV in 2019 (STATS SA, 2019). STATS SA (2019) indicated that out of the total population of PLHIV in South Africa, 22.71% were women (aged 15-49), 19.07% were adults (aged 15-49), and 4.3% were youth (aged 15-24).

The HIV/AIDS 90–90–90 targets was a strategy intended to promote the scaling-up of HIV treatment programmes across the globe in order to enable: (1) 90% of all PLHIV to know their status by 2020; (2) 90% of all PLHIV to receive sustained ART by 2020; and (3) 90% of all PLHIV receiving ART to be virally suppressed by 2020 (UNAIDS, 2014). In South Africa, progress towards achieving the HIV/AIDS 90–90–90 targets in 2018 was substantial: 90% of PLHIV were aware of their status, of which 68% were receiving ART; of those diagnosed and receiving ART, 87% were virally suppressed (AVERT, 2020). Notwithstanding South Africa's progress towards the HIV/AIDS 90–90–90 targets, the world's largest child (<12 years of age) and adolescent population LHIV are located within South Africa (Bhana et al., 2016; Maskew et al., 2019; Petersen et al., 2010; Zanoni et al., 2016) and constitute a significant proportion of all PLHIV in South Africa (Cluver, Orkin, Gardner, et al., 2012; Toska et al., 2019; Van Vilsteren et al., 2011; Zanoni et al., 2016).

Healthcare context of South Africa

South Africa's healthcare system has experienced a history of fragmentation within the public health sector as well as between public and private sectors. Such fragmentation has resulted in primary care facilities being inadequately resourced and notably overburdened resulting in their constrained ability to provide equitable healthcare (Coovadia et al., 2009; Schneider et al., 2016; Spedding et al., 2014). Structural, social, and economic inequalities, which are of both a historical and contemporary nature, have had a profound impact on the quality of health and well-being of individuals residing in South Africa (Coovadia et al., 2009; Spedding et al., 2014). Marked differences in rates of mortality and disease between races exist, and such differences are reflective of unequal access to basic living conditions and other determinants of health (Candy et al., 2018; Coovadia et al., 2009). Moreover, substantial health inequalities exist between and within provinces, as well as between men and women in South Africa (Ataguba et al., 2011; Coovadia et al., 2009).

In addition to structural inequalities, health inequalities are generally more salient amongst adolescents. Adolescents frequently experience a number of structural, familial, systemic, and social barriers, which negatively affect both their utilization and subsequent experience of healthcare services (Cooper et al., 2015; Kung et al., 2016; National Department of Health, 2017). It is noted that the experience of such barriers results in the experience of limited access to specialized services, space and privacy issues, shortage of medication and supplies, long patient waiting times, lengthy travel time and related transportation costs to healthcare facilities, and judgmental attitudes of health providers, as well as breaches of patient confidentiality (Geary et al., 2014; James et al., 2018; Nkosi et al., 2019; Shabani et al., 2018).

Status of mental healthcare in South Africa

Mental health is a prominent feature implicit within one’s psychosocial functioning and is a prerequisite to one’s social and emotional well-being (National Department of Health, 2018). Mental health ought to be protected, respected, and preserved (Schierenbeck et al., 2013; UNAIDS, 2018); however, mental health service delivery in South Africa has been largely inefficient (Naidoo et al., 2019; Petersen & Lund, 2011). According to the World Health Organization (WHO), limited access to mental healthcare has contributed to South Africa’s large mental health treatment gap (Jacob & Coetzee, 2018; Schneider et al., 2016; Spedding et al., 2014; Stein et al., 2005).

In light of the existing mental health treatment gap, South Africa established the Child Care Amendment Act of 1996 (South African Government, 1996), the Mental Health Care Act of 2002 (South African Government, 2002) and the 2013-2020 Mental Health Policy Framework and Strategic Plan (South African Government, 2014) (SA MH Policy) which highlighted government’s commitment to addressing the mental health treatment gap (Docrat et al., 2019; Schneider et al., 2016; Spedding et al., 2014). Notably, the Child Care Amendment Act of 1996 was intended to establish mental health services for children and adolescents, whilst the SA MH Policy was drafted to facilitate the integration of mental healthcare into primary healthcare facilities through the establishment of multidisciplinary health teams in accord with non-specialized mental health professionals (Schneider et al., 2016; Spedding et al., 2014). Furthermore, the drafting of the national health insurance policy (NHI) was intended to “transform the unequal and racially skewed healthcare system into a national institution based on equity, social solidarity, fairness, affordability, appropriateness, and effectiveness”

(Mayosi et al., 2012, p. 2036). NHI pilot sites were envisioned to pilot mental health integration; however, integration has been hindered by a number of factors which include the inadequate availability of financial and human resources, limited availability of evidence-based treatment guidelines, limited public awareness of mental health, the impact of stigma towards mental illness, and a low level of health-system readiness to facilitate the recommended integration (Coovadia et al., 2009; Docrat et al., 2019; Mayosi et al., 2012; Narsi, 2018).

Despite South Africa's legislative commitment to mitigate against the mental health treatment gap, recent data published by the WHO Atlas survey (World Health Organization, 2017a) is concerning. The WHO Atlas survey monitors the extent of mental healthcare integration into primary healthcare facilities and has highlighted the paucity of mental health resources in South Africa (Burns, 2010). Specifically, the WHO Atlas survey indicated that limited financial support from South Africa's government was evident by a mere 3% of the total health budget being directed towards mental healthcare in 2017. In addition, the provision of mental healthcare towards adolescents and their subsequent experience of such services have been hindered by difficulties pertaining to availability, accessibility, acceptability, and quality of mental health service delivery as a whole (Naidoo et al., 2019; Petersen & Lund, 2011; Schierenbeck et al., 2013).

Literature review

Adolescent psychosocial vulnerability

Adolescence, according to the WHO (n.d.), is defined as a normative psychosocial developmental period in which individuals (aged 10 to 19 years old) transition through the three stages of adolescence (Barrett, 1996) and experience physiological, psychological, and social changes (Besthorn et al., 2018; Bhana et al., 2016; Dawood, 2015). Specifically, one's transition into early adolescence (10–13 years) necessitates the formative formation of identity, susceptibility to conformity, and the increased need for belonging (Barrett, 1996). Thereafter, the transition into middle adolescence (14–16 years) involves an increase in one's general competitiveness, the materialization of close friendships, and the experience of intimate relationships (Barrett, 1996). Lastly, the transition into late adolescence (17–19 years) encompasses independence-dependence struggles, the tendency to discover the meaning of life through activism, and an increased incidence of depression and suicide (Barrett, 1996). In summation, the onset of adolescence entails the fostering of an individual's identity, autonomy, decision-making capabilities, coping skills (Besthorn et al., 2018), and is associated with the development of sexuality, questioning of authority, greater peer influence, and increased impulsivity and risk-taking behaviour (Anderson et al., 2020; Donenberg & Pao, 2003, 2005).

In conjunction with the inherent developmental vulnerabilities associated with the onset of adolescence, adolescent populations have been identified as a high-risk group vulnerable to mental health complications from the exposure to multiple and cumulative types of stressors (Dawood, 2015; Kemigisha et al., 2019; Kim et al., 2015). Globally, the most prevalent mental health complications amongst adolescents is that of mental, neurological, and substance use (MNS) disorders (Ashaba et al., 2019; Kim et al., 2015). Particularly prevalent amongst individuals who suffer from MNS disorders is the experience of neglect, stigma, and discrimination from healthcare professionals, which commonly results in poor health outcomes, isolation, and an increased incidence of suicidality (Corrigan et al., 2014; Knaak et al., 2017; Meyer et al., 2018). Moreover, the experience of MNS disorders within adolescent populations has been associated with an increased incidence of high-risk sexual practices, early sexual debut, and substance use and abuse (Ashaba et al., 2019; Dick & Ferguson, 2015; Mutumba & Harper, 2015; Netshiombo & Mashamba, 2012; Pillay & Wassenaar, 2007; Saluja et al., 2004).

Notwithstanding the aforementioned psychosocial challenges associated with the onset of adolescence, Donenberg & Pao (2003) highlighted the drivers of horizontal HIV-risk behaviour amongst HIV-negative adolescents. Firstly, personal attributes of HIV-negative adolescents predispose such populations to HIV-risk behaviour. Personal attributes include cognitions (i.e., knowledge, attitudes and beliefs, and impaired decision-making capabilities), affect dysregulation, mental health problems (i.e., internalizing and externalizing behaviour), history of sexual abuse, and personality traits (i.e., sensation seeking, achievement orientation, and value on health) (Donenberg & Pao, 2003, 2005). Secondly, the family functioning and family context of HIV-negative adolescents affect both their attitudes and sexual risk-taking behaviour. Affective characteristics (i.e., warmth, support, and honesty), instrumental characteristics (i.e., monitoring, supervision, and control), parent-adolescent communication, and parental attitudes and behaviour have a significant influence on the psychosocial well-being of adolescents (Donenberg & Pao, 2003, 2005). Thirdly, peer and partner relationships of HIV-negative adolescents influence their enactment of HIV-risk behaviour. In particular, relationship concerns, peer influence, and partner communication are salient factors implicated in adolescent HIV-risk behaviour (Donenberg & Pao, 2003, 2005). Fourthly, the environment in which HIV-negative adolescents reside in functions as a risk factor for adolescent HIV-risk behaviour; neighbourhood disadvantage (i.e., poverty or violence), ethnic or racial composition, exposure to community violence, and the experience of stressful life events contributes to the enactment of adolescent HIV-risk behaviour (Donenberg & Pao, 2003, 2005).

Vertically infected adolescents living with HIV

The VALHIV cohort have been infected with HIV before the development of their immune system, have been subject to suboptimal ART regimens, and are currently experiencing a transition from complete dependence on their caregivers to becoming their own caregivers (Goga et al., 2019; Haberer & Mellins, 2009; Jacqueline Hoare et al., 2014; Koenig et al., 2011; Sherr et al., 2014; Sohn & Hazra, 2013).VALHIV commonly experience growth deficits (weight gain and the stunted height) (Anderson et al., 2020) and present with distinctive neurological and cognitive profiles which differ in relation to that of the HALHIV cohort (Anderson et al., 2020; Haberer & Mellins, 2009; Hoare et al., 2014; Lee et al., 2011; Lee & Oberdorfer, 2009; Sohn & Hazra, 2013). The cognitive domains – which include expressive and receptive language, memory, information processing, visual-spatial competencies, executive functioning and decision-making capabilities – of VALHIIV are frequently affected by the impact of HIV on their central nervous system and ART-related neurological side-effects (Haberer & Mellins, 2009; Hoare et al., 2014; Sherr et al., 2014). Impaired neurological profiles of VALHIV appears to have a profound impact on their general psychosocial functioning (Goga et al., 2019; Meinck et al., 2019; Sherr et al., 2014).

Mental health complications amongst the VALHIV cohort are commonly associated with their experience of orphanhood (Close, 2010; Cluver, Orkin, Garder, et al., 2012; Marfatia & Naswa, 2010; Sherr et al., 2014). Due to the nature of HIV acquisition in VALHIV and the lack of available ART, many parents' of VALHIV have succumbed to AIDS (Bhana et al., 2016; Lentoor et al., 2016; Marfatia & Naswa, 2010). The AIDS-related death of a parent is foremost associated with the experience of multiple deprivations (Close, 2010; Sherr et al., 2014; Van Vilsteren et al., 2011). Specifically, the loss of a parent results in orphaned youth being unable to physically access medical care, which directly impacts the clinical outcomes of VALHIV (Close, 2010; Nabunya & Ssewamala, 2014). Moreover, the loss of a parent predisposes orphaned-youth to psychopathology, bereavement concerns, and often results in economic hardships which negatively affects VALHIV in both the short and long term (Close, 2010; Cluver, Orkin, Garder, et al., 2012; Marfatia & Naswa, 2010; Nabunya & Ssewamala, 2014; Van Vilsteren et al., 2011).

In low-income localities, many orphaned youth either reside with relatives of the deceased parent, are institutionalized, or function as child-headed households; such experiences predispose orphaned youth LHIV to sub-optimal psychosocial outcomes (Close, 2010; Sherr et al., 2014; Van Vilsteren et al., 2011). It is noted that orphaned youth who reside in child-headed households are vulnerable to sex work, juvenile delinquency, substance use, poor educational performance, and mental health complications (Marfatia & Naswa, 2010; Sherr et al., 2014).

Psychosocial factors experienced by adolescents living with HIV

Despite the aforementioned psychosocial vulnerabilities that have differential effects on both VALHIV and HALHIV cohorts, altogether, ALHIV are a population susceptible to a plethora of psychosocial distress (Close, 2010; Marfatia & Naswa, 2010; National Department of Health, 2018). Specifically, the psychosocial functioning of ALHIV is affected by their: (1) knowledge of HIV and sexual activity; (2) experience of stigma; (3) response to ART; (4) mental health; (5) transition from pediatric to adult-oriented healthcare; and (6) availability of social support.

Knowledge of HIV and adolescent sexual activity

ALHIV require knowledge of their HIV status and sustained psychosocial support in order to promote the acceptance and understanding of the implications associated with LHIV (Close, 2010; Jaspan et al., 2009; Marfatia & Naswa, 2010). Moreover, ALHIV are vulnerable to narratives of masculinity which affect HIV acquisition and transmission (Gibbs & Jobson, 2011). Narratives of masculinity are often gendered and encourage poor sexual negotiation skills among females whilst concurrently increasing the incidence of risky sexual and violence-related behaviour amongst males (Fatusi & Hindin, 2010). Consequently, narratives of masculinity have contributed to the early debut of sexual activity amongst ALHIV and have increased the incidence of HIV acquisition and the contraction of other sexually transmitted infections amongst this cohort (Fatusi & Hindin, 2010; Gibbs & Jobson, 2011).

Stigma

The experience of stigma has a pervasive impact on the psychosocial functioning of ALHIV (Close, 2010; Jaspan et al., 2009; Kruger et al., 2018; Whetten et al., 2008; Williams et al., 2018). Stigma is a complex social phenomenon and is defined as a negatively valenced internalized attitude that diminishes an individual's social status (Whetten et al., 2008). Stigma can manifest as received stigma, internal stigma, and associated stigma (Jaspan et al., 2009; Kruger et al., 2018). Received stigma encompasses condescending behaviour directed towards ALHIV; internal stigma relates to the intrapersonal thoughts and behaviours developed by ALHIV due to their negative self-perceptions and perceived social status; and associated stigma relates to the negatively valenced behaviours directed towards individuals who associate themselves with ALHIV (Kruger et al., 2018).

The occurrence of stigma is particularly prevalent within disadvantaged localities and results in the experience of disapproval, rejection, and sub-optimal services in healthcare settings (Corrigan et al., 2014; Knaak et al., 2017; Kruger et al., 2018; Meyer et al., 2018). HIV-associated stigma promotes the marginalization and discrimination of ALHIV based on HIV status; likewise, HIV-associated stigma impedes HIV status disclosure, safe sexual activity, HIV treatment outcomes, and mental health outcomes amongst ALHIV (Close, 2010; Kruger et al., 2018; Kunguma et al., 2018; Whetten et al., 2008; Williams et al., 2018).

Response to antiretroviral treatment

Adapting to life with a chronic disease necessitates the need to effectively manage medication regimes (Close, 2010; Jaspan et al., 2009; Van Wyk & Davids, 2019). ALHIV are required to adhere to HIV treatment regimens to achieve sustained viral suppression and long-term immunologic recovery (Evans et al., 2013; Haberer & Mellins, 2009; Toth et al., 2018). Adherence to HIV treatment incorporates: (1) the adherence to pharmacological regimens, (2) follow-up admission, (3) referrals to healthcare services, and (4) following healthcare recommendations (mandated by mental health service providers) intended to promote an increased QoL (World Health Organization, 2003). However, ALHIV are at risk of non-adherence associated with treatment fatigue (premised on complex twice-daily doses), neurotoxicity resulting from the impact of HIV on one's compromised central nervous system and immune system (Chuah et al., 2017; Southern African HIV Clinicians Society, 2013, 2014; Thom, 2009), primary psychiatric disorders which stem from underlying genetic loading or experience of early childhood trauma (Chuah et al., 2017; Southern African HIV Clinicians Society, 2013, 2014; Thom, 2009), psychological reactions that result from an HIV positive diagnosis (Bekker, 2009; Colins et al., 2006; Myer et al., 2008; Thom, 2009), and the development of drug-resistant HIV strains (Chuah et al., 2017; Moosa & Jeenah, 2012b; Thom, 2009; Williams et al., 2018).

Impact of mental health

The relationship between HIV and MNS disorders are of a bi-directional nature: HIV and associated opportunistic infections have been recognized to result in neurological impairment (Donald et al., 2011; Goga et al., 2019; Hoare et al., 2014). Mental health complications have been identified as salient consequences of ART-related side effects, stigma, and other psychosocial stressors associated with LHIV (Close, 2010; Jaspan et al., 2009; Nassen et al., 2014; National Department of Health, 2018; Whetten et al., 2008). Similarly, MNS disorders are risk factors that increase the incidence of HIV-risk behaviour (Close, 2010; Donald et al., 2011; Donenberg & Pao, 2005; Marfatia & Naswa, 2010).

People who suffer from MNS disorders often have comorbid acute or other chronic health conditions which impede treatment outcomes amongst MNS populations (Gervaix et al., 2018; Schneider et al., 2016; Ventevogel, 2014). A high prevalence of comorbid MNS disorders have been documented amongst ALHIV populations; the most prevalent MNS disorder is that of depressive disorders (Ashaba et al., 2019; Kemigisha et al., 2019; Kim et al., 2015; Lwidiko et al., 2018; Whetten et al., 2008). Depression in ALHIV may stem from early life experiences with caregivers who suffer from depression or other comorbid mental health complications (Fawzi et al., 2010; Pachter et al., 2006). Specifically, ALHIV who reside with a depressed parent are at an increased risk of mental health complications originating from suboptimal infant-caregiver interactions (Lentoor et al., 2016; Reupert et al., 2013). The impact of depression has been identified to impede the quality of the relationship between adults LHIV and their children (Lentoor et al., 2016; Teo et al., 2013).

Transition of care

Adolescence is a period in which ALHIV experience a number of psychosocially taxing transitions that directly impact their HIV treatment outcomes (Close, 2010; Jaspan et al., 2009; Sherr et al., 2018; Toth et al., 2018). The two most predominant psychosocial challenges affecting ALHIV pertains to their psychosocial transitions during adolescence and their transition from pediatric to adult-oriented healthcare (Close, 2010; Goga et al., 2019; Hussen et al., 2014; Koenig et al., 2011; Marfatia & Naswa, 2010; Sherr et al., 2018).

Prominent within adolescence is the transition of ALHIV from complete dependence on their caregivers to becoming responsible for their own healthcare (Haberer & Mellins, 2009; Koenig et al., 2011; Lam et al., 2007). The transition of ALHIV into adulthood necessitates the shift towards medical independence with the increased desire for autonomy within the family context (Close, 2010; Koenig et al., 2011). Despite the desire for autonomy, ALHIV require support to facilitate their sustained medical adherence (Close, 2010; Davies & Hamlyn, 2018; Jaspan et al., 2009). In adult-oriented healthcare facilities, healthcare service involvement decreases in tandem with that of family support (Koenig et al., 2011; Marfatia & Naswa, 2010; Sherr et al., 2018). The decrease in healthcare service involvement increases pressure on ALHIV to adhere to HIV treatment measures; notably, ALHIV are not differentiated from their adult counterparts in adult-oriented healthcare facilities, which results in the provision of undifferentiated care by healthcare professionals (Anderson et al., 2020; Goga et al., 2019; Hussen et al., 2014; Sherr et al., 2018; Slogrove & Sohn, 2018).

Social support

As a growing cohort of ALHIV mature into late adolescence and early adulthood, the availability of appropriate psychosocial support services is essential to ensure optimal healthcare outcomes amongst ALHIV (Lam et al., 2007; National Department of Health, 2018). Specifically, psychosocial support is needed to facilitate the engagement in safe sexual activity, informed reproductive choices, and adherence to HIV treatment regimens (Close, 2010; Koenig et al., 2011; Toth et al., 2018).

