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Review

A Systematic Review Exploring the Psychosocial Factors Affecting Adolescent Access to HIV Treatment Services

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Abstract: Context: Despite the global realization that increasing access to antiretroviral treatment promotes significant bio-medical gains amongst adolescents living with HIV (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 that 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 that 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. **Conclusions**: 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.

Keywords: adolescents; HIV; psychosocial health; South Africa; systematic review

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1. Introduction

Despite the consensus that 'increasing access to antiretroviral therapy (ART) promotes significant bio-medical gains' [1], the psychosocial impact of HIV on adolescents living with HIV (ALHIV) has been overlooked in the Global South [2,3]. Research conducted with ALHIV has primarily occurred in the Global North, which has vastly different epidemiological contexts to that of the Global South [4–7]. Research findings on ALHIV populations from developed countries cannot be extrapolated to, or compared with African populations where ALHIV are exposed to multiple additional risks and vulnerabilities [8]. In Sub-Saharan Africa (SSA), limited research is available on ALHIV, mental health outcomes, and the prevalence of mental, neurological, and substance use

(MNS) disorders [6,8,9]. From the research available, there appears to be an inconsistency regarding the findings on mental health amongst ALHIV [9,10]. Furthermore, due to the nature of those studies being either entirely qualitative or quantitative, their results are not entirely transferable or generalizable to other national contexts within the broader SSA context [5,8,10,11]. Nevertheless, the available research on ALHIV in SSA has demonstrated the significant experience of internalizing and externalizing mental health symptoms [12]. In South Africa, ALHIV often present with clinically distinct psychosocial vulnerabilities which differ from that of their HIV-positive child and adult counterparts when accessing HIV treatment services [13,14]. ALHIV who reside in South Africa are susceptible to a number of biological, behavioural, social, and economic vulnerabilities [13–16] that often result in their sub-optimal utilization of HIV testing services, timely initiation of ART, successful adherence to ART, and retention in HIV care programmes [7,17,18]. Consequently, ALHIV, as a collective encompassing vertically/perinatally infected ALHIV (VALHIV) and horizontally/behaviourally-infected ALHIV (HALHIV) [5,19] require specialized approaches designed to promote the servicing of their psychosocially-informed healthcare needs.

This paper aims to identify, discuss, and provide insight into the localized psychosocial factors affecting ALHIV accessing HIV treatment services in South Africa to inform future research endeavours, policy prescriptions, and practice guidelines through a systematic review of empirical research. 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) [20]. For this paper, psychosocial factors will, from this point onward, be defined as "any exposure that may influence a health outcome through a social or psychological mechanism" [21] (p. 565). In addition to this paper's intention to promote, inform, and facilitate engagement on the topic focus, the systematic review enabled the consolidation and synthesis of research conducted in the South African context, ensuring mental health and quality of life (QoL) of ALHIV were considered. QoL—an individual'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" [22] (p. 11)—is an indicator of one's psychosocial health [23] and is associated with health outcomes [24].

2. Materials and Methods

2.1. Study Setting

South Africa's public healthcare system, informed by the World Health Organisation's (WHO) integrative public health model, necessitates the servicing of health concerns within primary care facilities through the adoption of the National Strategic Plan (NSP) [25]. The NSP included strategies envisioned to facilitate the provision of home-based care for both those infected and affected by the HIV epidemic in South Africa through the delivery of ART by accredited facilities. However, the South African government's skewed institutional and social assumptions enabled the stagnated implementation of inefficient policies, resulting in the inadequate structuring of district health systems and primary care facilities across the country [26]. This coupled with shortages in health specialists, has given rise to an extensive treatment gap which is reflective of South Africa's inefficiently informed and partially integrative public health model. Nevertheless, South Africa's primary healthcare system remains embedded within a biomedical model which prioritises physical health over mental health. Nevertheless, South Africa's healthcare system, characterized by the provision of inequitable healthcare rooted in structural, social, and economic inequalities that are of both a historical and contemporary nature [27,28], has had a profound impact on the quality of health and well-being of adolescents. Adolescents in South Africa frequently experience several structural, familial, systemic, and social barriers that negatively affect their utilization and subsequent experience of healthcare services [29–31]. For example, 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, as well as judgmental attitudes and breaches of patient confidentiality from health providers [32–35] often resulted in ALHIV having negative experiences within the healthcare context.