Social support functions as a psychological buffer against distress and enhances one’s psychological well-being (Besthorn et al., 2018; Lam et al., 2007). Amongst ALHIV, social support is able to buffer against HIV-related psychological and physical distress whilst simultaneously increasing their sense of belonging (Besthorn et al., 2018; Close, 2010; Lam et al., 2007; Van Wyk & Davids, 2019). The experience of stigma amongst ALHIV often results in social isolation, which increases the incidence of depression and poor QoL outcomes (Jaspan et al., 2009; Williams et al., 2018)

Theoretical framework

The fundamental principle underscoring the WHO's constitution is its definition of health. According to the WHO, health is characterized by one's mental, physical, and social well-being (World Health Organization, 2020). This notion of health is informed by public health principles and acknowledges the interdependent nature of both one's physical and mental health, which, in turn, affects one's QoL (World Health Organization, 2001). Implicit within the WHO's conceptualization of health is the consensus that ill-health is a consequence of biological, psychological, and social determinants (World Health Organization, 2001).

The public health model, rooted in a positivist paradigm, enables the delineation of health implications through the employment of a quantitative epistemological methodology (Winslow, 1920). The public health model has been applied to contextual circumstances within the health sector and has facilitated the delineation of health outcomes in relation to time, place, and individual characteristics (Committee on Community-Based Solutions to Promote Health Equity in the United States et al., 2017; Institute of Medicine, 2003). Notably, the public health model's reliance on quantitative epistemological methodologies has facilitated the identification of causal influences of varying health implications (Institute of Medicine, 2003; Kaur, 2016). Despite the public health model's positivist origins, the rise of social epidemiology has encouraged the adoption of qualitative, or non-positivist, methodologies that have enabled the comprehension of social phenomena (Inhorn & Whittle, 2001; Palinkas, 2014). Through the inclusion of quantitative and qualitative research methodologies, interdisciplinary mixed method public health research designs can ensure the holistic comprehension of phenomena from both a top-down and bottom-up healthcare approach (Kaur, 2016; Palinkas, 2014). Specifically, quantitative methodologies evaluate the prevalence of particular problems, whilst qualitative methodologies explore the complex social trends in which the prevalence of particular problems occur, as well as the lived experiences of affected populations informed by theoretical models such as patient-centred care, shared decision-making, and balancing the voice of medicine with the voice of the lifeworld (Germond & Cochrane, 2010; Kaur, 2016; Mishler, 1984; Palinkas, 2014).

South Africa's healthcare system, influenced by the WHO's integrative public health model, necessitates the servicing of psychosocial needs within primary healthcare facilities (World Health Organization, 2017b). However, the fragmented structural nature of South Africa's healthcare system contributes to the burden posed by multi-morbid chronic conditions which result from HIV and other non-communicable diseases (Myers et al., 2019; Petersen et al., 2019). Therefore, by orienting to a public health paradigm, this research report's systematic review method identifies and consequently discusses the psychosocial factors which affect ALHIV accessing HIV treatment services in South Africa.

Aims and objectives

This research aims to add to the body of knowledge which conceptualizes the impact of psychosocial factors on ALHIV accessing HIV treatment services in South Africa. The primary objective of this research report is to systematically review empirical South African research premised on ALHIV populations in order to identify, synthesize, understand, and discuss the psychosocial factors which affect ALHIV accessing HIV treatment services in the South African context.

Methodology

Research design

A convergent mixed-method systematic review research design (Higgins et al., 2019) using a narrative synthesis approach (Cochrane Consumers And Communication & Ryan, 2020) was used to inform the development of a PRISMA protocol (Moher et al., 2015) which guided this systematic review. Specifically, the systematic review enabled the identification, evaluation, and subsequent summarization of data obtained from published literature pertaining to the localized psychosocial factors affecting ALHIV accessing HIV treatment services in South Africa.

The PRISMA protocol specified the strategy with which this systematic review was conducted; it also safeguarded the application of appropriate methodological features that ensured consistent conduct, accountability, research integrity and transparency, as well as the minimization of arbitrary decision-making during data extraction and subsequent engagement with the data from primary research publications (Moher et al., 2015). It is noted that systematic reviews, informed by PRISMA, have been employed extensively within health-related research initiatives across the globe; adherence to PRISMA guidelines has resulted in the production of rigorous scientific evidence informing recommendations for health promotion, intervention design, policy development, and best practice approaches in the field of health sciences (MacMillan et al., 2018).

The utilization of a systematic review method involves the employment of explicit, rigorous, and accountable methods oriented towards the: (1) identification, selection, and description of previously published empirical evidence adhering to stringent pre-specified eligibility criteria, (2) critical appraisal of research designs used as well as the assessment of the reliability and validity of the associated results and conclusions, and (3) compilation of aggregated findings into a synthesis of research findings required to answer a predefined research question (Liberati et al., 2009; ten Ham-Baloyi & Jordan, 2016).

A concern relating to bias in the selective reporting of outcomes in systematic reviews has been characterized as a problem in clinical research (ten Ham-Baloyi & Jordan, 2016). The selective reporting of outcomes in clinical research is influenced by the nature and direction of the results and often includes (1) the incomplete publication of study analyses and a specific subset of outcomes, (2) inconsistencies in predefined measurement scales or time points for data collection, and (3) the re-ranking of outcomes previously defined as primary or secondary (Norris et al., 2014; Reid et al., 2015). Notably, the selective reporting of outcomes can affect the direction, magnitude, and precision of pooled effect estimates, as well as conclusions about the benefits and harms of the phenomena under investigation (Dwan et al., 2008; Norris et al., 2014). In addition to this, a narrative synthesis approach to systematic reviews has been criticized as an approach which may lack transparency where there is a notable lack of clarity on methods and formal guidance on how to conduct such a synthesis (Snilstveit et al., 2012).

Despite the aforementioned concerns, adherence to the PRISMA guidelines supports the adoption of comprehensive search strategies, predefined search strings, and uniform inclusion and exclusion criteria necessary to facilitate the dissemination of reliable findings which minimize bias and maximize its contribution to science (Liberati et al., 2009; Selcuk, 2019; ten Ham-Baloyi & Jordan, 2016). Therefore, adherence to the PRISMA guidelines enables systematic reviews – through their interpretation, synthesis, and assessment of scientific publications authored by experienced researchers – to proficiently identify robust evidence-based research critical to the development of evidence-based clinical practices premised on clinical expertise and patient values (Liberati et al., 2009; Selcuk, 2019; ten Ham-Baloyi & Jordan, 2016).

Review procedure

The employment of a systematic analysis, in accordance with the 27-item checklist (see Appendix A) and four-phase flow diagram (see Figure 1), ensured full compliance with the checklist items and enabled the development of a clear, transparent, and structured report that has a: (1) specified research question, (2) clearly stated title and objectives, (3) comprehensive strategy guiding the identification of relevant empirical publications, (4) distinct and justifiable inclusion and exclusion criteria, (5) rigorous synthesis of the reviewed empirical publications, and (6) methodological analysis of the eligible empirical publications. In addition to the development of a PRISMA informed research report, this paper adhered to the eight-stage procedure for conducting a systematic review recommended by Uman (2011) to increase transparency and limit bias which, in turn, improves the validity of the reported findings.

Stage 1: Formulate the review question

This research report is geared towards employing a systematic review in order to identify, describe, and critically appraise published literature in a bid to answer the following research question:

1. What psychosocial factors affect ALHIV accessing HIV treatment services in South Africa?

Stage 2: Define the inclusion and exclusion criteria

In order for published literature to be included in the sample, a purposive sampling technique informed by SPIDER (Cooke et al., 2012) was employed. SPIDER, a search strategy tool adapted from the (quantitative) PICO tool, enables researchers to define the sample (S), phenomenon of interest (PI), design (D), evaluation (E), and research type (R) required to formulate a systematic search strategy to answer the qualitative or mixed-method research question informing the systematic review (Cooke et al., 2012; Methley et al., 2014).

Full-text empirical articles were included in the sample on the following basis: (1) the identified studies included HIV-positive adolescents (≥ 10 years old and ≤ 19 years old) residing in South Africa; (2) the phenomena under investigation within the identified studies related to psychosocial factors which affect ALHIV accessing HIV treatment services in South Africa; (3) measures exploring any form of psychosocial factors associated with ALHIV in South Africa had to be utilized; (4) study research designs were either an observational or cohort study; and (5) studies were of a quantitative and/or qualitative nature. It is noted that articles with both positive and negative outcomes were included to reduce the occurrence of publication bias. Moreover, articles that were written in English and were published between 1 January 2000 and 31 July 2020 were included in the sample – in order to capture the most relevant developments within the field.

Articles that did not align with the aforementioned purposive sampling inclusion criteria were excluded. The exclusion of non-empirical articles (i.e., review articles, methodological articles, theoretical articles, editorial articles and case studies) was premised on their lack of explicit aims, hypotheses, and results or discussion sections. Without such information, one cannot obtain a sense of clarity in relation to the specific constructs or variables being assessed within the sample of articles. Similarly, grey literature was excluded on the basis of not being peer-reviewed as peer-reviewed research is characteristically considered more rigorous (Laher & Hasseem, in press).

Stage 3: Develop the search strategy and locate studies

Search terms that guided the identification of relevant articles in the sample were chosen in line with the aforementioned literature review. In addition, a senior librarian and the supervisor of this research report were consulted in order to critically appraise the proposed search terms.

The following search terms were used in combination to identify potentially relevant empirical articles that were included in the sample: “HIV”, “AIDS”, “South Afri*”, “teen*”, “adoles*”, “youth*”, “young”, “psych*”, “vulner*”, suscep*”, and “risk*”.

It is noted that the search terms were combined through the use of Boolean operators (i.e., ‘OR’, ‘AND’); the wild card (i.e., ‘*’) was used to increase both the specificity (i.e., the ability to identify relevant papers) and sensitivity (i.e., the ability to not identify many irrelevant papers), as per guidelines from Boland et al. (2017).

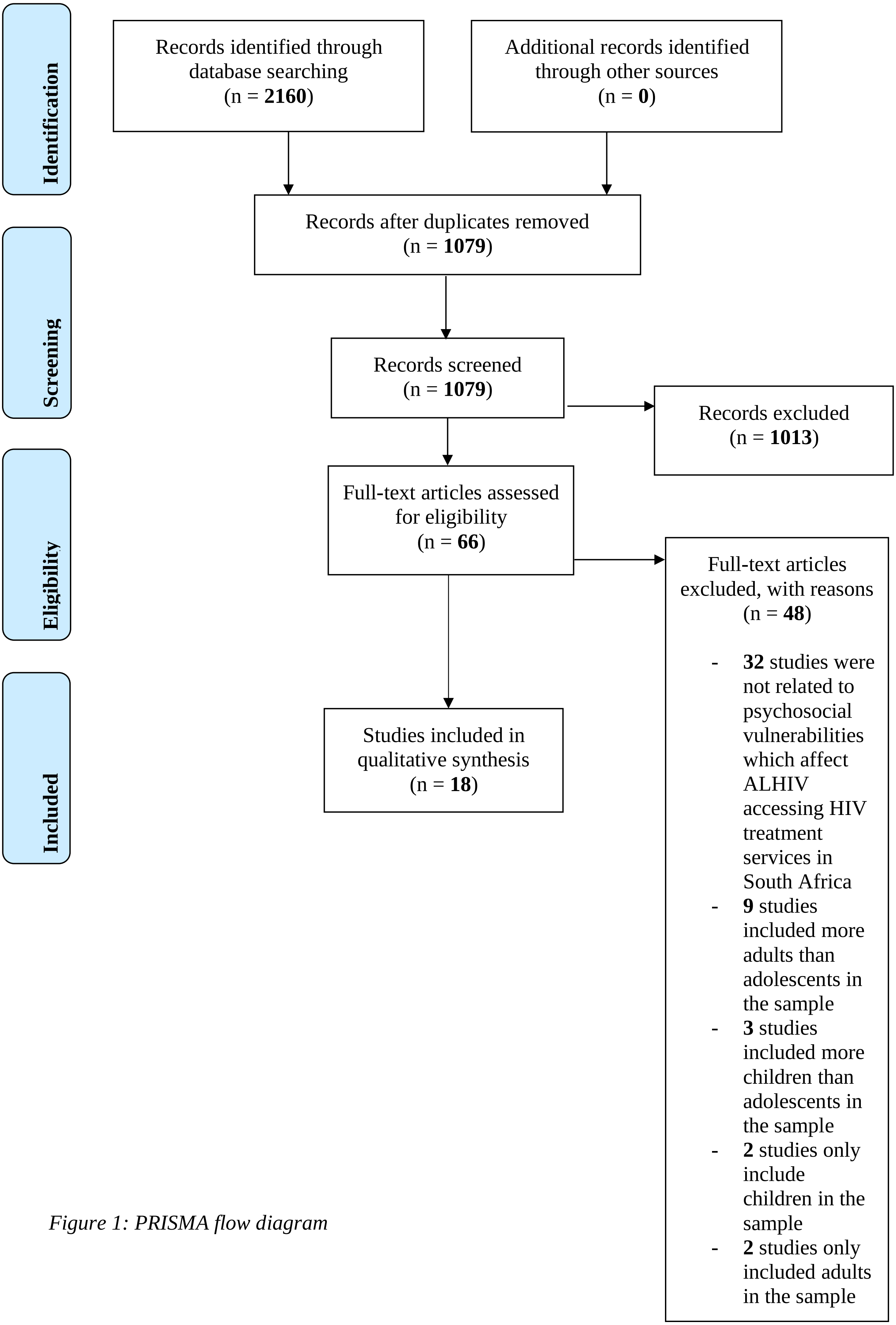
Research articles were accessed and searched for via electronic research databases of the University of the Witwatersrand on 1 August 2020. Three multidisciplinary databases (i.e., ProQuest, Web of Science, EBSCO) and one South African database (i.e., Sabinet Online) were used to enhance the identification of studies that adhered to the aforementioned inclusion criteria.

Database	**Reason for Selection**
ProQuest	As a result of the purposive inclusion criteria (SPIDER) used above, ProQuest is a relevant database as it enables access to a global multidisciplinary body of literature that encompasses the field of humanities as well as health sciences.
Web of Science	As a result of the purposive inclusion criteria (SPIDER) used above, Web of Science is an appropriate database as it enables access to a global multidisciplinary body of literature that encompasses the field of humanities as well as health sciences.
EBSCO	As a result of the purposive inclusion criteria (SPIDER) used above, EBSCO is a suitable database as it enables access to a global multidisciplinary body of literature that encompasses the field of humanities as well as health sciences.
Sabinet Online	As a result of the purposive inclusion criteria (SPIDER) used above, Sabinet Online enables access to a multidisciplinary body of South African literature that encompasses the field of humanities as well as health sciences.

Table 1: Databases used and reasons for selection

Stage 4: Select the appropriate studies

First, the titles and abstracts from the identified studies (after duplicates removed, *n* = 1079) were screened by a primary reviewer (i.e., the author of this research report) to assess their eligibility. Studies that were incompatible with the aforementioned inclusion criteria and studies that adhered to the exclusion criteria (*n* = 1013) were excluded from the sample. Second, the titles, abstracts and full texts of the remaining articles (*n* = 66) were examined to ensure their eligibility for inclusion into the provisional sample. After the full texts of the remaining articles were assessed against the aforementioned inclusion criteria, only a select few were included in the final sample (*n* = 18); a PRISMA flow diagram (see Figure 1) illustrates the screening process.



- **32** studies were not related to psychosocial vulnerabilities which affect ALHIV accessing HIV treatment services in South Africa
- **9** studies included more adults than adolescents in the sample
- **3** studies included more children than adolescents in the sample
- **2** studies only include children in the sample
- **2** studies only included adults in the sample

Figure 1: PRISMA flow diagram

Stage 5: Extract the appropriate data

In relation to each study included in the sample, relevant data providing an overview of the study's characteristics (including year of publication, study design, sample size, sample age range, sample gender, the setting from where the sample was drawn, and CASP score was extracted (Cochrane Consumers And Communication La Trobe University et al., 2018; Conway et al., 2017). Moreover, information pertaining to the psychosocial constructs under investigation and the measures used to explore such psychosocial constructs were also obtained (Cooke et al., 2012; Methley et al., 2014). It is noted that each study within the sample was downloaded into a reference manager (i.e., Zotero), which enabled their assessment by critical appraisal tools (see below) and data analytic techniques (see below).

Stage 6: Assess the quality of the appropriate studies

Articles in the final sample (*n* = 18) were assessed for potential bias. The quality of quantitative studies was assessed through their reliability, validity, and objectivity, whilst qualitative studies were assessed through their credibility, transferability, dependability, and confirmability. There were no mixed-method studies within the final sample, thus no critical appraisal was required. Eligible quantitative studies (*n* = 16) were assessed via the adapted version of the Critical Appraisal Skills Programme (CASP) Qualitative Checklist Tool (Laher & Hasseem, in press) (see Appendix B) and eligible qualitative studies (*n* = 2) were assessed via the Critical Appraisal Skills Programme (CASP) Qualitative Checklist Tool (Laher & Hasseem, in press) (see Appendix C).

Table 2 summarizes the results of the quality assessment and how the included articles performed on the CASP tools. All of the 18 included studies were of a high-quality nature. Moreover, the risk of bias within the included studies was deemed to be minimal as all studies scored highly on the CASP tools. Amongst the two qualitative articles, both articles scored 10/10 on the qualitative CASP tool. Among the 16 quantitative articles, three articles scored 9/11, whilst the rest of the articles scored between 10/11 and 11/11 on the quantitative CASP tool.

Article	1. Aims	2. Method	3. Research Design	4. Recruitment Strategy	5. Data Collection	6. Researcher Role	7. Ethical Issues	8. Data Analysis	9. Rigorous Data Analysis	10. Psychometric Properties	11. Findings	12. Value	Total
(Boyes et al., 2018)	Y	Y	N	Y	Y	N/A	Y	Y	Y	Y	Y	Y	10
(Brittain et al., 2019)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
(Cluver, Meinck, et al., 2018)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
(Cluver, Pantelic, et al., 2018)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
(Cluver et al., 2019)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
(Coetzee et al., 2019)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11

(Crowley et al., 2020)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
(Hoare et al., 2019)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	N	Y	Y	10
(Kagee et al., 2019)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
(Louw et al., 2016)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	N	Y	Y	10
(Kidman et al., 2018)	Y	Y	N	Y	Y	N/A	Y	Y	Y	N	Y	Y	9
(Kidman & Violari, 2018)	Y	Y	N	Y	Y	N/A	Y	Y	Y	N	Y	Y	9
(Mavangira & Raniga, 2015)	Y	Y	Y	Y	Y	Y	Y	N/A	Y	N/A	Y	Y	10

(Pantelic et al., 2017)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
(Pantelic et al., 2020)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
(Toska et al. 2016)	Y	Y	N	Y	Y	N/A	Y	Y	Y	N	Y	Y	9
(van Wyk & Davids, 2019)	Y	Y	Y	Y	Y	Y	Y	N/A	Y	N/A	Y	Y	10
(Woollett et al., 2017)	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11

Table 2: Quality Assessment of the included articles; Y = Yes; N = No; N/A = Not applicable

Stage 7: Analyze and interpret the appropriate results

For the purpose of this research report, a thematic synthesis approach was adopted because the data within the included articles were too heterogenous to do a quantitative meta-analysis. In addition, the type of data included in the articles lent itself more towards a thematic synthesis of major themes.

Thematic synthesis

The employment of a thematic synthesis, as a data analytic technique, has ascended within the realm of healthcare-related systematic reviews; specifically, a thematic can facilitate the development of effective and appropriate evidence-based healthcare guidelines (Bearman & Dawson, 2013; Thomas & Harden, 2008).

In relation to this research report, a thematic synthesis method developed by Thomas and Harden (2008) was used to analyze the qualitative studies. As per Thomas and Harden's guidelines (2008), the thematic synthesis was conducted through three stages which include: "the coding of text line-by-line…, the development of descriptive themes…, and the generation of analytic themes…" (p. 1). Notably, the development of descriptive themes and analytic themes within the thematic synthesis were informed by the findings of reflexive thematic analysis as developed by Braun et al. (2019).

First, the researcher familiarized himself with the data through reading and rereading the textual data (Braun et al., 2019). Second, codes were generated through an inductive orientation. Third, candidate themes were developed through the collation of codes from the dataset (Braun et al., 2019). Fourth, candidate themes were thematically mapped in order to visually establish potential themes and their associated subthemes (Braun et al., 2019). Fifth, candidate themes were revised and defined to ensure that themes and theme names clearly, comprehensively, and concisely represented the data (Braun et al., 2019). Sixth, the researcher critically appraised candidate themes in order to establish consistency throughout the analysis; thereafter, a report containing the findings was produced in a concise, non-repetitive and coherent manner (Braun et al., 2019).

Stage 8: Disseminate the findings

A critical synthesis was carried out on the subsequent findings that emerged after the aforementioned data analytic technique. Specifically, the strengths and weaknesses of the findings are discussed with reference to recommendations that can inform future research within the realm of psychosocial research premised on ALHIV in South Africa. In addition, this research report will be published (as part of a Master of Arts in Social and Psychological Research) on the University of the Witwatersrand's publicly accessible institutional repository

(WIReDSpace). Similarly, this research report was registered with PROSPERO and will be published on their website (https://www.crd.york.ac.uk/PROSPERO/display_record.php?RecordID=199470).

Reflexivity

Research is indivisible from the researcher's subjectivity. An individual's characteristics are noted to affect the conceptualization, formulation, analysis and findings of particular research inquiries (Finlay & Gough, 2003). Specifically, being a Coloured male, 23 years of age, conducting research in the post-Apartheid South African context, and the subscription to particular social and political values may have influenced decisions regarding the orientation and analysis of the results within this research report. However, self-awareness, transparency, and a sense of reflexivity in relation to ideological commitments were employed to ensure non-biased analyses and interpretations of findings that arose. In addition, potential bias in the interpretation and synthesis of the findings was minimized through the use of a reflective journal. Lastly, this research report was conducted in accord with a supervisor within the School of Human and Community Development of the University of the Witwatersrand in a bid to ensure legitimacy.

Trustworthiness and rigour

According to Lincon and Guba (1985), the pursuit of trustworthiness ought to be premised on the consideration of credibility, transferability, dependability, and confirmability.

Credibility refers to the congruency with which results from this research report are true, credible, and believable to that of reality (Forero et al., 2018). In relation to this research report, credibility was established through adherence to the guidelines sanctioned by PRISMA and Shenton (2004), and included: (1) the adoption of well-established research methods which have been successfully operationalized in various public health and psychosocial research initiatives; (2) triangulation of findings with the contemporary literature on which this research report has been informed; (3) highlighting and accounting for possible discrepancies which arose within the data; (4) peer scrutiny of the findings from this research report; and (5) the incorporation of the aforementioned reflexive commentary.

Transferability refers to the extent to which the results of this research report can be generalized or transferred to other contexts or localities (Forero et al., 2018). In relation to this research report, transferability was established through adherence to the guidelines sanctioned by PRISMA and Shenton (2004), and include: (1) the provision of the aforementioned contextual information pertaining to articles included within the data set; and (2) the presentation of detailed descriptions of the articles within the data set.

Dependability refers to the extent to which findings are repeatable should this inquiry be employed on the same cohort of participants, coders, and context (Forero et al., 2018). In relation to this research report, dependability was established through adherence to the guidelines sanctioned by PRISMA and Shenton (2004), and include: (1) the detailed description of the research design and its subsequent implementation; (2) the detailed description of how the data collection procedure was operationalized; and (3) the incorporation of the aforementioned reflective appraisal of this research report.

Confirmability refers to the extent to which the confidence of results could be confirmed or corroborated with other researchers (Forero et al., 2018). In relation to this research report, confirmability was established through adherence to the guidelines sanctioned by PRISMA and Shenton (2004), and include: (1) the incorporation of the aforementioned reflexive commentary; (2) efforts to ensure triangulation intended to mitigate the effect of investigator bias; and (3) the inclusion of the motivations for favouring the research report’s research design as well as highlighting the limitations of this research report as a whole.

Ethical considerations

This research report is that of a systematic review that used published empirical articles which are in the public domain. Thus, ethical clearance was not required as this research report did not involve data collection from human participants. However, an ethics waiver by the School of Human and Community Development Ethics Committee (MASPR/20/13W) was obtained for this study.

Results

Descriptive overview of the included studies

Table 3 provides a descriptive overview of the articles included in this systematic review.

Article	**Study design**	**Sample size**	**Sample age range**	**Sample gender**	**Setting**
(Boyes et al., 2019)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 1060	10-19 years old	Female and Male	53 facilities in the Eastern Cape providing adolescent antiretroviral therapy
(Brittain et al., 2019)	Quantitative, exploratory, cross-sectional, descriptive, correlational, cohort	*n* = 616	9-14 years old	Female	Seven facilities in the Western Cape providing adolescent antiretroviral therapy
(Cluver, Meinck, et al., 2018)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 1060	10-19 years old	Female and Male	53 facilities in the Eastern Cape providing adolescent antiretroviral therapy
(Cluver, Pantelic, et al., 2018)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 1060	10-19 years old	Female and Male	53 facilities in the Eastern Cape providing adolescent antiretroviral therapy

(Cluver et al., 2019)	Quantitative, exploratory, longitudinal, descriptive, correlational	*n* = 1063	10-19 years old	Female and Male	52 facilities in the Eastern Cape providing adolescent antiretroviral therapy
(Coetzee et al., 2019)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 134	11-18 years old	Female and Male	Facilities in the Western Cape providing adolescent antiretroviral therapy
(Crowley et al., 2020)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 385	13-18 years old	Female and Male	11 facilities in the Western Cape providing adolescent antiretroviral therapy
(Hoare et al., 2019)	Quantitative, exploratory, longitudinal, descriptive, correlational, cohort	*n* = 232	9-11 years old	Female and Male	Facilities in the Western Cape providing adolescent antiretroviral therapy
(Kagee et al., 2019)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 134	11-18 years old	Female and Male	Facilities in the Western Cape providing adolescent antiretroviral therapy
(Louw et al., 2016)	Quantitative, exploratory, cross-sectional,	*n* = 108	6-16 years old	Female and Male	Facilities in the Western Cape providing adolescent antiretroviral therapy

	descriptive, correlational				
(Kidman et al., 2018)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 250	13-24 years old	Female and Male	Paediatric facility in Gauteng providing adolescent antiretroviral therapy
(Kidman & Violari, 2018)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 129	13-24 years old	Female	Paediatric facility in Gauteng providing adolescent antiretroviral therapy
(Mavangira & Raniga, 2015b)	Qualitative, exploratory, cross-sectional, descriptive, interpretive	*n* = 8	14-17 years old	Female and Male	Child and youth care center in Gauteng
(Pantelic et al., 2017)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 1060	10-19 years old	Female and Male	53 public health facilities in the Eastern Cape providing adolescent antiretroviral therapy
(Pantelic et al., 2020)	Quantitative, exploratory, longitudinal, descriptive, correlational	*n* = 1059	10-19 years old	Female and Male	53 public health facilities in the Eastern Cape providing adolescent antiretroviral therapy

(Toska et al., 2017)	Exploratory, cross-sectional, descriptive, correlational	*n* = 1060	10-19 years old	Female and Male	53 public health facilities in the Eastern Cape providing adolescent antiretroviral therapy
(Van Wyk & Davids, 2019)	Qualitative, exploratory, cross-sectional	*n* = 15	10-19 years old	Female and Male	5 pediatric facilities in the Western Cape providing adolescent antiretroviral therapy
(Woollett et al., 2017)	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 343	13-19 years old	Female and Male	Primary healthcare clinic in Gauteng providing adolescent antiretroviral therapy

Table 3: Descriptive overview of the included articles

All studies included in this systematic review were published between 2015 and 2020; none of the selected articles were published prior to 2015. Of the 18 studies included in this systematic review, two were qualitative (Mavangira & Raniga, 2015; Van Wyk & Davids, 2019) and 16 were quantitative (Boyes et al., 2019; Brittain et al., 2019; Cluver, Pantelic, et al., 2018; Cluver, Meinck, et al., 2018; Cluver et al., 2019; Coetzee et al., 2019; Crowley et al., 2020; Hoare et al., 2019; Kagee et al., 2019; Kidman et al., 2018; Kidman & Violari, 2018; Louw et al., 2016; Pantelic et al., 2017, 2020; Toska et al., 2017; Woollett et al., 2017) in nature. Among the two qualitative studies, Mavangira and Raniga (2015) made use of an exploratory, cross-sectional, descriptive, interpretive research design whilst Van Wyk and Davids (2019) made use of an exploratory cross-sectional research design. Of the quantitative studies, Cluver et al. (2019), Hoare et al. (2019), and Pantelic et al. (2020) made use of longitudinal, exploratory, descriptive, and correlational research designs, whilst Boyes et al. (2019), Cluver, Meinck et al., (2018), Cluver, Pantelic (2018), Coetzee et al. (2019), Crowley et al. (2020), Kagee et al. (2019), Kidman et al. (2018), Kidman & Violari (2018), Louw et al. (2016), Pantelic et al. (2017), Toska et al. (2017), and Woollett et al. (2017) made use of cross-sectional, exploratory, descriptive, and correlational research designs. It is noted that Brittain et al. (2019) and Hoare et al. (2019) made use of two cohorts which were comprised of HIV-positive and HIV-negative individuals.

The sample sizes of the included qualitative studies ranged from eight (Mavangira & Raniga, 2015) to 15 (Van Wyk & Davids, 2019), whereas the sample sizes of the included quantitative studies ranged from 108 (Louw et al., 2016) to 1063 (Cluver et al., 2019).

In the majority of studies, participants were either entering adolescence or were in the adolescent period at the time of the study. Despite this, three studies included children who were older than six years of age (Brittain et al., 2019; Hoare et al., 2019; Louw et al., 2016), whilst two studies included individuals who were older than 19 but younger than 24 years of age (Kidman et al., 2018; Kidman & Violari, 2018). The studies which included children or adults, in addition to adolescents, were included in this systematic review as the majority of their samples included adolescents.

Most participants across the studies were female – with the exception of the study conducted by Brittain et al. (2018). It is noted that Kidman and Violari (2018) only included female participants in their study.

The included studies were conducted in three provinces of South Africa: seven were conducted in the Western Cape (Brittain et al., 2019; Coetzee et al., 2019; Crowley et al., 2020; Hoare et al., 2019; Kagee et al., 2019; Louw et al., 2016; Van Wyk & Davids, 2019), seven were conducted in the Eastern Cape (Boyes et al., 2019; Cluver et al., 2019; Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Pantelic et al., 2017, 2020; Toska et al., 2017), and four were conducted in Gauteng (Kidman et al., 2018; Kidman & Violari, 2018; Mavangira & Raniga, 2015; Woollett et al., 2017). It is noted that all the studies, except for the study by Mavangira & Raniga (2015) which included a sample recruited from a child and youth care center, included samples located in healthcare facilities providing ART. Additionally, it is noted that the samples recruited in the studies were representative of a particular target population (i.e., South African ALHIV accessing HIV treatment services in South Africa).

Synopsis of the aims informing the included articles

All quantitative and qualitative studies included in this systematic review had dissimilar foci. Boyes et al. (2019) investigated whether correlates operating across a variety of contexts were associated with multiple mental health outcomes in a large and representative sample of South African adolescents living with HIV. Brittain et al. (2019) investigated the behavioural health risks among perinatally-infected and same-age HIV-uninfected adolescents in South Africa and examined the associations between behavioural health risks and each of adolescent self-report and caregiver report of adolescent ART adherence and elevated HIV viral load. Cluver, Meinck et al. (2018) examined whether different types of violence were associated with non-adherence and identified whether there were interactive or additive effects of multiple victimizations on adolescent antiretroviral non-adherence. Cluver, Pantelic, et al. (2018) examined whether and how individual-level access to sustainable development goal (SDG) aligned provisions affected potential mortality risk (operationalized as viral failure or symptomatic, untreated TB). Cluver et al. (2019) tested the model of development accelerators within the social and economic domains of sustainable development and examined the model of accelerator synergies by which accelerators provide more substantial effects through their multiple associations with particular SDG-aligned targets and across a broad range of SDG targets. Coetzee et al. (2019) explored the correlates and predictors of fatigue among HIV-infected adolescents. Crowley et al. (2020) described the associations between adolescent HIV self-management and treatment adherence, viral suppression, sexual risk behaviour and health-related quality of life. Hoare et al. (2019) investigated a wide range of mental health measures and functioning in perinatally infected adolescents, including the effect of orphanhood on mental health measures and the associations between demographic life stressors, HIV related stigma, treatment and clinical data with mental health measures. Kagee et al. (2019) examined the relationship between fatigue, sleep disturbance, depression, anxiety, pain and quality of life among adolescents receiving ART. Louw et al. (2016) examined the emotional and behavioural problems in a group of perinatally infected adolescents in South Africa compared with a group of demographically matched HIV-negative controls, and the demographic, biological, cognitive, and contextual correlates of emotional and behavioural problems in perinatally infected adolescents. Kidman et al. (2018) examined the prevalence of adverse childhood experiences among perinatally HIV-infected adolescents and youth in a HIV endemic context and explored whether cumulative adverse childhood experiences were associated with high-risk sexual behaviours, psychosocial health and viral load suppression. Kidman and Violari (2018) examined the prevalence, predictors and health impact of interpersonal violence among a sample of perinatally HIV-infected youth. Pantelic et al. (2017) tested a theoretical model of associations between HIV-related disability, hypothesized social (violence victimization and enacted HIV stigma) and psychological (anticipated HIV stigma and depression) risk factors and internalized HIV stigma. Pantelic et al. (2020) examined whether discrimination in the healthcare setting, discrimination due to adolescent HIV status, and discrimination due to family member HIV status were associated with retention in care (RIC) among adolescents living with HIV and tested whether internalized stigma mediated this relationship. Toska et al. (2017) investigated whether different types of social protection provisions (i.e., cash/'cash-in-kind' or 'care') were associated with lower rates of unprotected sex. Woollett et al. (2017) investigated the common mental health problems (i.e., depression, anxiety, PTSD, suicidality) evident in perinatally infected adolescents retained in care. Of the qualitative studies, Mavangira and Raniga (2015) investigated the psychosocial experiences and coping strategies of perinatally HIV-infected adolescents residing in two child and youth care centres. Lastly, Van Wyk and Davids (2019) explored the challenges of living with HIV and adhering to ART amongst school-going adolescents.

Article	**Psychosocial constructs investigated**	**Measures used**
(Boyes et al., 2019)	- Depression - Anxiety - Posttraumatic stress - Conduct problems - Knowledge of HIV status - Age at disclosure - HIV-related stigma - Negative clinic interactions - Access to clinic support group - Past year physical and emotional abuse - Lifetime contact sexual abuse - Bullying victimization - Social support - Parenting and parental monitoring/supervision - Parent-child communication - Orphanhood - Self-efficacy - Poverty	- Child Depression Inventory – Short Form - Revised Children's Manifest Anxiety Scale - Child PTSD Checklist - Strengths and Difficulties Questionnaire - Healthcare provider report and confirmation by caregiver report - Adolescents Living with HIV Stigma Scale - Items adapted from the PREPARE Trial - UNICEF Measures for National-Level Monitoring of Orphans and Other Vulnerable Children - Juvenile Violence Questionnaire - Social and Health Assessment Peer Victimization Scale - Medical Outcome Study Social Support Survey - Alabama Parenting Questionnaire – Short Form - Child-Parent Communication Apprehension Scale

	- Urban/rural household location	- General Self-Efficacy Scale - Self-report questions
(Brittain et al., 2019)	- ART adherence - Substance use/abuse - Sexual activity - Bullying others - Suicidality - Relationship to caregiver - Poverty - School progression - Access to school	- 'Teen Talk' Questionnaire - 6-panel urine toxicology screen - Self-report questions
(Cluver, Meinck, et al., 2018)	- ART non-adherence - Past-year physical abuse victimization by caregivers at home - Past-year verbal abuse victimization by caregivers at home - Past-week witnessing domestic violence between adults in the home - Contact sexual violence - Past-year physical violence from teachers in school - Past-year physical violence from peers - Past-year physical violence victimization in community settings	- Patient Medication Adherence Questionnaire - UNICEF Measures for National-Level Monitoring of Orphans and Other Vulnerable Children - Juvenile Victimization Questionnaire - Social and Health Assessment peer victimization scale - Child Exposure to Community Violence checklist - Self-report questions

	- Past-year witnessing of violence in community settings - Past-year verbal violence in the clinic - Orphanhood	
(Cluver, Pantelic, et al., 2018)	- Sustainable development goal (SDG) 1 and 2 (basic necessities, food security and social protection) - SDG3 (caregiver alive and healthy) - SDG 8 (household access to work) - SDG 16 (no child abuse victimization)	- UNICEF Measures for National-Level Monitoring of Orphans and Other Vulnerable Children - Self-report questions
(Cluver et al., 2019)	- Free school - Safe school - Free school meals - Cash transfer - Parenting support - HIV-support group - ART adherence in past week - Good mental health - No substance abuse - HIV care retention - School enrolment - School progression - No sexual abuse - No high-risk sex - No violence perpetration	- Patient Medication Adherence Questionnaire - Child Depression Inventory – Short Form - Revised Children’s Manifest Anxiety Scale - Child PTSD Checklist – Short Form - Child Behaviour Checklist - WHO Global School-based Health Survey - Adapted Census South Africa measures of school enrolment - Attention Scale of Strengths and Difficulties Questionnaire

	- No community violence - No emotional or physical abuse	- Juvenile Victimization Questionnaire - Adapted intimate partner violence items from HPTPN068 study - South African National Survey of HIV and Risk Behaviour - Adapted Child Behaviour Checklist - Child Exposure to Community Violence checklist - UNICEF Measures for National-Level Monitoring of Orphans and Other Vulnerable Children - Social and Health Assessment - Alabama Parenting Questionnaire - Self-report questions
(Coetzee et al., 2019)	- Fatigue - Insomnia - Depression - Anxiety	- Chalder Fatigue Scale - Athens Insomnia Scale - Revised Children's Anxiety and Depression Scale
(Crowley et al., 2020)	- Self-management - Sexual risk behaviours - Adherence - Health-related quality of life	- Adolescent HIV Self-Management measure - Youth Questionnaire for persons aged 15-24 years - Adult AIDS Clinical Trials Group Adherence questionnaire - KIDSCREEN-27
(Hoare et al., 2019)	- Caregiver depression - Family resources, support, and assets - Depression	- Centre for Epidemiological Studies-Depression Scale - Family Resources Scale - Family Support Scale

	- Anxiety - Disruptive behaviour - Self-concept - Motivation - ADHD - Internalizing and externalizing problems	- Beck Youth Depression Inventory - Beck Youth Anxiety Inventory - Beck Youth Disruptive Behaviour Inventory - Beck Youth Self-concept Inventory - Children’s Motivation Scale - Conner’s Parent’s Rating Scale - Child Behaviour Checklist
(Kagee et al., 2019)	- Quality of Life - Fatigue - Insomnia - Depression - Anxiety - Pain	- Paediatric QOL Inventory - Chalder Fatigue Scale - Athens Insomnia Scale - Revised Children’s Anxiety and Depression Scale
(Louw et al., 2016)	- Emotional and behavioural problems - Cognitive performance - Relationship to caregiver - Household crowding - Family resources - Caregiver social support - Caregiver depression	- Child Behaviour Checklist - Family Resources Scale - Family Support Scale - Centre for Epidemiological Studies-Depression Scale - Self-report questions
(Kidman et al., 2018)	- Adverse childhood experiences - Sexual behaviour - Depression - Substance use/abuse	- Adverse Childhood Experience – International Questionnaire - Beck Depression Inventory - CRAFFT Screening Questionnaire for alcohol and substance abuse - Self-report questions

(Kidman & Violari, 2018)	- Intimate partner violence - Childhood adversity - Sexual risk - HIV disclosure - Depression - Substance use/abuse - Adherence	- Adapted version of WHO Violence against Women Instrument - Adverse Childhood Experience – International Questionnaire - Measures from the South African Demographic and Health Survey - Beck Depression Inventory - CRAFFT Screening Questionnaire for alcohol and substance abuse - Self-report questions
(Mavangira & Raniga, 2015b)	- Psychosocial experiences - Coping strategies	- N/A
(Pantelic et al., 2017)	- HIV-stigma mechanisms - HIV-related disability - Physical abuse - Emotional abuse - Contact sexual abuse - Bullying victimization - Depressive symptoms	- Adolescents living with HIV stigma scale - The International Classification of Functioning, Disability and Health scale - UNICEF Measures for National-Level Monitoring of Orphans and Other Vulnerable Children - Juvenile Victimization Questionnaire - Social and Health Assessment Peer Victimization Scale - Child Depression Inventory – Short Form
(Pantelic et al., 2020)	- ART adherence - Discrimination due to HIV status	- Adolescents living with HIV stigma scale - Stigma-by-association scale