Despite South Africa's healthcare system being fragmented, inadequately resourced, and notably overburdened [27,28,36], government-sanctioned policy prescriptions (i.e., Child Care Amendment Act of 1996 [37], the Mental Health Care Act of 2002 [38] and the 2013–2020 Mental Health Policy Framework and Strategic Plan [39] (SA MH Policy)) highlighted government's commitment to addressing unequal access to mental health services [28,36,40]. Notwithstanding South Africa's legislative commitments, the WHO Atlas survey [41] highlighted the paucity of mental health resources in South Africa [42]; a mere 3% of the total health budget was directed toward mental healthcare in 2017 [41]. In addition, the provision of mental healthcare to adolescents and their subsequent experience of such services have been hindered by availability, accessibility, acceptability, and quality of mental health service delivery issues as a whole [43–45].

2.2. Information Source

On 1 August 2020, three multidisciplinary databases (i.e., ProQuest, Web of Science, EBSCO) and one South African database (i.e., Sabinet Online) were accessed to enhance the identification of studies that adhered to the inclusion criteria. Prior to beginning this systematic review, a PRISMA-informed protocol [46] was registered with PROSPERO (https://www.crd.york.ac.uk/PROSPERO/display_record.php?RecordID=199470) (accessed on 5 August 2022), and a final report has been published on their website (https://www.crd.york.ac.uk/PROSPEROFILES/199470_PROTOCOL_20210617.pdf) (accessed on 5 August 2022).

2.3. Search Strategy

Through a purposive sampling technique, the SPIDER search strategy adapted from the (quantitative) PICO tool [4] enabled the definition of the sample (S), the phenomenon of interest (PI), the design (D), the evaluation (E), and the research type (R) required to formulate a systematic search strategy to answer the qualitative or mixed-method research question [47,48].

Full-text empirical articles were included in the sample on the following basis: (1) the identified studies included HIV-positive adolescents ($\geq$10 years old and $\leq$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. In addition, it is noted that articles with both positive and negative outcomes were included to reduce publication bias. Moreover, articles written in English and published between 1 January 2000 and 31 July 2020 were included in the sample 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 concerning the specific constructs or variables being assessed within the sample of articles. Similarly, grey literature was excluded based on not being peer-reviewed as peer-reviewed research is characteristically considered more rigorous [49].

Search terms that guided the identification of relevant articles in the sample were critically appraised by a senior librarian and research supervisor at the University of the Witwatersrand. 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*".

Search terms were combined using Boolean operators (i.e., 'OR', 'AND'); wild cards (i.e., '*') were used to increase both the specificity (i.e., the ability to identify relevant papers) and sensitivity (i.e., the ability not to identify many irrelevant articles) of the search as per Boland et al. [50].

Once studies were retrieved from the databases, their titles, and abstracts (after duplicates removed, n = 1079) were screened by a primary reviewer (i.e., the first author of this paper) to assess their eligibility. Studies that were incompatible with the 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 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.

2.4. Quality of the Included Studies

Articles in the final sample (n = 18) were assessed for potential bias. The quality of quantitative studies was evaluated through their reliability, validity, and objectivity. Qualitative studies were evaluated 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 [49] (see Appendix A). Eligible qualitative studies (n = 2) were assessed via the Critical Appraisal Skills Programme (CASP) Qualitative Checklist Tool [49] (see Appendix B).

Table 1 summarizes the results of the quality assessment and how the included articles performed on the CASP tools. All the included studies were high-quality as their risk of bias was minimal—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 scored between 10/11 and 11/11 on the quantitative CASP tool.