	- Discrimination due to family member HIV status - Discrimination in the healthcare setting - Discrimination multiplicity - Internalized stigma	- Self-report question
(Toska et al., 2017)	- Unprotected sex at last sexual intercourse - Adolescent pregnancy - Knowledge of own status - Social cash transfer - Past-week food security - Access to school - School feeding - Sufficient clothing - Positive parenting - Parental supervision/monitoring - Attending HIV support group - Adolescent sensitive care clinics	- Healthcare provider report and confirmation by caregiver report - An item from the South African Social Attitudes Survey - Alabama Parenting Questionnaire - Self-report questions
(Van Wyk & Davids, 2019)	- Barriers to ART adherence	- N/A
(Woollett et al., 2017)	- Depression - Anxiety - PTSD - Suicidal behaviour - Child abuse - Community violence	- Child Depression Inventory – Short Form - Revised Children’s Manifest Anxiety Scale - Child PTSD Checklist

	- Bullying - Sexual health risk - Future outlook	- MINI International Psychiatric Interview for children and adolescents suicide scale - South African National Food Consumption Survey - UNICEF scales for sub0Saharan Africa - Child exposure to community violence checklist - Peer victimization scale - National survey of HIV and risk behaviour amongst young South Africans - South African Demographic and health survey - Self-report questions

Table 4: Psychosocial constructs and quantitative measures under investigation; N/A = Not applicable

Psychosocial constructs under investigation

Varying psychosocial constructs were explored in the qualitative and quantitative studies under investigation. Table 4 provides an overview of the psychosocial constructs and quantitative measures used within the included articles. Within the qualitative articles, psychosocial constructs included knowledge and feelings towards their mother, dealing with secrecy and disclosure, social networks and ART adherence, interactions with health and social services (Mavangira & Raniga, 2015), and challenges as well as facilitators of adherence (Van Wyk & Davids, 2019). The psychosocial constructs under investigation within the quantitative articles included health-related quality of life (Crowley et al., 2020), quality of life (Kagee et al., 2019), ART adherence (Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Cluver et al., 2019; Crowley et al., 2020; Kidman & Violari, 2018; Pantelic et al., 2020), parenting and parental supervision/monitoring (Boyes et al., 2019; Cluver et al., 2019), parent-child communication (Boyes et al., 2019), knowledge of HIV status (Boyes et al., 2019; Toska et al., 2017), age at first disclosure (Boyes et al., 2019), disclosure of HIV status to others (Kidman

& Violari, 2018), adverse childhood experiences (Kidman et al., 2018; Kidman & Violari, 2018), bullying victimization (Boyes et al., 2019), violence victimization (i.e., physical, emotional, and sexual abuse) (Boyes et al., 2019; Cluver, Pantelic, et al., 2018; Cluver, Meinck, et al., 2018; Cluver et al., 2019; Kidman & Violari, 2018; Pantelic et al., 2017; Woollett et al., 2017), discrimination in the healthcare setting (Pantelic et al., 2020), negative clinic interactions (Boyes et al., 2019), HIV stigma (Boyes et al., 2019; Hoare et al., 2019; Pantelic et al., 2017, 2020), HIV-related disability (Pantelic et al., 2017), self-efficacy (Boyes et al., 2019), motivation (Hoare et al., 2019), self-concept (Hoare et al., 2019), cognitive performance (i.e., processing speed, attention, visual spatial ability, visual memory and executive functioning) (Louw et al., 2016), ADHD (Hoare et al., 2019), internalizing and externalizing behaviour (Hoare et al., 2019), emotional and behavioural problems (Kagee et al., 2019), anger (Hoare et al., 2019), disruptive behaviour (Hoare et al., 2019), conduct problems (Boyes et al., 2019), fatigue (Coetzee et al., 2019; Kagee et al., 2019), insomnia (Coetzee et al., 2019; Kagee et al., 2019), pain (Kagee et al., 2019), suicidality (Brittain et al., 2019; Woollett et al., 2017), anxiety (Boyes et al., 2019; Cluver et al., 2019; Coetzee et al., 2019; Hoare et al., 2019; Woollett et al., 2017), depression (Boyes et al., 2019; Cluver et al., 2019; Coetzee et al., 2019; Hoare et al., 2019; Kagee et al., 2019; Kidman et al., 2018; Kidman & Violari, 2018; Pantelic et al., 2017; Woollett et al., 2017), PTSD (Boyes et al., 2019; Cluver et al., 2019; Woollett et al., 2017), substance use/abuse (Brittain et al., 2019; Cluver et al., 2019; Kidman et al., 2018; Kidman & Violari, 2018), sexual activity (Brittain et al., 2019; Cluver et al., 2019; Crowley et al., 2020; Kidman et al., 2018; Kidman & Violari, 2018; Toska et al., 2017; Woollett et al., 2017), adolescent-sensitive care clinics (Toska et al., 2017), relationship to caregiver (Brittain et al., 2019; Crowley et al., 2020; Kidman et al., 2018; Kidman & Violari, 2018; Louw et al., 2016), caregiver depression (Hoare et al., 2019; Louw et al., 2016), caregiver social support (Hoare et al., 2019; Louw et al., 2016), caregiver access to resources (Hoare et al., 2019; Louw et al., 2016), poverty (Boyes et al., 2019; Brittain et al., 2019; Cluver et al., 2019; Cluver, Pantelic, et al., 2018; Kidman et al., 2018; Kidman & Violari, 2018; Pantelic et al., 2020; Woollett et al., 2017), household crowding (Louw et al., 2016), past-week food security (Toska et al., 2017), orphanhood status (Boyes et al., 2019; Cluver et al., 2019; Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Crowley et al., 2020; Hoare et al., 2019; Kidman et al., 2018; Kidman & Violari, 2018; Woollett et al., 2017), urban/rural household location (Boyes et al., 2019; Cluver et al., 2019; Cluver, Pantelic, et al., 2018; Pantelic et al., 2017, 2020; Toska et al., 2017), school progression (Brittain et al., 2019; Cluver et al., 2019; Crowley et al., 2020; Hoare et al., 2019), access to school (Brittain et al., 2019; Cluver et al., 2019; Toska et al., 2017; Woollett et al., 2017), access to school feeding schemes (Cluver et al., 2019; Toska et al., 2017), access to safe school(s) (Cluver et al., 2019), access to a clinic support group (Boyes et al., 2019; Cluver et al., 2019; Toska et al., 2017), access to a government cash transfer (Cluver et al., 2019; Cluver, Pantelic, et al., 2018; Toska et al., 2017), access to sufficient clothing (Toska et al., 2017), access to social support (Boyes et al., 2019), having a surviving and healthy caregiver (Cluver, Pantelic, et al., 2018), having at least one employed person in the household (Cluver, Pantelic, et al., 2018; Hoare et al., 2019), access to three meals a day (Cluver et al., 2019; Cluver, Pantelic, et al., 2018), and access to free school (Cluver, Pantelic, et al., 2018; Toska et al., 2017).

Quantitative measures under investigation

Varying psychosocial health screening tools were employed in conjunction with socio-demographic questionnaires and adolescent self-report measures. Within the quantitative articles, health-related quality of life was measured with the KIDSCREEN-27 scale (Crowley et al., 2020). QoL was measured with the Paediatric QoL Inventory – short form (Kagee et al., 2019). ART adherence was measured with the adherence questionnaire adapted from WHO tools (Kidman & Violari, 2018), the medication adherence questionnaire (Cluver, Pantelic, et al., 2018; Pantelic et al., 2020), the adolescent HIV Self-Management Questionnaire (Crowley et al., 2020), the adapted adult AIDS Clinical Trials Group adherence questionnaire (Crowley et al., 2020), and the patient medication adherence questionnaire (Cluver et al., 2019; Pantelic et al., 2020). Parenting and parental monitoring/supervision were measured with the Alabama Parenting Questionnaire – Short form (Boyes et al., 2019; Cluver et al., 2019). Parent-child communication was measured with the Child-Parent Communication Apprehension Scale (Boyes et al., 2019). Knowledge of HIV status was determined through healthcare provider report and confirmation by caregiver report (Boyes et al., 2019; Toska et al., 2017). Age at first disclosure was assessed through a self-report question (Boyes et al., 2019). Disclosure of HIV status to others was assessed through the HIV disclosure questionnaire (Kidman & Violari, 2018). Adverse childhood experiences were measured with the Adverse Childhood Experiences – International Questionnaire (Kidman et al., 2018; Kidman & Violari, 2018). Bullying victimization was measured with the Social and Health Assessment Peer Victimization Scale (Boyes et al., 2019). Violence victimization (i.e., physical, emotional, and sexual abuse) was measured with adapted intimate partner violence items (Cluver et al., 2019), the UNICEF Measures for National-level Monitoring of Orphans and Other Vulnerable Children (Boyes et al., 2019; Cluver et al., 2019; Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Pantelic et al., 2017; Woollett et al., 2017), the Juvenile Victimization Scale

(Cluver et al., 2019; Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Pantelic et al., 2017), the Juvenile Violence Questionnaire (Boyes et al., 2019), the Social and Health Assessment Peer Victimization Scale (Cluver, Meinck, et al., 2018; Pantelic et al., 2017), the adapted version of WHO Violence against Women Instrument (Kidman & Violari, 2018), and the child exposure to community violence checklist (Cluver et al., 2019; Woollett et al., 2017). Discrimination in the healthcare setting was measured with a self-report question (Pantelic et al., 2020). Negative clinic interactions were measured with items adapted from the PREPARE Trial (Boyes et al., 2019). HIV stigma was measured with the HIV-stigma scale for adolescents living with HIV (Boyes et al., 2019; Pantelic et al., 2017), the stigma-by-association scale (Pantelic et al., 2020), and a self-report question (Hoare et al., 2019). HIV-related disability was measured with the adapted version of The International Classification of Functioning, Disability and Health measure (Pantelic et al., 2017). Self-efficacy was measured with the General Self-Efficacy Scale (Boyes et al., 2019). Motivation was measured with Children's motivation scale (Hoare et al., 2019). Self-concept was measured with the Beck Youth Motivation Inventory (Hoare et al., 2019). Cognitive performance was measured with a battery of tests assessing neuropsychological domains, including processing speed, attention, visual spatial ability, visual memory and executive functioning (the specific battery of neuropsychological tests used was not stated) (Louw et al., 2016). ADHD was measured with the Conner's parent's rating scale (Hoare et al., 2019). Internalizing and externalizing behaviour was measured with the Child Behaviour Checklist (Hoare et al., 2019). Emotional and behavioural problems were measured with the Child Behaviour Checklist CBCL/6-18 version (Kagee et al., 2019). Anger was measured with the Beck Youth Anger Inventory (Hoare et al., 2019). Disruptive behaviour was measured with the Beck Youth Disruptive Behaviour Inventory (Hoare et al., 2019). Conduct problems were measured with the Strengths and Difficulties Questionnaire (Boyes et al., 2019). Fatigue was measured with the Chalder Fatigue Scale (Coetzee et al., 2019; Kagee et al., 2019). Insomnia was measured with the Athens Insomnia Scale (Coetzee et al., 2019; Kagee et al., 2019). Pain was measured with the Visual Analogue Pain Scale (Kagee et al., 2019). Suicidality was measured with the MINI International Psychiatric Interview for Children and Adolescents Suicide Scale (Woollett et al., 2017) and the Teen Talk questionnaire (Brittain et al., 2019). Anxiety was measured with the Revised Children's Manifest Anxiety Scale – Short Form (Boyes et al., 2019; Cluver et al., 2019; Coetzee et al., 2019; Woollett et al., 2017) and the Beck Youth Anxiety Inventory (Hoare et al., 2019). Depression was measured with the Beck Depression Inventory (Kidman et al., 2018; Kidman & Violari, 2018), Child Depression Inventory – Short Form (Boyes et al., 2019;

Cluver et al., 2019; Pantelic et al., 2017; Woollett et al., 2017), the Revised Children's Depression Scale (Coetzee 2019; Kagee et al., 2019), and the Beck Youth Depression Inventory (Hoare et al., 2019). PTSD was measured with the Child PTSD Checklist – Short Form (Boyes et al., 2019; Cluver et al., 2019; Woollett et al., 2017). Substance use/abuse was measured with the adolescent version of the CRAFFT Screening Questionnaire for alcohol and substance abuse (Kidman et al., 2018; Kidman & Violari, 2018), a 6–panel urine toxicology screen (Brittain et al., 2019), the Child Behaviour Checklist (Cluver et al., 2019; Hoare et al., 2019; Louw et al., 2016), and the WHO global school-based health survey (Cluver et al., 2019). Sexual activity was measured with the adapted 'Teen Talk' questionnaire (Brittain et al., 2019), the South African National Survey of HIV and Risk Behaviour (Cluver et al., 2019; Woollett et al., 2017), the Youth Questionnaire for persons aged 15-24 years (Crowley et al., 2020), measures from the South African Demographic and Health Survey (Kidman & Violari, 2018; Woollett et al., 2017), and self-report questions (Kidman et al., 2018; Toska et al., 2017). Access to adolescent-sensitive care clinics was measured with self-report questions (Toska et al., 2017). Relationship to caregiver was measured with a self-report question (Brittain et al., 2019; Crowley et al., 2020; Kidman et al., 2018; Kidman & Violari, 2018; Louw et al., 2016). Caregiver depression was measured with the Centre for Epidemiologic Studies-Depression Scale (Hoare et al., 2019; Louw et al., 2016). Caregiver social support was measured with the Family Support Scale (Hoare et al., 2019; Louw et al., 2016). Caregiver access to resources was measured with the Family Resources Scale (Hoare et al., 2019; Louw et al., 2016). Poverty was measured items from the South African National Food Consumption Survey (Woollett et al., 2017) and self-report questions (Boyes et al., 2019; Brittain et al., 2019; Cluver et al., 2019; Cluver, Pantelic, et al., 2018; Kidman et al., 2018; Kidman & Violari, 2018; Pantelic et al., 2020). Household crowding was measured with a self-report question (Louw et al., 2016). Past-week food security was measured with items from the National Food Consumption Survey (Toska et al., 2017). Orphanhood status was measured with a self-report question (Boyes et al., 2019; Cluver, Meinck, et al., 2018; Cluver et al., 2019; Cluver, Pantelic, et al., 2018; Crowley et al., 2020; Hoare et al., 2019; Kidman et al., 2018; Kidman & Violari, 2018; Woollett et al., 2017). Urban/rural household location was measured with a self-report question (Boyes et al., 2019; Cluver et al., 2019; Cluver, Pantelic, et al., 2018; Pantelic et al., 2017, 2020; Toska et al., 2017). School progression was measured with the Strengths and Difficulties Questionnaire (Cluver et al., 2019) and a self-report question (Brittain et al., 2019; Cluver et al., 2019; Crowley et al., 2020; Hoare et al., 2019). Access to school was measured with items of school enrolment from Census South Africa (Cluver et al., 2019) and a self-report question (Brittain et al., 2019; Toska et al., 2017; Woollett et al., 2017). Access to a school feeding scheme was measured using a self-report question (Cluver et al., 2019; Toska et al., 2017). Access to a safe school was measured the Social and Health Assessment (Cluver et al., 2019). Access to a clinic support group was measured with a self-report question (Boyes et al., 2019; Cluver et al., 2019; Toska et al., 2017). Access to a government cash transfer was measured with a self-report question (Cluver et al., 2019; Cluver, Pantelic, et al., 2018; Toska et al., 2017). Access to sufficient clothing was measured with an item from the South African Social Attitudes Survey (Toska et al., 2017). Access to social support was measured with the Medical Outcome Study Social Support Survey (Boyes et al., 2019). Having a surviving and healthy caregiver was measured with a self-report question (Cluver, Pantelic, et al., 2018). Having at least one employed person in the household was measured with a self-report question (Cluver, Pantelic, et al., 2018; Hoare et al., 2019). Access to three meals a day was measured with a self-report question (Cluver et al., 2019; Cluver, Pantelic, et al., 2018). Lastly, access to free school was measured with a self-report question (Cluver, Pantelic, et al., 2018; Toska et al., 2017).

Psychometric properties of the quantitative measures under investigation

The majority of quantitative study authors (*n* = 11) commented on the psychometric properties of their scales (Boyes et al., 2019; Cluver et al., 2019; Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Coetzee et al., 2019; Crowley et al., 2020; Kagee et al., 2019; Kidman et al., 2018; Pantelic et al., 2017, 2020; Woollett et al., 2017). Cluver, Meinck et al. (2018) and Cluver, Pantelic et al. (2018) employed a categorical principal components analysis which established that all items loaded onto a single factor. Crowley et al. (2020) and Pantelic et al. (2017) employed a confirmatory factor analysis to ensure that their data supported the latent structures of their instruments. In addition, Boyes et al. (2019), Cluver et al. (2019), Coetzee et al. (2019), Crowley et al. (2020), Kagee et al. (2019), Kidman et al. (2018), Pantelic et al. (2017), Pantelic et al. (2020), and Woollett et al. (2017) all assessed the internal reliability of their measures. It is noted that Coetzee et al. (2019), Kagee et al. (2019), Pantelic et al. (2020) calculated the internal reliability of all their measures; Boyes et al. (2019), Cluver et al. (2019), Crowley et al. (2020), Kidman et al. (2018), Pantelic et al. (2017), and Woollett et al. (2017) only calculated the internal reliability of some of their measures.

Thematic synthesis of findings across the studies included in the sample

Among the psychosocial factors affecting HIV-infected adolescents accessing HIV treatment, seven themes arose from the analysis undertaken. Themes encompassing the psychosocial factors affecting ALHIV included (1) adolescent psychosocial development, (2) quality of life, (3), experience of adversity, (4) social support, (5) HIV stigma, (6) HIV status disclosure, and (7) ART adherence. These themes will be presented and discussed in relation to relevant literature.

Themes	Sub-themes
Adolescent psychosocial development	- Physiological impact - Social impact - Behavioural impact - Cognitive impact
Quality of life	- School functioning - Social functioning - Mental health functioning - Physical functioning
Experience of adversity	- Private space(s) - Public space(s)
Access to social support	- Access to caregivers(s) - Access to friends
Experience of HIV stigma	- Internalized stigma - Anticipated stigma - Enacted stigma
ART adherence	- Facilitators - Barriers
HIV status disclosure	- Selective - Unintended

Tabe 5: Themes and sub-themes embedded within the included articles

Theme 1: Adolescent psychosocial development

Prominent within the realm of ALHIV psychosocial development is their transition through the stages of adolescence, which necessitates physiological, psychological, and social changes (Besthorn et al., 2018; Bhana et al., 2016; Dawood, 2015). From a public health perspective, although normative in nature for all adolescents, these changes predispose ALHIV to additional psychosocial factors when developing their sense of identity, autonomy, decision making-capabilities, and coping skills (Besthorn et al., 2018) needed to successfully transition into young adulthood. From the articles included in this systematic review, it was apparent that ALHIV experienced a number of psychosocial factors which affected their physiological, social, behavioural, and cognitive development, which is in line with literature noting that the psychosocial development experienced by ALHIV during their transition through the three stages of adolescence is a psychosocial factor which affects ALHIV accessing HIV treatment services in South Africa (Besthorn et al., 2018; Bhana et al., 2016; Dawood, 2015).

Physiologically, ALHIV experienced stunted physiological development that resulted in delayed pubertal onset (Brittain et al., 2019; Hoare et al., 2019). This was acknowledged to have contributed to delayed menarche and breast development, and short stature amongst ALHIV. The experience of delayed pubertal onset among ALHIV is known to result in growth deficiencies (Anderson et al., 2020; Close, 2010), and was evident in some of the included articles. Such growth deficiencies increase the probability of atypical bone health and muscle weakness, stigma that accentuates the risk of MNS disorders, and failure to repress the viral load of ALHIV, which in turn increases their potential mortality risk (Anderson et al., 2020; Close, 2010). Poverty and socio-economic stressors add an additional layer of complexity to these implications. ALHIV treatment initiatives within low-to-middle-income settings are often ineffective in treating the aforementioned growth deficiencies, whilst ALHIV treatment initiatives from high-income settings note improvements in muscle growth and bone density (Anderson et al., 2020; Close, 2010). Even if ALHIV in low-to-middle-income settings initiated ART in a timely manner, their context, such as distance from health facilities and associated transportation costs, lead to irregular uptake of ART, therefore minimizing the positive impact that ART may have had on their physiological growth (Anderson et al., 2020; Close, 2010).

ALHIV also experienced impaired social development which was a consequence of their "unresolved grief and trauma as a result of losing their mother at a young age" (Mavangira & Raniga, 2015, p. 426). This loss, accompanied by the complexities of living with a chronic illness, facilitated the fostering of insecure and disorganized attachment styles amongst many ALHIV (Mavangira & Raniga, 2015). The fostering of insecure and disorganized attachment styles often predisposed ALHIV to develop internalizing and externalizing behaviors, which affected their mental health and QoL (Brown et al., 1997).

In addition, ALHIV engaged in behaviours which were predominantly of a health-risk nature (Brittain et al., 2019; Crowley et al., 2020; Kidman et al., 2018; Kidman & Violari, 2018; Toska et al., 2017). Some ALHIV reported an early sexual debut whilst others reported inconsistent condom use, having had multiple (and concurrent) sexual partners, and falling pregnant (Brittain et al., 2019; Cluver et al., 2019; Crowley et al., 2020; Kidman et al., 2018; Kidman & Violari, 2018; Mavangira & Raniga, 2015; Toska et al., 2017, 2017; Van Wyk & Davids, 2019). Moreover, ALHIV engaged in substance use behaviours; of those who had engaged in substance use behaviours, a small proportion of ALHIV developed substance abuse problems (Brittain et al., 2019; Cluver et al., 2019; Kidman et al., 2018; Kidman & Violari, 2018). It is noted that the most salient health-risk behaviours that ALHIV engaged in were that of inconsistent condom use and substance use/abuse, which is in line with other research premised on ALHIV (Ashaba et al., 2019; Boyes et al., 2018; Cluver et al., 2012; Kim et al., 2015; Lwidiko et al., 2018; Elona Toska et al., 2019; Woollett et al., 2017).

ALHIV were noted to have experienced cognitive deficiencies regarding their processing speed, attention, visual-spatial ability, visual memory, and executive functioning (Louw et al., 2016). Such cognitive deficiencies are often more prevalent amongst VALHIV than HALHIV (Goga et al., 2019; Meinck et al., 2019; Sherr et al., 2014); however it is noted again that VALHIV were not differentiated from HALHIV, therefore the occurrence of cognitive deficiencies among ALHIV should not be a generalized problem which affects all ALHIV. Lastly, ALHIV had limited HIV treatment knowledge as many were unaware of their HIV treatment success, their viral load, HIV treatment names, and consequences of ART non-adherence (Crowley et al., 2020; Van Wyk & Davids, 2019). Limited HIV treatment knowledge among ALHIV is not uncommon; however ALHIV require such knowledge in order to promote the acceptance and understanding of the implications associated with LHIV.

Theme 2: Quality of life

The QoL of ALHIV, from a public health perspective, is an important psychosocial factor affecting the health and well-being of ALHIV. Experiencing a low QoL is indicative of stressors in the individual's environment, inadequate social support structures and underlying mental health problems which, if not addressed, will continue to negatively impact ALHIV (Lee et al., 2006). From the articles included in this systematic review, it was clear that QoL amongst ALHIV was impacted by their social, academic, mental health and physical functioning. The social functioning of ALHIV put them at risk for defaulting on their HIV treatment as they would rather participate in achieving their social pursuits (i.e., desire to fit in) than employ HIV protective behaviours (i.e., ART adherence and abstinence or safe sex) (Crowley et al., 2020; Van Wyk & Davids, 2019). The mental health and emotional functioning of ALHIV were identified as a prominent concern as many ALHIV suffered from internalizing and externalizing behaviour, as well as other mental health complications (Boyes et al., 2019; Cluver et al., 2019; Coetzee, Loades, Toit, et al., 2019; Hoare et al., 2019; Kagee et al., 2019; Louw et al., 2016; Pantelic et al., 2017; Woollett et al., 2017). Of those experiencing internalizing behaviour, prominent issues were that of anxiety, depression, suicidality, PTSD, and insomnia. Externalizing issues were that of substance use/abuse, attempted suicide, selfharm, bullying, and defaulting ART. The physical health of ALHIV was stable, but many individuals experienced delayed pubertal onset (Brittain et al., 2019; Hoare et al., 2019). In addition, specific ALHIV had a higher potential mortality risk as they exhibited viral failure and symptomatic pulmonary TB (Brittain et al., 2019; Cluver et al., 2019; Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Crowley et al., 2020; Kidman et al., 2018; Kidman & Violari, 2018; Pantelic et al., 2020). Lastly, the academic functioning of ALHIV was impacted by participants having repeated a grade in school (Brittain et al., 2019; Cluver et al., 2019; Crowley et al., 2020; Hoare et al., 2019).

Overall, two main findings are of an important nature. First, it was identified that there was a significant relationship between ART self-management and QoL for ALHIV (Crowley et al., 2020). Second, mental health problems, such as anxiety, depression and insomnia, were significant predictors of QoL amongst ALHIV (Kagee et al., 2019). This indicates that ALHIV, who have taken responsibility for their health in light of the realization and acceptance of their HIV-positive status, are more adept at managing their time and lifestyle around ART adherence (Crowley et al., 2020). In addition, through HIV education initiatives, HIV self-management entails an awareness of the consequences associated with LHIV (i.e., knowledge of HIV transmission and acquisition pathways) (Crowley et al., 2020), which includes risky sexual behaviours. It is noted that ALHIV with a high degree of HIV self-management skills, compared to ALHIV with a low degree of self-management skills, were more likely to practice safe sex or abstain from sexual intercourse completely. However, an array of social factors such as a lack of social support needed to encourage protective social behaviours and ART adherence among ALHIV, often impedes self-management among ALHIV (Brittain et al., 2019; Cluver et al., 2019; Crowley et al., 2020; Hoare et al., 2019).

Theme 3: Experience of adversity

ALHIV in South Africa negotiate their transition through adolescence in a context characterized by the experience of different types and counts of adversities. From the articles included in this systematic review, it was evident that the experience of adversity was a common psychosocial factor that impacted the health and well-being of ALHIV (Boyes et al., 2019; Cluver et al., 2019; Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Kidman et al., 2018; Kidman & Violari, 2018; Louw et al., 2016; Mavangira & Raniga, 2015; Pantelic et al., 2017; Toska et al., 2017; Van Wyk & Davids, 2019; Woollett et al., 2017). The two predominant types of adversity experienced by ALHIV were that of ‘stressors within the family environment’ and the ‘experience of violence’.

Stressors within the family environment encompassed the loss of primary caregivers as a result of death or divorce, residing with alternative caregivers, the mental health and quality of life amongst caregivers and other co-inhabitants, and socio-economic insecurities. Such stressors within the family environment are known to predispose ALHIV to negative health outcomes when accessing HIV treatment services in South Africa (Evans et al., 2013; Mavangira & Raniga, 2015; Van Wyk & Davids, 2019). The findings from Boyes et al. (2019) indicate that ALHIV within these living conditions are more likely to exhibit the internalizing and externalizing behaviours of those around them as they mimic the abuse and violence witnessed by their caregivers and co-inhabitants. This gives rise to an environment characterized by anxiety, depression, PTSD, bullying, or substance abuse (Boyes et al., 2019; Brittain et al., 2019; Hoare et al., 2019). All such stressors are likely to have a negatively valenced psychosocial impact on the health and well-being of ALHIV in South Africa.

The social functioning of ALHIV was often impaired by their experience of losing a primary caregiver as a child. Mavangira and Raniga (2015) took it a step further and addressed the social functioning of ALHIV. Their results showcased that ALHIV tended to develop dysfunctional attachment styles which impeded their ability to form secure and meaningful attachments with others (Mavangira & Raniga, 2015). The fostering of maladaptive attachment styles further predisposed ALHIV to risky behaviours and a range of MNS disorders (Mavangira & Raniga, 2015; Sherr et al., 2018).

Exposure to violence was prevalent in both private and public spaces. In private spaces, ALHIV experienced violence from caregivers and significant others, as well as witnessed domestic violence within the household. Caregiver violence was emotional, verbal, physical, and sexual in nature, whilst violence from significant others was both of a physical and sexual nature. In public spaces, ALHIV experienced violence at schools, in the community, and in the healthcare setting. Violence at schools often came from teachers and peers, whilst community violence was of a vicarious and collective nature. Violence in the healthcare setting was predominantly of an emotional and verbal nature.

From a public health perspective, the cumulative impact that the aforementioned adversities had on the health and well-being of ALHIV was of a negatively valenced nature. In general, domestic and community violence is rife in South Africa and remains a psychosocial stressor for most of the population, regardless of HIV status – yet the findings from this systematic review indicate that such violence compounds the psychosocial factors of ALHIV are exposed to (Boyes et al., 2019; Cluver et al., 2019; Cluver, Meinck, et al., 2018; Cluver, Pantelic, et al., 2018; Kidman et al., 2018; Kidman & Violari, 2018; Louw et al., 2016;

Mavangira & Raniga, 2015; Pantelic et al., 2017; Toska et al., 2017; Van Wyk & Davids, 2019; Woollett et al., 2017)

Theme 4: Social support

Social support is an important psychosocial factor known to affect the mental health and QoL of ALHIV (Lam et al., 2007; Toth et al., 2018). From the articles included in this systematic review, it was apparent that ALHIV had inconsistent access to social support structures. Of the social support available to ALHIV, many appeared to rely on HIV support groups, their caregivers, family, and friends (Boyes et al., 2019; Cluver et al., 2019; Mavangira & Raniga, 2015; Toska et al., 2017; Van Wyk & Davids, 2019). Although inconsistent, access to social support mechanisms appeared to serve as a psychosocial buffer against certain types and counts of stressors. It was reported that having access to social support facilitated ART adherence; those with access to more social support adhered to ART, whereas those with little-to-no social support were often non-adherent to ART. In addition, having access to supportive caregivers and peer/intimate partners prompted the creation of non-biased spaces in which ALHIV were able to experience a sense of belonging. This sense of belonging was imperative in that it mitigated against the effects of HIV stigma and discrimination in the spaces frequented by ALHIV. From a public health perspective, adequate social support appeared to facilitate the experience of a sense of belonging among ALHIV. This sense of belonging is an essential psychosocial experience associated with positive mental health and QoL outcomes among ALHIV (Boyes et al., 2019; Cluver et al., 2019; Mavangira & Raniga, 2015; Toska et al., 2017; Van Wyk & Davids, 2019). In addition, a healthy support structure of caring family members, friends and healthcare providers appeared to mitigate against the negative impact of depression and anxiety among ALHIV (Boyes et al., 2019). It is noted that inadequate social support often resulted in ART non-adherence and an increased incidence of risky behaviours such as unprotected sex (Boyes et al., 2019; Cluver et al., 2019; Mavangira & Raniga, 2015; Toska et al., 2017; Van Wyk & Davids, 2019).

Theme 5: HIV stigma

HIV stigma has been documented to have a pervasive impact on the psychosocial functioning of ALHIV (Close, 2010; Jaspan et al., 2009; Kruger et al., 2018; Whetten et al., 2008; Williams et al., 2018). From the articles included in this systematic review, it was clear that the experience of HIV stigma was common amongst ALHIV (Boyes et al., 2019; Mavangira & Raniga, 2015; Pantelic et al., 2017, 2020; Van Wyk & Davids, 2019). Researchers have conceptualized HIV stigma as a multidimensional construct that encompasses: (1) anticipated stigma, (2) internalized stigma and (3) enacted stigma (Boyes et al., 2019; Mavangira & Raniga, 2015; Pantelic et al., 2017, 2020; Van Wyk & Davids, 2019). Anticipated stigma, a determinant of internalized stigma, was evident in the accounts provided by ALHIV. Specifically, the fear of rejection and discrimination was indicative of the anticipated stigma experienced by ALHIV. Moreover, the experience of internalized stigma prompted ALHIV to feel like "outcasts" (Van Wyk & Davids, 2019, p. 4) who were "dirty" (Van Wyk & Davids, 2019, p. 4). The feeling of being an 'outcast who is dirty' prompted ALHIV to feel as if they were different to their HIV-negative family members and peers. Consequently, the feeling of being different resulted in heightened feelings of loneliness amongst ALHIV. In addition to the negative effect anticipated stigma and internalized stigma had on the well-being of ALHIV, enacted stigma had a direct negative effect on the lives of ALHIV. In particular, enacted stigma was present in the form of HIV-related discrimination; such discrimination was directed towards ALHIV because of a family member's HIV-positive status as well as their own HIV-positive status. From a public health perspective, it is clear that HIV stigma is associated with negative psychosocial outcomes, which have been noted to impact the health and well-being of ALHIV (Close, 2010; Kruger et al., 2018; Kunguma et al., 2018; Whetten et al., 2008; Williams et al., 2018).

ALHIV require knowledge through education initiatives targeted towards addressing HIV myths and stereotypes; ALHIV also require knowledge about the benefits of social support systems in order to mitigate against the negative effect HIV stigma may have on their health and well-being (Close, 2010; Jaspan et al., 2009; Marfatia & Naswa, 2010). Furthermore, ALHIV who cope poorly with the effect of HIV stigma are more likely to succumb to social anxiety and depression, which originates from the fear of rejection (i.e., anticipated stigma) (Pantelic et al., 2017, 2020; Van Wyk & Davids, 2019). In addition, when the experience of stigma is prolonged, anticipated stigma can result in overwhelming feelings of loneliness; this loneliness often results in ALHIV perceiving themselves as abnormal or social outcasts. Lastly, stigma experienced from stunted physiological development, a shared experience by ALHIV, can further predispose ALHIV to an 'othering' which is akin to enacted stigma. This 'othering' is premised on the basis of ALHIV being physically different to that of their HIV-negative peers (Koenig et al., 2011; Mavangira & Raniga, 2015; Van Wyk & Davids, 2019).

Theme 6: HIV status disclosure

HIV status disclosure, an iterative process that differs across localities and contexts (Obermeyer et al., 2011), can affect the health and well-being of ALHIV. From the articles included in this systematic review, it was evident that the dynamics of HIV status disclosure were of a complex nature. Although ALHIV were aware of their HIV status, many were dissatisfied with how they came to find out about their HIV-positive diagnosis (Mavangira & Raniga, 2015). The most common person to disclose the HIV-positive status to ALHIV was their health and social care workers as well as family members (Mavangira & Raniga, 2015). Despite ALHIV choosing to disclose their HIV status to others, disclosure was either 'selective' or 'unintended' (Van Wyk & Davids, 2019). Selective disclosure was the preferred method of disclosure whereby ALHIV "chose to disclose their HIV-positive status to some and not to others" (Van Wyk & Davids, 2019, p. 4). It is noted that ALHIV predominantly disclosed their HIV status to family members and close friends whom they trusted. Unintended disclosure, feared by many ALHIV, was less common as ALHIV feared "rejection, stigma, and discrimination" (Van Wyk & Davids, 2019, p. 4). From a public health perspective, it was evident that despite the nature of disclosure being complex, it was often associated with negative psychosocial outcomes. Notably, the rate at which ALHIV choose to disclose their HIV-positive status appeared to be related to the experience of HIV stigma (Mavangira & Raniga, 2015; Van Wyk & Davids, 2019). When ALHIV reported high degrees of stigma (Boyes et al., 2019; Mavangira & Raniga, 2015; Pantelic et al., 2017, 2020; Van Wyk & Davids, 2019), regardless of whether it is in the form of internalized, anticipated or enacted stigma, they were less likely to disclose their positive status to others (Mavangira & Raniga, 2015; Van Wyk & Davids, 2019). Persons to whom ALHIV were most likely to reveal their HIV-positive status were family members, healthcare providers and social workers (Mavangira & Raniga, 2015; Van Wyk & Davids, 2019).

Theme 7: ART adherence

Adapting to life with a chronic disease necessitates the need for ALHIV to effectively manage their ART regimes (Close, 2010; Jaspan et al., 2009; Van Wyk & Davids, 2019). However, from a public health perspective, ART adherence is a complex and multidimensional psychosocial factor that affects the health and well-being of ALHIV. Notably, HIV self-management, a construct related to ART adherence, was a strong predictor of ART adherence among ALHIV (Crowley et al., 2020). For ALHIV, self-management entails a sense of self-ownership, responsibility and strong resilience, and requires a robust social support structure in order to facilitate ALHIV to become more confident when negotiating the complexity of living with a chronic illness (Crowley et al., 2020; Moosa & Jeenah, 2012; Van Wyk & Davids, 2019). From the articles included in this systematic review, it was apparent that ART use among ALHIV varied, with many adhering to their treatment regimens according to self-reports. Notably, the sole facilitator of ART adherence was the availability of social support from caregivers and friends or intimate others. It becomes more imperative for ALHIV to have supportive family and friends when faced with the realization that the number of PLHIV heavily outweighs the number of available healthcare providers and social workers in South Africa (Lam et al., 2007; National Department of Health, 2018). It is noted that despite access to social support being inconsistent across all ALHIV, several barriers to ART adherence were noted; barriers to ART adherence encompassed patient, school, treatment, and health service-related factors.

Patient factors that affected ART adherence amongst ALHIV were related to negative relationships with alternative caregivers and socio-economic insecurities. Living with alternative caregivers who were emotionally unavailable was cited as a barrier to ART adherence as ALHIV would attempt to default their ART in a bid to "end their lives and be with their deceased biological parents" (Van Wyk & Davids, 2019, p. 4). Socio-economic insecurities were also noted to pose difficulties to ART adherence as ALHIV often had limited access to financial support needed to cover transport costs in order to access HIV treatment services. School factors that affected ART adherence amongst ALHIV included their teacher's behaviour and attitude, as well as their school commitments. The attitude and behaviours of certain teachers were noted to have been of an unfriendly and abusive nature. The volatility of some teachers prompted ALHIV to feel uncomfortable and unwilling to communicate their healthcare needs (i.e., the need to regularly attend the clinic) for fear of abuse and victimization. Moreover, school commitments and busy school schedules of ALHIV prevented them from having designated times to access the clinic; they also feared unintended disclosure should they regularly miss school to attend the clinic. Factors associated with the treatment regimens also posed a challenge to ART adherence amongst ALHIV. In particular, ALHIV had limited knowledge regarding the adverse side effects of ART, which made them feel uncomfortable and unlikely to consistently take their medication. Some ALHIV were unaccustomed to the rigid treatment routines associated with ART adherence, and this resulted in frustration and fatigue because "no leniency was allowed"(Van Wyk & Davids, 2019, p. 6). Consequently, the lack of leniency accorded to ALHIV also resulted in inconsistent adherence to ART. Health-service factors that affected ART adherence among ALHIV included a lack of privacy and confidentiality during healthcare follow-up visits, the knowledge of healthcare workers, the behaviour of healthcare workers, lack of support, missing and misplaced files, and long waiting times. The lack of confidentiality and privacy at local clinics, labelled 'HIV services', subjected ALHIV to further stigma. Moreover, healthcare workers had limited knowledge regarding the unique attributes of ALHIV and this impacted on their service delivery to this group and resultant adherence. The behaviour of healthcare workers also posed a challenge to ALHIV adherence as healthcare workers were noted to be verbally abusive and provided overtly differentiated care towards those who were adherent and non-adherent to their HIV treatment regimens. In addition, some healthcare workers appeared to be unsupportive towards ALHIV; ALHIV were perceived to be fully responsible for their healthcare needs. Missing and misplaced files was another barrier to ART adherence as many ALHIV were required to go home and return to the clinic on another occasion when the files were located. Lastly, ALHIV were required to wait for extended periods of time to collect their medication needed to adhere to ART; notably, this interfered with the school commitments of ALHIV.

Discussion

Whilst South Africa is characterized by a magnitude of social and economic stressors that place ALHIV at risk of adverse psychosocial health outcomes, the psychosocial impact of HIV on ALHIV has not been adequately assessed in the South African context, as evidenced by the limited number of empirical articles that adhered to the inclusion criteria informing this research report. What has been done to address this topic in the South African context has occurred in the last six years (i.e., 2015-2020). This uptake of research suggests a growing trend within contemporary HIV research in South Africa. Using a systematic approach, this review has described, analyzed and discussed the available findings on the psychosocial outcomes among ALHIV accessing HIV treatment. Figure 2 highlights the seven psychosocial factors which affect ALHIV accessing HIV treatment services in South Africa.