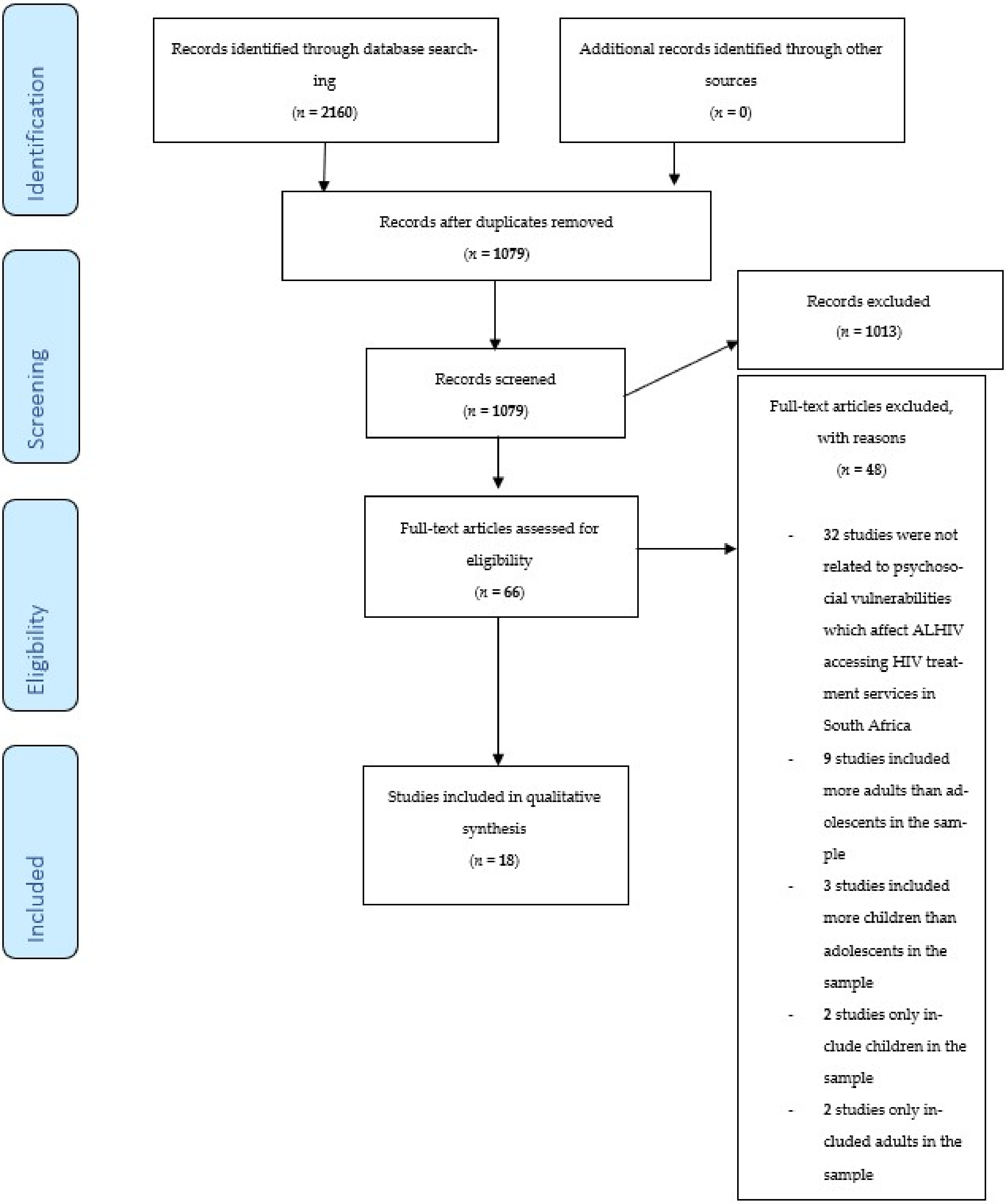

Figure 1. PRISMA flow diagram.

2.5. Data Extraction

Relevant data providing an overview of the studies included in the sample were extracted [51], including the year of publication, the study design, the sample size, sample age range, sample gender, the setting from where the sample was drawn, and CASP score. Moreover, information about the psychosocial constructs under investigation and the measures used to explore such psychosocial constructs were also obtained [47,48]. Finally, it is noted that each study within the sample was downloaded into a reference manager (i.e., Zotero), which enabled their assessment by specific critical appraisal tools and data analytical techniques.

2.6. Data Analysis and Synthesis

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 contained in the articles lent itself more towards a thematic synthesis of major themes.