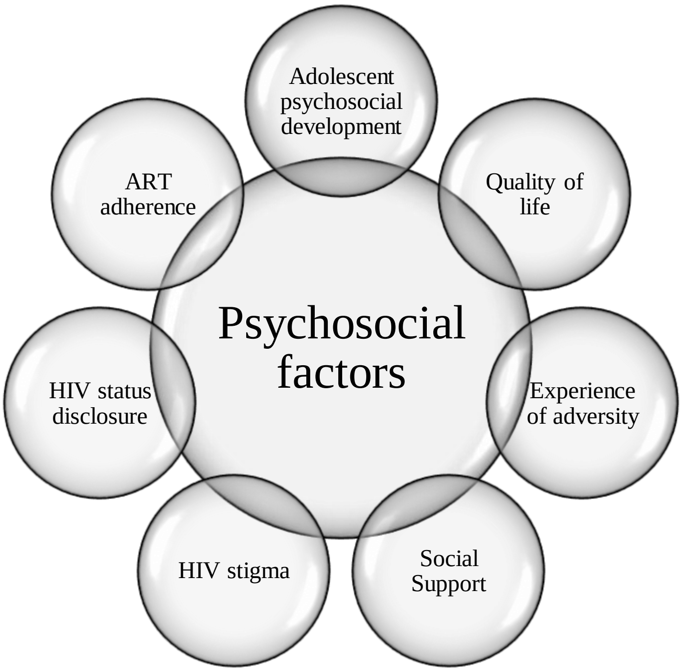


Figure 2: Psychosocial factors which affect ALHIV accessing HIV treatment services

The psychosocial factors which affected the health and well-being of ALHIV were of a complex and multidimensional nature. Specifically, the psychosocial development, QoL, experience of adversity, social support, ART adherence, HIV stigma, and HIV status disclosure had a differential impact on the health and well-being of ALHIV accessing HIV treatment services in South Africa. From the findings of this research report, it was evident that the only psychosocial factor which had a positive psychosocial impact on the health and well-being of ALHIV was the availability of social support. Social support was noted to have promoted ART adherence among ALHIV; social support also served as a psychosocial buffer against certain types and counts of stressors. However, the lack of social support, as well as adolescent psychosocial development, QoL, experience of adversity, ART (non)adherence, HIV stigma, and HIV status disclosure all had a negative psychosocial impact on the health and well-being of ALHIV. All of the aforementioned negatively-valenced psychosocial factors often compound the psychosocial distress associated with living with a chronic illness, such as HIV. Nevertheless, the lack of social support, as well as adolescent psychosocial development, QoL, experience of adversity, ART (non)adherence, HIV stigma, and HIV status disclosure predisposed ALHIV to experience additional psychosocial distress, which commonly resulted in poor health (as conceptualized by the WHO) outcomes.

It is noted that although the articles included in this systematic review addressed some of the major psychosocial factors associated with LHIV, none of the articles investigated the impact narratives of masculinity had on the health and well-being of ALHIV. Narratives of masculinity are often gendered and encourage poor sexual negotiation skills among females whilst concurrently increasing the incidence of risky sexual and violence-related behaviour amongst males (Fatusi & Hindin, 2010). It could be suggested that narratives of masculinity resulted in ALHIV experiencing their sexual debut at an early age. Narratives of masculinity may have also influenced the incidence and prevalence of health-risk behaviours that ALHIV were noted to have engaged in. Similarly, none of the included articles in this systematic review addressed the transition ALHIV undergo when moving from pediatric to adult-oriented healthcare. The transition ALHIV experience when moving from pediatric to adult-oriented healthcare is precarious as ALHIV are often undifferentiated from their adult counterparts, which results in the provision of undifferentiated care by healthcare professionals (Anderson et al., 2020; Goga et al., 2019; Hussen et al., 2014; Sherr et al., 2018; Slogrove & Sohn, 2018). This experience can increase the pressure for ALHIV to become more independent, autonomous, and self-sufficient when adhering to their HIV treatment regimens (Close, 2010; Davies & Hamlyn, 2018; Jaspan et al., 2009). However, ALHIV are not always equipped with the necessary psychosocial skills needed to adequately adhere to ART without the assistance of their caregivers or healthcare professionals (Koenig et al., 2011; Marfatia & Naswa, 2010; Sherr et al., 2018). Moreover, although articles included in this systematic review investigated adherence to ART, none of the articles specifically explored the psychological or psychosocial impact ART had on the health and well-being of ALHIV. The psychological or psychosocial impact of ART on the health and well-being of ALHIV is a crucial consideration as ALHIV are required to adhere to ART to achieve sustained viral suppression and long-term immunologic recovery (Evans et al., 2013; Haberer & Mellins, 2009; Toth et al., 2018). However, adapting to life with a chronic disease necessitates the need to manage medication regimes effectively (Close, 2010; Jaspan et al., 2009; Van Wyk & Davids, 2019), which may have a negative psychological or psychosocial impact on the health and well-being of ALHIV. In particular, ALHIV may experience ART-related side effects and treatment fatigue (premised on complex twice-daily doses). These are salient psychosocial factors known to affect the health and well-being of ALHIV (Chuah et al., 2017; Close, 2010; Jaspan et al., 2009; Nassen et al., 2014; National Department of Health, 2018; Southern African HIV Clinicians Society, 2013, 2014; Thom, 2009; Whetten et al., 2008). Despite the lack of research in the above aspects of psychosocial wellbeing among ALHIV, the findings of this research report nevertheless have important implications for practice, theory, and future research.

Implications for practice, theory, and future research

The psychosocial factors which affected ALHIV in the South African context are numerous and complex, and this research report has been able to showcase the impact certain psychosocial factors had on the health and well-being of ALHIV accessing HIV treatment services in South Africa.

ALHIV are a particularly vulnerable cohort of PLHIV and present with clinically distinct differences compared to that of their adult and child HIV-positive counterparts. The distinction between ALHIV and their adult and child counterparts is premised on the psychosocial transition ALHIV undergo during the three stages of adolescence. This distinction is an essential consideration in providing person-centred care, which is of a holistic and psychosocial nature. However, it is a central concern that although VALHIV were differentiated from HALHIV on the basis of their mode of HIV acquisition in some of the included studies, none of the studies separated VALHIV from HALHIV in their analyses and findings. This creates a false narrative in which VALHIV and HALHIV are seen as comparable cohorts requiring similar approaches to their HIV treatment initiatives. As a result, this research report was not able to differentiate between the psychosocial factors which affect HALHIV and VALHIV independently, and instead showcased the psychosocial factors which affect ALHIV as a collective. Future research that differentiates VALHIV from HALHIV samples would be instructive on understanding the diverse experiences and needs of these two cohorts.

It should be stressed that those who interact with ALHIV, such as their healthcare workers, require particular forms of knowledge related to the unique attributes that ALHIV present with when accessing HIV treatment services in South Africa. These unique attributes are complicated by the context in which ALHIV reside in. In particular, violence, HIV sigma, and socio-economic insecurities are salient across the South African context, and the findings from this research report have highlighted their pervasive role in the every-day-life of ALHIV accessing HIV treatment services in South Africa. In addition, healthcare workers, in particular, not only require knowledge of the unique attributes ALHIV present with, but also require structural support in the form of regular training and supervision. Regular training and supervision is needed in the context of evidence-based healthcare interventions aimed at holistic and person-centred care. Healthcare workers should be encouraged to see themselves as part of the broader social support structure for ALHIV as their judgmental attitudes, whether intentional or not, can often result in adverse treatment outcomes among ALHIV. In addition to the need for healthcare workers to comprehensively understand the unique attributes ALHIV present with, ALHIV also require knowledge of their HIV status and sustained psychosocial support to promote the acceptance and understanding of the implications associated with LHIV.

From a theoretical perspective, this research report has demonstrated the importance of using public health theoretical framework which conceptualizes ‘health’ in a holistic and psychosocially nuanced manner. Conceptualizing ‘health’, as per the WHO, facilitated the exploration of the psychosocial factors which had subtle and, at times, overt influences over the health outcomes amongst ALHIV. In addition, this research report has highlighted the utility of orientating to a public health framework in conjunction with a systematic review method. Specifically, the importance of utilizing a public health theoretical model lay in its ability to delineate health implications using quantitative and qualitative data in order to examine the response by mental healthcare to addressing the differential needs that ALHIV presented with when accessing HIV treatment services in South Africa.

From a research perspective, it is concerning that the articles included in this systematic review made little use of psychological or psychosocial insight, given the bi-directional nature of HIV and mental health among ALHIV. More research premised on the impact of HIV on the mental health of ALHIV is needed. Future research should, however, adopt a psychological or psychosocial approach to their research initiatives given the high burden of mental health symptoms observed in ALHIV populations in diverse contexts and localities, and the limited availability of research on ALHIV in South Africa. In order to contribute to the body of knowledge premised on ALHIV in South Africa, more research addressing the psychosocial factors that affect ALHIV accessing HIV treatment services is needed. Researchers also need to ensure their studies are bias-free as possible. Surveys and questionnaires aimed at measuring psychosocial factors are often imported from the Global North and are plagued with validity concerns. should they be used in the South African context, they should be accurately adapted in order to minimize the risk of bias. The majority of the quantitative studies reported on the psychometric properties of the measures employed in the articles; however, it is important to consider the impact that self-report measures have on the quality of outcomes measured. Specifically, the reliability as well as the validity of the measures used ought to be considered. In addition to this, methodological issues associated with self-reported data, such as sampling or response bias, also have to be considered. It is also essential for future research to consider the impact volunteer bias has on the quality of results as well. Volunteer bias, an important consideration in quantitative research, has been shown to introduce a significant amount of bias within the results. This bias, when unacknowledged, commonly results in positive rather than negative outcomes. Therefore, the results reported by the systematic review must be considered with caution. This caution is not indicative of problematic results, but it suggests that more can be done to increase the quality of outcomes investigated. In relation to the included articles that reported on their instruments' psychometric properties, it was evident that the instruments employed were of high quality, as indicated by their high internal reliability estimates. Despite this, the validity of the instruments was not adequately discussed by study authors. It is noted that although some authors noted that their instruments were administered in previous research initiatives with comparable samples, none of the study authors provided detailed information about the scales they employed.

Limitations

The limitations of this current research report ought to be considered. First, it is stressed that as a result of the purposive inclusion criteria used to inform this research report, the articles in the final sample cannot be representative of what has been done in the field of mental health and HIV. Specifically, excluding grey and other non-empirical literature, as well as articles published in languages other than English, may have contributed to evidence collection bias in that this systematic review was not able to identify all available data on the topic under investigation. Second, this systematic review was both conducted and written up by one primary reviewer (i.e., the author of this research report), which is not recommended by the available guidelines on systematic review methods. Given this, it is possible that empirical articles which adhered to the inclusion criteria informing this research report were missed during the screening and selection process of this systematic review. Third, due to the limited number of articles addressing the topic under investigation, the findings from this systematic review cannot be completely generalizable and transferable to all ALHIV accessing HIV treatment services in South Africa. Fourth, the study designs used within the included studies do not allow for generalizability as they were predominantly cross-sectional, correlational, and descriptive. Given these limitations, potential bias was minimized by using a reflective journal and consulting the supervisor of this research report.

Conclusion

Adopting a psychosocial approach to person-centred healthcare, research, and theory, has inherent merits and shortcomings which have to be weighed against the situation healthcare providers and researchers find themselves in. For instance, adopting a psychosocial approach to the provision of healthcare requires healthcare workers to tap into the life-world of ALHIV. Tapping into the life-world of ALHIV is essential in order to perceive the differential needs that ALHIV present with in their everyday-life context. However, adopting a psychosocial approach to healthcare provision and research requires time and resources, such as quantitative measures, which are not readily available in South Africa's public healthcare system. In order to mitigate against the need for quantitative measures, healthcare workers and researchers can adopt a narrative or phenomenological approach to understanding and exploring the unique needs ALHIV present with when accessing HIV treatment services in South Africa. It should be noted that although the benefits often outweigh the cons of adopting a psychosocial approach to the provision of healthcare in particular, the context healthcare workers find themselves in is notably overburdened and under-resourced. This research report indicates that the investigation into the psychosocial factors that affect ALHIV is a complex and taxing process, which can further overburden healthcare workers in the South African context. Despite this, this research report has been able to identify, discuss, and showcase the way in which certain psychosocial factors (psychosocial development, QoL, experience of adversity, social support, ART adherence, HIV stigma, and HIV status disclosure) were able to impact the health and well-being of ALHIV accessing HIV treatment services in South Africa. Despite the global realization that increasing access to ART promotes significant bio-medical gains amongst ALHIV, the psychosocial impact of HIV on the health and well-being of ALHIV has been overlooked in the South African context. ALHIV, as a collective, represent a growing cohort presenting with clinically distinct psychosocial vulnerabilities that differ from both child and adult HIV-positive populations, and these vulnerabilities are often compounded by the psychosocial factors identified in this research report. Therefore, in order to ensure that the provision of healthcare for ALHIV is of a psychosocially nuanced nature, more needs to be done in the realm of theory, research, and the provision of healthcare that takes QoL and mental health into account.

References

Anderson, K., Muloiwa, R., & Davies, M.A. (2020). Long-term outcomes in perinatally HIV-infected adolescents and young adults on antiretroviral therapy: A review of South African and global literature. *African Journal of AIDS Research*, *9*(2), 1–12. https://doi.org/10.2989/16085906.2019.1676802

Ashaba, S., Cooper-Vince, C., Vořechovská, D., Maling, S., Rukundo, G. Z., Akena, D., & Tsai, A. C. (2019). Development and validation of a 20-item screening scale to detect major depressive disorder among adolescents with HIV in rural Uganda: A mixed-methods study. *Population Health*, *7*(100332), 1–7. https://doi.org/10.1016/j.ssmph.2018.100332

Ataguba, J. E., Akazili, J., & McIntyre, D. (2011). Socioeconomic-related health inequality in South Africa: Evidence from general household surveys. *International Journal for Equity in Health*, *10*(1), 1–10. https://doi.org/10.1186/1475-9276-10-48

AVERT. (2020). *HIV and AIDS in South Africa*. AVERT. https://www.avert.org/professionals/hiv-around-world/sub-saharan-africa/south-africa

Barrett, D. E. (1996). The three stages of adolescence. *The High School Journal*, *79*(4), 333–339. JSTOR.

Bearman, M., & Dawson, P. (2013). Qualitative synthesis and systematic review in health professions education. *Medical Education*, *47*(3), 252–260. https://doi.org/10.1111/medu.12092

Bekker, L.-G. (2009). Addressing mental health in routine HIV care and treatment. *The South African Journal of HIV Medicine*, 5–6.

Besthorn, F., Kalomo, E. N., Lightfoot, E., & Liao, M. (2018). The relationship between social support and anxiety amongst children living with HIV in rural northern Namibia. *African Journal of AIDS Research*, *17*(4), 293–300. https://doi.org/10.2989/16085906.2018.1534748

Bhana, A., Mellins, C. A., Small, L., Nestadt, D. F., Leu, C.-S., Petersen, I., Machanyangwa, S., & McKay, M. (2016). Resilience in perinatal HIV+ adolescents in South Africa. *AIDS Care*, *28*(2), 49–59. https://doi.org/10.1080/09540121.2016.1176676

Boland, A., Cherry, G., & Dickson, R. (2017). *Doing a systematic review: A student's guide*. SAGE.

Boyes, M. E., Cluver, L. D., Meinck, F., Casale, M., & Newnham, E. (2019). Mental health in South African adolescents living with HIV: Correlates of internalising and externalising symptoms. *AIDS Care*, *31*(1), 95–104. https://doi.org/10.1080/09540121.2018.1524121

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic Analysis. In P. Liamputtong (Ed.), *Handbook of research methods in health social sciences* (1st ed., pp. 843–860). Springer. https://doi.org/10.1007/978-981-10-5251-4_103

Brittain, K., Myer, L., Phillips, N., Cluver, L. D., Zar, H. J., Stein, D. J., & Hoare, J. (2019). Behavioural health risks during early adolescence among perinatally HIV-infected South African adolescents and same-age, HIV-uninfected peers. *AIDS Care*, *31*(1), 131–140. https://doi.org/10.1080/09540121.2018.1533233

Brown, L. K., Danovsky, M. B., Lourie, K. J., DiClemente, R. J., & Ponton, L. E. (1997). Adolescents with psychiatric disorders and the risk of HIV. *Journal of the American Academy of Child & Adolescent Psychiatry*, *36*(11), 1609–1617. https://doi.org/10.1016/S0890-8567(09)66573-4

Burns, J. K. (2010). Mental health advocacy: Lessons from HIV activism. *South African Medical Journal*, *100*(10), 654–656.

Candy, D., Andy, G., & Noluthando, N. (2018). South African health review 2018. In L. C. Rispel & A. Padarath (Eds.), *South African health review 2018* (21st ed., pp. 139–241). Health Systems Trust. https://www.hst.org.za/publications/South%20African%20Health%20Reviews/SAHR%202018.pdf

Chuah, F. L. H., Haldane, V. E., Cervero-Liceras, F., Ong, S. E., Sigfrid, L. A., Murphy, G., Watt, N., Balabanova, D., Hogarth, S., Maimaris, W., Otero, L., Buse, K., McKee, M., Piot, P., Perel, P., & Legido-Quigley, H. (2017). Interventions and approaches to integrating HIV and mental health services: A systematic review. *Health Policy and Planning*, *32*, 27–47. https://doi.org/10.1093/heapol/czw169

Close, Kristin. L. (2010). Psychosocial aspects of HIV/AIDS: Children and adolescents. In Baylor international pediatric AIDS initiative (Ed.), *HIV Curriculum: For the Health Professional* (4th ed., pp. 319–333). Baylor College of Medicine. https://bipai.org/sites/bipai/files/HIV_Curriculum_Web.pdf

Cluver, L. D., Meinck, F., Toska, E., Orkin, F. M., Hodes, R., & Sherr, L. (2018). Multitype violence exposures and adolescent antiretroviral nonadherence in South Africa. *AIDS*, *32*(8), 975–983. https://doi.org/10.1097/QAD.0000000000001795

Cluver, L. D., Orkin, F. M., Campeau, L., Toska, E., Webb, D., Carlqvist, A., & Sherr, L. (2019). Improving lives by accelerating progress towards the UN Sustainable

Development Goals for adolescents living with HIV: A prospective cohort study. *The Lancet. Child & Adolescent Health*, *3*(4), 245–254. https://doi.org/10.1016/S2352-4642(19)30033-1

Cluver, L. D., Pantelic, M., Orkin, M., Toska, E., Medley, S., & Sherr, L. (2018). Sustainable Survival for adolescents living with HIV: Do SDG-aligned provisions reduce potential mortality risk? *Journal of the International AIDS Society*, *21*, e25056. https://doi.org/10.1002/jia2.25056

Cluver, L. D., Orkin, M., Gardner, F., & Boyes, M. E. (2012). Persisting mental health problems among AIDS-orphaned children in South Africa: Persisting distress amongst South African AIDS-orphaned children. *Journal of Child Psychology and Psychiatry*, *53*(4), 363–370. https://doi.org/10.1111/j.1469-7610.2011.02459.x

Cochrane Consumers And Communication La Trobe University, Ryan, R., Synnot, A., & Hill, S. (2018). *Data extraction template*. 268394 Bytes. https://doi.org/10.26181/5B57CFD711743

Cochrane Consumers And Communication, & Ryan, R. (2020). Data synthesis and analysis. *La Trobe*, 1–5. https://doi.org/10.26181/5B57D8CFB692B

Coetzee, B. J., Loades, M. E., Du Toit, S., & Kagee, A. (2019). Correlates of fatigue among South African adolescents living with HIV and receiving antiretroviral therapy. *AIDS and Behavior*, *23*(3), 602–608. https://doi.org/10.1007/s10461-018-02384-6

Colins, P. Y., Holman, A. R., Freeman, M. C., & Patel, V. (2006). What is the relevance of mental health to HIV/AIDS care and treatment programs in developing countries? A systemic review. *AIDS*, *20*(12), 1571–1582.

Committee on Community-Based Solutions to Promote Health Equity in the United States, Board on Population Health and Public Health Practice, Health and Medicine Division, & National Academies of Sciences, Engineering, and Medicine. (2017). *Communities in action: Pathways to health equity* (J. N. Weinstein, A. Geller, Y. Negussie, & A. Baciu, Eds.; 1st ed.). National Academies Press. https://doi.org/10.17226/24624

Conway, A., Clarke, M. J., Treweek, S., Schünemann, H., Santesso, N., Morgan, R. L., Darragh, M., Maguire, L. K., & Devane, D. (2017). Summary of findings tables for communicating key findings of systematic reviews. *Cochrane Database of Systematic Reviews*. https://doi.org/10.1002/14651858.MR000044

Cooke, A., Smith, D., & Booth, A. (2012). Beyond PICO: The SPIDER tool for qualitative evidence synthesis. *Qualitative Health Research, 22*(10), 1435–1443. https://doi.org/10.1177/1049732312452938

Cooper, D., De Lannoy, A., & Rule, C. (2015). Youth health and well-being: Why it matters? *South African Child Gauge,* 60–68. http://hdl.handle.net/20.500.11910/1739

Coovadia, H., Jewkes, R., Barron, P., Sanders, D., & McIntyre, D. (2009). The health and health system of South Africa: Historical roots of current public health challenges. *The Lancet*, *374*(9692), 817–834. https://doi.org/10.1016/S0140-6736(09)60951-X

Corrigan, P. W., Mittal, D., Reaves, C. M., Haynes, T. F., Han, X., Morris, S., & Sullivan, G. (2014). Mental health stigma and primary health care decisions. *Psychiatry Research*, *218*(1–2), 35–38. https://doi.org/10.1016/j.psychres.2014.04.028

Crowley, T., van der Merwe, A., Kidd, M., & Skinner, D. (2020). Adolescent human immunodeficiency virus self-management: Associations with treatment adherence, viral suppression, sexual risk behaviours and health-related quality of life. *Southern African Journal of HIV medicine*, *21*(1). https://doi.org/10.4102/sajhivmed.v21i1.1054

Davies, M.-A., & Hamlyn, E. (2018). HIV and adolescents: Challenges and opportunities. *Current Opinion in HIV and AIDS*, *13*(3), 167–169. https://doi.org/10.1097/COH.0000000000000461

Dawood, H. (2015). Adolescent HIV treatment issues in South Africa. *South African Medical Journal*, *105*(11), 953–955. https://doi.org/10.7196/SAMJ.2015.v105i11.10130

Dick, B., & Ferguson, B. J. (2015). Health for the world’s adolescents: A second chance in the second decade. *Journal of Adolescent Health*, *56*(1), 3–6. https://doi.org/10.1016/j.jadohealth.2014.10.260

Docrat, S., Besada, D., Cleary, S., Daviaud, E., & Lund, C. (2019). Mental health system costs, resources and constraints in South Africa: A national survey. *Health Policy and Planning*, *34*(9), 706–719. https://doi.org/10.1093/heapol/czz085

Donald, K., Walker, K., Riordan, G., Govender, R., & Wilmshurst, J. (2011). Neurological complications of HIV/AIDS in childhood. *Continuing Medical Education*, *30*(1), 21–24.

Donenberg, G. R., & Pao, M. (2003). Understanding HIV/AIDS: Psychosocial and psychiatric issues in youths. *Contemporary Psychiatry*, *2*(7), 1–8. PubMed.

Donenberg, G. R., & Pao, M. (2005). Youths and HIV/AIDS: Psychiatry’s role in a changing epidemic. *Journal of the American Academy of Child & Adolescent Psychiatry*, *44*(8), 728–747. https://doi.org/10.1097/01.chi.0000166381.68392.02

Dwan, K., Altman, D. G., Arnaiz, J. A., Bloom, J., Chan, A.-W., Cronin, E., Decullier, E., Easterbrook, P. J., Von Elm, E., Gamble, C., Ghersi, D., Ioannidis, J. P. A., Simes, J., & Williamson, P. R. (2008). Systematic review of the empirical evidence of study publication bias and outcome reporting bias. *PLoS ONE*, *3*(8), 1–31. https://doi.org/10.1371/journal.pone.0003081

Evans, D., Menezes, C., Mahomed, K., Macdonald, P., Untiedt, S., Levin, L., Jaffray, I., Bhana, N., Firnhaber, C., & Maskew, M. (2013). Treatment outcomes of HIV-infected adolescents attending public-sector HIV clinics across Gauteng and Mpumalanga, South Africa. *AIDS Research and Human Retroviruses*, *29*(6), 892–900. https://doi.org/10.1089/aid.2012.0215

Fatusi, A. O., & Hindin, M. J. (2010). Adolescents and youth in developing countries: Health and development issues in context. *Journal of Adolescence*, *33*(4), 499–508. https://doi.org/10.1016/j.adolescence.2010.05.019

Fawzi, M. C., Eustache, E., Oswald, C., Surkan, P., Louis, E., Scanlan, F., Wong, R., Li, M., & Mukherjee, J. (2010). Psychosocial functioning among HIV-affected youth and their caregivers in Haiti: Implications for family-focused service provision in high hiv burden settings. *AIDS Patient Care and STDs*, *24*(3), 147–158. https://doi.org/10.1089/apc.2009.0201

Finlay, L., & Gough, B. (Eds.). (2003). *Reflexivity: A practical guide for researchers in health and social sciences*. Wiley-Blackwell.

Forero, R., Nahidi, S., De Costa, J., Mohsin, M., Fitzgerald, G., Gibson, N., McCarthy, S., & Aboagye-Sarfo, P. (2018). Application of four-dimension criteria to assess rigour of qualitative research in emergency medicine. *BMC Health Services Research*, *18*(1), 1–11. https://doi.org/10.1186/s12913-018-2915-2

Geary, R. S., Gómez-Olivé, F. X., Kahn, K., Tollman, S., & Norris, S. A. (2014). Barriers to and facilitators of the provision of a youth-friendly health services programme in rural South Africa. *BMC Health Services Research*, *14*(1), 1–8. https://doi.org/10.1186/1472-6963-14-259

Gellman, M. D., & Turner, J. R. (Eds.). (2013). *Encyclopedia of behavioral medicine* (1st ed.). Springer. https://link.springer.com/referencework/10.1007/978-1-4419-1005-9

Germond, P., & Cochrane, J. R. (2010). Healthworlds: Conceptualizing landscapes of health and healing. *Sociology*, *44*(2), 307–324. https://doi.org/10.1177/0038038509357202

Gervaix, J., Haour, G., Michel, M., & Chevreul, K. (2018). Impact of mental illness on care for somatic comorbidities in France: A nation-wide hospital-based observational study. *Epidemiology and Psychiatric Sciences*, *28*(5), 495–507. https://doi.org/10.1017/S2045796018000203

Gibbs, A., & Jobson, G. (2011). Narratives of masculinity in the Daily Sun: Implications for HIV risk and prevention. *South African Journal of Psychology*, *41*(2), 173–186. https://doi.org/10.1177/008124631104100206

Goga, A., Slogrove, A., Wedderburn, C. J., Feucht, U., Wessels, J., Ramokolo, V., Bhana, A., Du Plessis, N., Green, R. J., Pillay, Y., & Sherman, G. (2019). The impact of health programmes to prevent vertical transmission of HIV. Advances, emerging health challenges and research priorities for children exposed to or living with HIV: Perspectives from South Africa. *South African Medical Journal*, *109*(11), 77–82. https://doi.org/10.7196/SAMJ.2019.v109i11b.14292

Gray, G. E. (2010). Adolescent HIV — Cause for concern in Southern Africa. *PLoS Medicine*, *7*(2), 1–4. https://doi.org/10.1371/journal.pmed.1000227

Haberer, J., & Mellins, C. (2009). Pediatric adherence to HIV antiretroviral therapy. *Current HIV/AIDS Reports*, *6*(4), 194–200. https://doi.org/10.1007/s11904-009-0026-8

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2019). *Cochrane handbook for systematic reviews of interventions* (1st ed.). Wiley. https://doi.org/10.1002/9781119536604

Hoare, J., Phillips, N., Brittain, K., Myer, L., Zar, H. J., & Stein, D. J. (2019). Mental health and functional competence in the Cape Town adolescent antiretroviral cohort. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *81*(4), e109–e116. https://doi.org/10.1097/QAI.0000000000002068

Hoare, J., Ransford, G. L., Phillips, N., Amos, T., Donald, K., & Stein, D. J. (2014). Systematic review of neuroimaging studies in vertically transmitted HIV positive children and adolescents. *Metabolic Brain Disease*, *29*(2), 221–229. https://doi.org/10.1007/s11011-013-9456-5

Hussen, S. A., Chahroudi, A., Boylan, A., Camacho-Gonzalez, A. F., Hackett, S., & Chakraborty, R. (2014). Transition of youth living with HIV from pediatric to adult-oriented healthcare: A review of the literature. *Future Virology*, *9*(10), 921–929. https://doi.org/10.2217/fvl.14.73

Inhorn, M. C., & Whittle, K. L. (2001). Feminism meets the "new" epidemiologies: Toward an appraisal of antifeminist biases in epidemiological research on women's health. *Social Science & Medicine*, *53*(5), 553–567. https://doi.org/10.1016/S0277-9536(00)00360-9

Institute of Medicine (Ed.). (2003). *The future of the public's health in the 21st century* (1st ed.). National Academies Press.

Jacob, N., & Coetzee, D. (2018). Mental illness in the Western Cape province, South Africa: A review of the burden of disease and healthcare interventions. *South African Medical Journal*, *108*(3), 176–180. https://doi.org/10.7196/SAMJ.2018.v108i3.12904

James, S., Pisa, P. T., Imrie, J., Beery, M. P., Martin, C., Skosana, C., & Delany-Moretlwe, S. (2018). Assessment of adolescent and youth friendly services in primary healthcare facilities in two provinces in South Africa. *BMC Health Services Research*, *18*(1), 1–10. https://doi.org/10.1186/s12913-018-3623-7

Jaspan, H. B., Li, R., Johnson, L., & Bekker, L.-G. (2009). The emerging need for adolescent-focused HIV care in South Africa. *Southern African Journal of HIV Medicine*, *10*(4), 9–11. https://doi.org/10.4102/sajhivmed.v10i4.255

Kagee, A., Coetzee, B., Du Toit, S., & Loades, M. E. (2019). Psychosocial predictors of quality of life among South Africa adolescents receiving antiretroviral therapy. *Quality of Life Research*, *28*(1), 57–65. https://doi.org/10.1007/s11136-018-2010-5

Kaur, M. (2016). Application of mixed method approach in public health research. *Indian Journal of Community Medicine*, *41*(2), 93–97.

Kemigisha, E., Zanoni, B., Bruce, K., Menjivar, R., Kadengye, D., Atwine, D., & Rukundo, G. Z. (2019). Prevalence of depressive symptoms and associated factors among adolescents living with HIV/AIDS in south western Uganda. *AIDS Care*, *31*(10), 1297–1303. https://doi.org/10.1080/09540121.2019.1566511

Kidman, R., Nachman, S., Dietrich, J., Liberty, A., & Violari, A. (2018). Childhood adversity increases the risk of onward transmission from perinatal HIV-infected adolescents and youth in South Africa. *Child Abuse & Neglect*, *79*, 98–106. https://doi.org/10.1016/j.chiabu.2018.01.028

Kidman, R., & Violari, A. (2018). Dating violence against HIV-infected youth in South Africa: Associations with sexual risk behavior, medication adherence, and mental health. *Journal of Acquired Immune Deficiency Syndromes (1999)*, *77*(1), 64–71. https://doi.org/10.1097/QAI.0000000000001569

Kim, M. H., Mazenga, A. C., Yu, X., Devandra, A., Nguyen, C., Ahmed, S., Kazembe, P. N., & Sharp, C. (2015). Factors associated with depression among adolescents living with HIV in malawi. *BMC Psychiatry*, *15*(1), 1–12. https://doi.org/10.1186/s12888-015-0649-9

Knaak, S., Mantler, E., & Szeto, A. (2017). Mental illness-related stigma in healthcare: Barriers to access and care and evidence-based solutions. *Healthcare Management Forum*, *30*(2), 111–116. https://doi.org/10.1177/0840470416679413

Koenig, L. J., Nesheim, S., & Abramowitz, S. (2011). Adolescents with perinatally acquired HIV: Emerging behavioral and health needs for long-term survivors. *Current Opinion in Obstetrics and Gynecology*, *23*(5), 321–327. https://doi.org/10.1097/GCO.0b013e32834a581b

Kruger, G., Greeff, M., & Letšosa, R. (2018). Spiritual leaders' experiences of a comprehensive HIV stigma reduction intervention. *Theological Studies*, *74*(4), 1–10. https://doi.org/10.4102/hts.v74i4.4875

Kung, T. H., Wallace, M. L., Snyder, K. L., Robson, V. K., Mabud, T. S., Kalombo, C. D., & Bekker, L.-G. (2016). South African healthcare provider perspectives on transitioning adolescents into adult HIV care. *South African Medical Journal*, *106*(8), 804–808. https://doi.org/10.7196/SAMJ.2016.v106i8.10496

Kunguma, O., Pelser, A., Tanyi, P., & Muhame, C. (2018). Social and structural vulnerability as a barrier in HIV and/or AIDS communication campaigns: Perceptions of undergraduate students at a South African tertiary institution. *Journal of Disaster Risk Studies*, *10*(1), 1–9. https://doi.org/10.4102/jamba.v10i1.407

Laher, S., & Hasseem, T. (in press). Doing systematic reviews in psychology. *South African Journal of Psychology*.

Lam, P. K., Naar-King, S., & Wright, K. (2007). Social support and disclosure as predictors of mental health in HIV-positive youth. *AIDS Patient Care and STDs*, *21*(1), 20–29. https://doi.org/10.1089/apc.2006.005

Lee, B., Chhabra, M., & Oberdorfer, P. (2011). Depression among vertically HIV-infected adolescents in northern Thailand. *Journal of the International Association of Physicians in AIDS Care*, *10*(2), 89–96. https://doi.org/10.1177/1545109710397892

Lee, B., & Oberdorfer, P. (2009). Risk-taking behaviors among vertically HIV-infected adolescents in northern Thailand. *Journal of the International Association of Physicians in AIDS Care*, *8*(4), 221–228. https://doi.org/10.1177/1545109709341082

Lee, G. M., Gortmaker, S. L., McIntosh, K., Hughes, M. D., Oleske, J. M., & Pediatric AIDS Clinical Trials Group Protocol 219C Team. (2006). Quality of life for children and adolescents: Impact of HIV infection and antiretroviral treatment. *PEDIATRICS*, *117*(2), 273–283. https://doi.org/10.1542/peds.2005-0323

Lentoor, A. G., Asante, K. O., Govender, K., & Petersen, I. (2016). Psychological functioning among vertically infected HIV-positive children and their primary caregivers. *AIDS Care*, *28*(6), 771–777. https://doi.org/10.1080/09540121.2015.1124979

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: Explanation and elaboration. *BMJ*, *339*(1), 1–27. https://doi.org/10.1136/bmj.b2700

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, Calif: Sage Publications

Louw, K.-A., Ipser, J., Phillips, N., & Hoare, J. (2016). Correlates of emotional and behavioural problems in children with perinatally acquired HIV in Cape Town, South Africa. *AIDS Care*, *28*(7), 842–850. https://doi.org/10.1080/09540121.2016.1140892

Lutgendorf, S., Antoni, M. H., Schneiderman, N., & Fletcher, M. A. (1994). Psychosocial counseling to improve quality of life in HIV infection. *Patient Education and Counseling*, *24*(3), 217–235. https://doi.org/10.1016/0738-3991(94)90066-3

Lwidiko, A., Kibusi, S. M., Nyundo, A., & Mpondo, B. C. T. (2018). Association between HIV status and depressive symptoms among children and adolescents in the southern highlands zone, Tanzania: A case-control study. *PLOS ONE*, *13*(2), 1–13. https://doi.org/10.1371/journal.pone.0193145

Macleod, J., & Smith, G. D. (2003). Psychosocial factors and public health: A suitable case for treatment? *Journal of Epidemiology & Community Health*, *57*(8), 565–570. https://doi.org/10.1136/jech.57.8.565

MacMillan, F., McBride, K. A., George, E. S., & Steiner, G. Z. (2018). Conducting a systematic review: A practical guide. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences* (1st ed., pp. 802–826). Springer Singapore. https://doi.org/10.1007/978-981-10-2779-6_113-2

Marfatia, Y., & Naswa, S. (2010). Adolescent HIV/AIDS: Issues and challenges. *Indian Journal of Sexually Transmitted Diseases and AIDS*, *31*(1), 1–10. https://doi.org/10.4103/0253-7184.68993

Maskew, M., Bor, J., MacLeod, W., Carmona, S., Sherman, G. G., & Fox, M. P. (2019). Adolescent HIV treatment in South Africa's national HIV programme: A retrospective cohort study. *The Lancet*, *6*(11), 760–768. https://doi.org/10.1016/S2352-3018(19)30234-6

Mavangira, V., & Raniga, T. (2015). Psycho-social experiences of perinatally HIV-infected adolescents residing in child and youth care centres in South Africa. *Social Work, 50*(3), 421–433. https://doi.org/10.15270/51-3-456

Mayosi, B. M., Lawn, J. E., van Niekerk, A., Bradshaw, D., Abdool Karim, S. S., & Coovadia, H. M. (2012). Health in South Africa: Changes and challenges since 2009. *The Lancet*, *380*(9858), 2029–2043. https://doi.org/10.1016/S0140-6736(12)61814-5

Meinck, F., Orkin, F., & Cluver, L. (2019). Does free schooling affect pathways from adverse childhood experiences via mental health distress to HIV risk among adolescent girls in South Africa: A longitudinal moderated pathway model. *Journal of the International AIDS Society*, *22*(3), 1–9. https://doi.org/10.1002/jia2.25262

Methley, A. M., Campbell, S., Chew-Graham, C., McNally, R., & Cheraghi-Sohi, S. (2014). PICO, PICOS and SPIDER: A comparison study of specificity and sensitivity in three search tools for qualitative systematic reviews. *BMC Health Services Research*, *14*(1), 1–10. https://doi.org/10.1186/s12913-014-0579-0

Meyer, J., Chigome, A., & Matlala, M. (2018). Mental health a public health priority. *SA Pharmaceutical Journal*, *85*(6), 46–53. https://doi.org/doi.org/10.4102/safp.v61i5.4946

Mishler, E. G. (1984). *The discourse of medicine: Dialectics of medical interviews* (1st ed.). Greenwood Publishing Group.

Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., Stewart, L. A., & PRISMA-P Group. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews*, *4*(1), 1–9. https://doi.org/10.1186/2046-4053-4-1

Moosa, M. Y. H., & Jeenah, F. Y. (2012). Treating depression in HIV-positive patients affects adherence. *Southern African Journal of HIV Medicine, 13*(3), 144–149. https://doi.org/10.4102/sajhivmed.v13i3.128

Mutumba, M., & Harper, G. W. (2015). Mental health and support among young key populations: An ecological approach to understanding and intervention. *Journal of the International AIDS Society*, *18*(2), 54–63. https://doi.org/10.7448/IAS.18.2.19429

Myer, L., Smit, J., Roux, L. L., Parker, S., Stein, D. J., & Seedat, S. (2008). Common mental disorders among HIV-infected individuals in South Africa: Prevalence, predictors, and validation of brief psychiatric rating scales. *AIDS Patient Care and STDs*, *22*(2), 147–158. https://doi.org/10.1089/apc.2007.0102

Myers, B., Petersen-Williams, P., van der Westhuizen, C., Lund, C., Lombard, C., Joska, J. A., Levitt, N. S., Butler, C., Naledi, T., Milligan, P., Stein, D. J., & Sorsdahl, K. (2019). Community health worker-delivered counselling for common mental disorders among chronic disease patients in south africa: A feasibility study. *BMJ Open*, *9*(1), 1–8. https://doi.org/10.1136/bmjopen-2018-024277

Nabunya, P., & Ssewamala, F. M. (2014). The effects of parental loss on the psychosocial wellbeing of AIDS-orphaned children living in AIDS-impacted communities: Does Gender Matter? *Children and Youth Services Review*, *43*(1), 131–137. https://doi.org/10.1016/j.childyouth.2014.05.011

Naidoo, P., Nyembezi, A., Thomas, E., Lachman, A., & Kagee, A. (2019). Perceived barriers and facilitators for healthy behaviours among parents of adolescents receiving mental health care in a public hospital in Cape Town, South Africa: A qualitative study. *Journal of Child & Adolescent Mental Health*, *31*(1), 39–50. https://doi.org/10.2989/17280583.2019.1584107

Narsi, K. (2018). Integrating mental health into primary health care services. *Mental Health Matters*, *5*(6), 28–30.