The employment of a thematic synthesis method developed by Thomas and Harden [52] was used to analyse the studies through three stages that include: "the coding of text line-by-line . . . , the development of descriptive themes . . . , and the generation of analytic themes . . . " [52] (p. 1). The development of descriptive themes and analytic themes within the thematic synthesis was informed by the reflexive thematic analysis findings as developed by Braun et al. [53]. First, the primary reviewer familiarized himself with the data through reading and rereading the textual data [53]. Second, codes were generated through an inductive orientation. Third, candidate themes were developed by collating codes from the dataset [53]. Fourth, candidate themes were thematically mapped to visually establish potential themes and their associated subthemes [53]. Fifth, candidate themes were revised and defined to ensure that themes and theme names clearly, comprehensively, and concisely represented the data [53]. Sixth, the primary reviewer critically appraised candidate themes to establish consistency throughout the analysis; a report containing the findings was produced concisely, non-repetitively and coherently [53].

2.7. Ethical Statement

This research is that of a systematic review that used published empirical articles in the public domain. Thus, ethical clearance was not required—this research did not involve data collection from human participants. However, an ethics waiver (MASPR/20/13W) was obtained for this study from the University of the Witwatersrand's Human Research Ethics Committee.

Table 1. Quality Assessment of the Included Articles; Note. Y = Yes; N = No; N/A = Not applicable.

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
Mavangira and Raniga [54]	Y	Y	Y	Y	Y	Y	Y	N/A	Y	N/A	Y	Y	10
van Wyk and Davids [55]	Y	Y	Y	Y	Y	Y	Y	N/A	Y	N/A	Y	Y	10
Boyes et al. [56]	Y	Y	N	Y	Y	N/A	Y	Y	Y	Y	Y	Y	10
Brittain et al. [57]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Cluver, Pantelic, et al. [58]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Cluver, Meinck, et al. [59]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Cluver et al. [60]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Coetzee et al. [61]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Crowley et al. [62]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Hoare et al. [63]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	N	Y	Y	10
Kagee et al. [64]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Kidman et al. [65]	Y	Y	N	Y	Y	N/A	Y	Y	Y	N	Y	Y	9
Kidman and Violari [66]	Y	Y	N	Y	Y	N/A	Y	Y	Y	N	Y	Y	9
Louw et al. [67]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	N	Y	Y	10
Pantelic et al. [68]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Pantelic et al. [69]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11
Toska et al. [70]	Y	Y	N	Y	Y	N/A	Y	Y	Y	N	Y	Y	9
Woollett et al. [71]	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	Y	11

3. Results

3.1. Descriptive Overview of the Included Studies

Table 2 provides a descriptive overview of the articles included in this systematic review. All 18 of the studies were published between 2015 and 2020. Two of the included studies [54,55] were qualitative, and 16 were of a quantitative nature [56–71]. Among the two qualitative studies, Mavangira and Raniga [54] used an exploratory, cross-sectional, descriptive, interpretive research design, whilst Van Wyk and Davids [55] used an exploratory cross-sectional research design. Among the quantitative studies, longitudinal, exploratory, descriptive, and correlational research designs were employed by Cluver et al. [60], Hoare et al. [63], and Pantelic et al. [70]. Boyes et al. [56], Cluver, Meinck et al., [59], Cluver, Pantelic et al. [58], Coetzee et al. [61], Crowley et al. [62], Kagee et al. [64], Kidman et al. [65], Kidman and Violari [66], Louw et al. [67], Pantelic et al. [68], Toska et al. [70], and Woollett et al. [71] made use of cross-sectional, exploratory, descriptive, and correlational research designs. Brittain et al. [57] and Hoare et al. [63] used two cohorts comprised of HIV-positive and HIV-negative individuals. The sample sizes of the included qualitative studies ranged from eight [54] to 15 [55]. In contrast, the sample sizes of the included quantitative studies ranged from 108 [67] to 1063 [60]. Participants were either entering adolescence or were in the adolescent period at data collection within most studies. Despite this, three studies included children who were older than six years of age [57,63,67], whilst two studies included individuals who were older than 19 but younger than 24 years of age [65,66]. The studies that included children, adults, and adolescents were included in this systematic review where most of the sample included adolescents. Most participants across the studies were female—except for the study conducted by Brittain et al. [57]. The included studies were conducted in three provinces of South Africa: seven were conducted in the Western Cape [55,57,61–64,67], seven were conducted in the Eastern Cape [56,58–60,68–70], and four were conducted in Gauteng [54,65,66,71]. All the studies, excluding Mavangira and Raniga [54] who recruited their sample from a child and youth care centre, recruited their samples from healthcare facilities providing ART. Additionally, all samples recruited within the included studies represent a particular target population (i.e., South African ALHIV accessing HIV treatment services in South Africa).