Nassen, R., Donald, K., Walker, K., Paruk, S., Vujovic, M., Duncan, W., Laughton, B., & Moos, B. (2014). Management of mental health disorders and central nervous system sequelae in HIV-positive children and adolescents. *Southern African Journal of HIV Medicine*, *15*(3), 81–96. https://doi.org/10.7196/sajhivmed.1091

National Department of Health. (2017). *National adolescent & youth health policy 2017* (pp. 1–12). National Department of Health. https://www.idealhealthfacility.org.za/docs/policies/National%20Adolescent%20and%20Youth%20Health%20Policy%202017.pdf

National Department of Health. (2018). *Psychosocial support (PSS) for children and adolescents infected and affected by HIV and AIDS* (pp. 1–30). National Department of Health. https://teampata.org/portfolio/psychosocial-support-pss-for-children-adolescents-infected-and-affected-by-hiv-and-aids/

Netshiombo, K., & Mashamba, T. (2012). Social dynamics of suicide in South Africa: A theoretical perspective. *African Journal for Physical, Health Education, Recreation and Dance (AJPHERD), 18*(3), 95–103.

Nkosi, B., Seeley, J., Ngwenya, N., Mchunu, S. L., Gumede, D., Ferguson, J., & Doyle, A. M. (2019). Exploring adolescents and young people’s candidacy for utilising health services in a rural district, South Africa. *BMC Health Services Research*, *19*(1), 1–12. https://doi.org/10.1186/s12913-019-3960-1

Norris, S. L., Holmer, H. K., Fu, R., Ogden, L. A., Viswanathan, M. S., & Abou-Setta, A. M. (2014). Clinical trial registries are of minimal use for identifying selective outcome and analysis reporting: Selective outcome reporting. *Research Synthesis Methods*, *5*(3), 273–284. https://doi.org/10.1002/jrsm.1113

Obermeyer, C. M., Baijal, P., & Pegurri, E. (2011). Facilitating HIV disclosure across diverse settings: A review. *American Journal of Public Health*, *101*(6), 1011–1023. https://doi.org/10.2105/AJPH.2010.300102

Pachter, L. M., Auinger, P., Palmer, R., & Weitzman, M. (2006). Do parenting and the home environment, maternal depression, neighborhood, and chronic poverty affect child behavioral problems differently in different racial-ethnic groups? *Pediatrics*, *117*(4), 1329–1338. https://doi.org/10.1542/peds.2005-1784

Palinkas, L. A. (2014). Qualitative and mixed methods in mental health services and implementation research. *Journal of Clinical Child & Adolescent Psychology*, *43*(6), 851–861. https://doi.org/10.1080/15374416.2014.910791

Pantelic, M., Boyes, M., Cluver, L. D., & Meinck, F. (2017). HIV, violence, blame and shame: Pathways of risk to internalized HIV stigma among South African adolescents living with HIV. *Journal of the International AIDS Society, 20*(1), 21771. https://doi.org/10.7448/IAS.20.1.21771

Pantelic, M., Casale, M., Cluver, L. D., Toska, E., & Moshabela, M. (2020). Multiple forms of discrimination and internalized stigma compromise retention in HIV care among adolescents: Findings from a South African cohort. *Journal of the International Aids Society*, *23*(5). https://doi.org/10.1002/jia2.25488

Petersen, I., Bhana, A., Myeza, N., Alicea, S., John, S., Holst, H., McKay, M., & Mellins, C. (2010). Psychosocial challenges and protective influences for socio-emotional coping of HIV+ adolescents in South Africa: A qualitative investigation. *AIDS Care*, *22*(8), 970–978. https://doi.org/10.1080/09540121003623693

Petersen, Inge, Bhana, A., Fairall, L. R., Selohilwe, O., Kathree, T., Baron, E. C., Rathod, S. D., & Lund, C. (2019). Evaluation of a collaborative care model for integrated primary care of common mental disorders comorbid with chronic conditions in South Africa. *BMC Psychiatry*, *19*(1), 1–11. https://doi.org/10.1186/s12888-019-2081-z

Petersen, Inge, & Lund, C. (2011). Mental health service delivery in South Africa from 2000 to 2010: One step forward, one step back. *South African Medical Journal*, *101*(10), 751–757. https://doi.org/10.7196/SAMJ.4841

Pillay, A. L., & Wassenaar, D. R. (2007). Managing suicidal adolescents. *Continuing Medical Education*, *25*(5), 216–218.

Reid, E. K., Tejani, A. M., Huan, L. N., Egan, G., O'Sullivan, C., Mayhew, A. D., & Kabir, M. (2015). Managing the incidence of selective reporting bias: A survey of Cochrane review groups. *Systematic Reviews*, *4*(1), 1–8. https://doi.org/10.1186/s13643-015-0070-y

Reupert, A. E., J Maybery, D., & Kowalenko, N. M. (2013). Children whose parents have a mental illness: Prevalence, need and treatment. *Medical Journal of Australia*, *199*(3). https://doi.org/10.5694/mja11.11200

Roser, M., & Ritchie, H. (2020). HIV/AIDS. *Our World in Data*. https://ourworldindata.org/hiv-aids

Saluja, G., Iachan, R., Scheidt, P. C., Overpeck, M. D., Sun, W., & Giedd, J. N. (2004). Prevalence of and risk factors for depressive symptoms among young adolescents. *Archives of Pediatrics & Adolescent Medicine*, *158*(8), 760–765. https://doi.org/10.1001/archpedi.158.8.760

Schierenbeck, I., Johansson, P., Andersson, L., & van Rooyen, D. (2013). Barriers to accessing and receiving mental health care in Eastern Cape, South Africa. *Health and Human Rights*, *15*(2), 110–123.

Schneider, M., Baron, E., Breuer, E., Docrat, S., Honikman, S., Onah, M., Sorsdahl, K., Westhuizen, C. V. der, Lund, C., Kagee, A., Skeen, S., & Tomlinson, M. (2016). Integrating mental health into South Africa's health system: Current status and way forward. *South African Health Review*, *2016*(1), 153–163.

Selcuk, A. A. (2019). A guide for systematic reviews: PRISMA. *Turkish Archives of Otorhinolaryngology*, *57*(1), 57–58. https://doi.org/10.5152/tao.2019.4058

Shabani, O., Moleki, M. M., & Thupayagale-Tshweneagae, G. G. B. (2018). Individual determinants associated with utilisation of sexual and reproductive health care services for HIV and AIDS prevention by male adolescents. *Curationis*, *41*(1), 1–6. https://doi.org/10.4102/curationis.v41i1.1806

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, *22*(2), 63–75. https://doi.org/10.3233/EFI-2004-22201

Sherr, L., Cluver, L. D., Betancourt, T. S., Kellerman, S. E., Richter, L. M., & Desmond, C. (2014). Evidence of impact: Health, psychological and social effects of adult HIV on children. *AIDS*, *28*(3), 251–259. https://doi.org/10.1097/QAD.0000000000000327

Sherr, L., Cluver, L. D., Toska, E., & He, E. (2018). Differing psychological vulnerabilities among behaviourally and perinatally HIV infected adolescents in South Africa – Implications for targeted health service provision. *AIDS Care, 30*(2), 92–101. https://doi.org/10.1080/09540121.2018.1476664

Slogrove, A. L., & Sohn, A. H. (2018). The global epidemiology of adolescents living with HIV: Time for more granular data to improve adolescent health outcomes. *Current Opinion in HIV and AIDS*, *13*(3), 170–178. https://doi.org/10.1097/COH.0000000000000449

Snilstveit, B., Oliver, S., & Vojtkova, M. (2012). Narrative approaches to systematic review and synthesis of evidence for international development policy and practice. *Journal of Development Effectiveness*, *4*(3), 409–429. https://doi.org/10.1080/19439342.2012.710641

Sohn, A. H., & Hazra, R. (2013). The changing epidemiology of the global paediatric HIV epidemic: Keeping track of perinatally HIV-infected adolescents. *Journal of the International AIDS Society*, *16*(1), 1–8. https://doi.org/10.7448/IAS.16.1.18555

South African Government. (2002). *Mental health care act 17 of 2002*. South African Government. https://www.gov.za/documents/mental-health-care-act

South African Government. (2014, October 23). *National mental health policy framework and strategic plan 2013-2020*. Health-e. https://health-e.org.za/2014/10/23/policy-national-mental-health-policy-framework-strategic-plan-2013-2020/

Southern African HIV Clinicians Society. (2013). Management of mental health disorders in HIV-positive patients. *Southern African Journal of HIV Medicine, 14*(4), 155–165. https://doi.org/10.7196/sajhivmed.995

Southern African HIV Clinicians Society. (2014). Management of mental health disorders and central nervous system sequelae in HIV-positive children and adolescents.

Southern African Journal of HIV Medicine, *15*(3), 81–96. https://doi.org/10.7196/sajhivmed.1091

Spedding, M. F., Stein, D. J., & Sorsdahl, K. (2014). Task-shifting psychosocial interventions in Public Mental Health: A review of the evidence in the South African context. *South African Health Review*, *2014/2015*(1), 73–87.

STATS SA. (2019). *Statistical release: Mid-year population estimates* (Statistical Release Mid-year population estimates; Mid-Year Population Estimates, pp. 1–30). Statistics South Africa.

Stein, D. J., Seedat, S., Emsley, R. A., & Olley, B. O. (2005). HIV/AIDS in Africa — A role for the mental health practitioner? *South African Journal of Psychiatry*, *11*(1), 2. https://doi.org/10.4102/sajpsychiatry.v11i1.88

ten Ham-Baloyi, W., & Jordan, P. (2016). Systematic Review as a research method in post-graduate nursing education. *Health SA Gesondheid*, *21*(942), 120–128. https://doi.org/10.1016/j.hsag.2015.08.002

Teo, A. R., Choi, H., & Valenstein, M. (2013). Social relationships and depression: Ten-year follow-up from a nationally representative study. *PLoS ONE*, *8*(4), 1–9. https://doi.org/10.1371/journal.pone.0062396

Thom, R. (2009). Common mental health disorders in people living with HIV/AIDS. *The South African Journal of HIV Medicine*, 8–13.

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, *8*(1), 1–10. https://doi.org/10.1186/1471-2288-8-45

Toska, E., Cluver, L. D., Boyes, M. E., Isaacsohn, M., Hodes, R., & Sherr, L. (2017). School, supervision and adolescent-sensitive clinic care: Combination social protection and reduced unprotected sex among HIV-positive adolescents in South Africa. *AIDS and Behavior*, *21*(9), 2746–2759. https://doi.org/10.1007/s10461-016-1539-y

Toska, E., Cluver, L., Orkin, M., Bains, A., Sherr, L., Berezin, M., & Gulaid, L. (2019). Screening and Supporting Through Schools: Educational experiences and needs of adolescents living with HIV in a South African cohort. *BMC Public Health*, *19*(1), 1–10. https://doi.org/10.1186/s12889-019-6580-0

Toth, G., Mburu, G., Tuot, S., Khol, V., Ngin, C., Chhoun, P., & Yi, S. (2018). Social-support needs among adolescents living with HIV in transition from pediatric to adult care in Cambodia: Findings from a cross-sectional study. *AIDS Research and Therapy*, *15*(1), 8. https://doi.org/10.1186/s12981-018-0195-x

Uman, L. S. (2011). Systematic reviews and meta-analyses. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, *20*(1), 57–59.

UNAIDS. (2014). *90-90-90: An ambitious treatment target to help end the AIDS epidemic* (pp. 1–40). UNAIDS. https://www.unaids.org/sites/default/files/media_asset/90-90-90_en.pdf

UNAIDS. (2018). *Mental health and HIV/AIDS – promoting human rights, an integrated and person-centred approach to improving ART adherence, well-being and quality of life* (pp. 1–39) [Thematic Segment]. UNAIDS. https://www.unaids.org/sites/default/files/media_asset/20181128_UNAIDS_PCB43_CRP2.pdf

UNAIDS. (2019). *Global HIV & AIDS statistics—2019 Fact Sheet* [Fact Sheet]. UNAIDS. https://www.unaids.org/en/resources/fact-sheet

Van Vilsteren, M., Haffejee, S., Patel, R., & Bowman, B. (2011). An exploratory study of psychological and developmental issues facing HIV and AIDS affected adolescents living in a residential care facility. *Journal of Child & Adolescent Mental Health*, *23*(1), 43–51. https://doi.org/10.2989/17280583.2011.594251

Van Wijk, C. (2013). Screening for HIV-associated neurocognitive disorders (hands) in South Africa: A caution against uncritical use of comparative data from other developing countries. *Southern African Journal of HIV Medicine*, *14*(1), 17–19. https://doi.org/10.7196/sajhivmed.855

Van Wyk, B. E., & Davids, L. C. (2019b). Challenges to HIV treatment adherence amongst adolescents in a low socio-economic setting in Cape Town. *Southern African Journal of HIV Medicine*, *20*(1), 1–7. https://doi.org/10.4102/sajhivmed.v20i1.1002

Ventevogel, P. (2014). Integration of mental health into primary healthcare in low-income countries: Avoiding medicalization. *International Review of Psychiatry*, *26*(6), 669–679. https://doi.org/10.3109/09540261.2014.966067

Vu, G. T., Tran, B. X., Hoang, C. L., Hall, B. J., Phan, H. T., Ha, G. H., Latkin, C. A., Ho, C. S. H., & Ho, R. C. M. (2020). Global research on quality of life of patients with HIV/AIDS: Is it socio-culturally addressed? *International Journal of Environmental Research and Public Health*, *17*(6), 2127. https://doi.org/10.3390/ijerph17062127

West, N., Schwartz, S., Mudavanhu, M., Hanrahan, C., France, H., Nel, J., Mutunga, L., Bernhardt, S., Bassett, J., & Van Rie, A. (2019). Mental health in South African adolescents living with HIV. *AIDS Care*, *31*(1), 117–124. https://doi.org/10.1080/09540121.2018.1533222

Whetten, K., Reif, S., Whetten, R., & Murphy-McMillan, L. K. (2008). Trauma, mental health, distrust, and stigma among HIV-positive persons: Implications for effective care. *Psychosomatic Medicine*, *70*(5), 531–538. https://doi.org/10.1097/PSY.0b013e31817749dc

Williams, L. D., Aber, J. L., & SIZE Research Group. (2018). The multilevel relationships of HIV-related stigma to child and caregiver mental health among HIV-affected households in South Africa. *American Journal of Community Psychology*, *63*(1–2), 3–16. https://doi.org/10.1002/ajcp.12280

Winslow, C. E. (1920). The untilled fields of public health. *Science*, *51*(1306), 23–33. https://doi.org/10.1126/science.51.1306.23

Woollett, N., Cluver, L., Bandeira, M., & Brahmbhatt, H. (2017). Identifying risks for mental health problems in HIV positive adolescents accessing HIV treatment in Johannesburg. *Journal of Child & Adolescent Mental Health*, *29*(1), 11–26. https://doi.org/10.2989/17280583.2017.1283320

Woollett, N., Peter, J., Cluver, L., & Brahmbhatt, H. (2017). Enrolling HIV-positive adolescents in mental health research: A case study reflecting on legal and ethical complexities. *South African Medical Journal*, *107*(8), 679–683. https://doi.org/10.7196/SAMJ.2017.v107i8.12409

World Health Organization. (n.d.). *Recognizing adolescence*. World Health Organization. Retrieved March 8, 2020, from https://apps.who.int/adolescent/second-decade/section2/page1/recognizing-adolescence.html

World Health Organization. (2001). *World health report 2001* (pp. 1–178). World Health Organization. https://www.who.int/whr/2001/en/whr01_en.pdf?ua=1

World Health Organization. (2003). *HIV-infected women and their families: Psychosocial support and related issues* (pp. 1–57). World Health Organization. https://www.who.int/hiv/pub/prev_care/en/PsychosocialSupport.pdf?ua=1

World Health Organization. (2012). *Programme on mental health: WHOQOL user manual* (pp. 1–106). World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/77932/WHO_HIS_HSI_Rev.2012.03_eng.pdf?sequence=1&isAllowed=y&ua=1

World Health Organization. (2017a). *Mental health atlas: 2017* (pp. 1–72). World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/272735/9789241514019-eng.pdf

World Health Organization. (2017b). *MhGAP intervention guide for mental, neurological and substance-use disorders in non-specialized health settings.* (2nd ed.). World Health Organization. https://www.who.int/publications-detail/mhgap-intervention-guide---version-2.0

World Health Organization. (2020). *Constitution of the World Health Organization* (pp. 1–245) [Constitution of the World Health Organization]. World Health Organization. http://apps.who.int/gb/bd/pdf_files/BD_49th-en.pdf#page=7

Zanoni, B. C., Archary, M., Buchan, S., Katz, I. T., & Haberer, J. E. (2016). Systematic review and meta-analysis of the adolescent HIV continuum of care in South Africa: The cresting wave. *BMJ Global Health*, *1*(3), 1–9. https://doi.org/10.1136/bmjgh-2015-000004

Appendix A

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
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.	3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	7
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	20
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.	32
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.	22
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.	24
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	23
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).	24
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.	27
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	N/A
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.	27
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	N/A
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.	31

PRISMA 2009 Checklist

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).	N/A
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	N/A
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.	26
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.	34
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).	28
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.	N/A
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	53
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	N/A
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	N/A
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).	63
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).	68
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	69
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.	N/A

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

CASP
Critical Appraisal
Skills Programme

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Summertown Pavilion, Middle
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CASP Checklist: 10 questions to help you make sense of a **Qualitative** research

How to use this appraisal tool: Three broad issues need to be considered when appraising a qualitative study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

Critical Appraisal
Skills Programme

Paper for appraisal and reference: ....

Section A: Are the results valid?

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

Comments:

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

Comments:

Is it worth continuing?

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)

Comments:

CASP
Critical Appraisal
Skills Programme

4. Was the recruitment strategy appropriate to the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

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)

Comments:

5. Was the data collected in a way that addressed the research issue?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the setting for the 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 are 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

Comments:

CASP
Critical Appraisal
Skills Programme

6. Has the relationship between researcher and participants been adequately considered?	Yes ☐ Can't Tell ☐ No ☐	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

Comments:

Section B: What are the results?

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

Comments:

CASP
Critical Appraisal
Skills Programme

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

Comments:

9. Is there a clear statement of findings?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider whether
- If the findings are explicit
- If there is adequate discussion of the evidence both for and against the researcher's 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

Comments:

CASP
Critical Appraisal
Skills Programme

Section C: Will the results help locally?

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

Comments:

Appendix C

1. Was there a clear statement of the aims of the research?

☐Yes ☐Can't tell ☐No

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

Consider: If the research seeks to examine a relationship between variables or comparison of groups. Is quantitative research the right methodology for addressing the research goal?

Were all the participants accounted for in the results and the conclusion?

☐Yes ☐Can't tell ☐No

Is it worth continuing?

Detailed questions:

3. Was the research design appropriate to address the aims of the research?

☐Yes ☐Can't tell ☐No

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

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

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?

7. Have ethical issues been taken into consideration?

☐Yes ☐Can't tell ☐No

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

8. Was the correct statistical technique used to analyse the data

☐Yes ☐Can't tell ☐No

Consider: Was descriptive data provided? Was the sample size large enough for the statistical technique carried out? Was basic assumptions of the statistical test utilised met? Were both significant and insignificant results reported? Did the statistical technique used effectively answer the research question?

9. Was the data analysis sufficiently rigorous?

☐Yes ☐Can't tell ☐No

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?

10. Were psychometric properties discussed?

☐Yes ☐Can't tell ☐No

Consider: were reliability and validity of the instruments used discussed or analysed

11. Is there a clear statement of findings?

☐Yes ☐Can't tell ☐No

Consider: If the findings are explicit. If there is adequate discussion of the evidence both for and against the researcher's arguments. If the findings are discussed in relation to the original research question

12. How valuable is the research?

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