Table 2. Descriptive Overview of the Included Articles.

Article	Study Design	Sample Size	Sample Age Range	Sample Gender	Setting
Mavangira and Raniga [54]	Qualitative, exploratory, cross-sectional, descriptive, interpretive	*n* = 8	14–17 years old	Female and Male	Child and youth care centre in Gauteng
Van Wyk and Davids [55]	Qualitative, exploratory, cross-sectional	*n* = 15	10–19 years old	Female and Male	5 paediatric facilities in the Western Cape providing adolescent antiretroviral therapy
Boyes et al. [56]	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

Table 2. *Cont.*

Article	Study Design	Sample Size	Sample Age Range	Sample Gender	Setting
Brittain et al. [57]	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, Pantelic, et al. [58]	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, Meinck, et al. [59]	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. [60]	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. [61]	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. [62]	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. [63]	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. [64]	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 134	11–18 years old	Female and Male	Facilities in the Western Cape providing adolescent antiretroviral therapy
Kidman et al. [65]	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 250	13–24 years old	Female and Male	Paediatric facility in Gauteng providing adolescent antiretroviral therapy
Kidman and Violari [66]	Quantitative, exploratory, cross-sectional, descriptive, correlational	*n* = 129	13–24 years old	Female	Paediatric facility in Gauteng providing adolescent antiretroviral therapy

Table 2. *Cont.*

Article	Study Design	Sample Size	Sample Age Range	Sample Gender	Setting
Louw et al. [67]	Quantitative, exploratory, cross-sectional, descriptive, correlational	$n = 108$	6–16 years old	Female and Male	Facilities in the Western Cape providing adolescent antiretroviral therapy
Pantelic et al. [68]	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. [69]	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. [70]	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
Woollett et al. [71]	Quantitative, exploratory, cross-sectional, descriptive, correlational	$n = 343$	13–19 years old	Female and Male	Primary healthcare clinic in Gauteng providing adolescent antiretroviral therapy

3.2. Quantitative Measures under Investigation

Psychosocial health screening tools, in conjunction with socio-demographic questionnaires and adolescent self-report measures were employed by all authors. Table 3 provides an overview of the psychosocial constructs and quantitative measures used within the included articles. The quantitative articles measured the following: (1) health-related quality of life with the KIDSCREEN-27 scale [62], (2) QoL with the Paediatric QoL Inventory—short form [64], (3) ART adherence with an adherence questionnaire adapted from WHO tools [66], the medication adherence questionnaire [58,69], the adolescent HIV Self-Management Questionnaire [62], the adapted adult AIDS Clinical Trials Group adherence questionnaire [62], and the patient medication adherence questionnaire [60,69], (4) parenting and parental monitoring/supervision with the Alabama Parenting Questionnaire—Short form [56,60], (5) parent-child communication with the Child-Parent Communication Apprehension Scale [56], (6) Knowledge of HIV status was determined through healthcare provider report and confirmation by caregiver report [56,70], (7) age at first disclosure with a self-report question [56], (8) disclosure of HIV status to others with the HIV disclosure questionnaire [66], (9) adverse childhood experiences with the Adverse Childhood Experiences—International Questionnaire [65,66], (10) bullying victimization with the Social and Health Assessment Peer Victimization Scale [56], (11) violence victimization (i.e., physical, emotional, and sexual abuse) with adapted intimate partner violence items [61], the UNICEF Measures for National-level Monitoring of Orphans and Other Vulnerable Children [56,58–60,68,71], the Juvenile Victimization Scale [58–60,68], the Juvenile Violence Questionnaire [56], the Social and Health Assessment Peer Victimization Scale [59,68], the adapted version of WHO Violence against Women Instrument [66], and the child exposure to community violence checklist [60,71], (12) discrimination in the healthcare setting with a self-report question [69], (13) negative clinic interactions with items adapted from the PREPARE Trial [56], (14) HIV stigma with the HIV-stigma scale for adolescents living with HIV [56,68], the stigma-by-association scale [69], and a self-report question [65], (15) HIV-related disability with the adapted version of The International Classification of Functioning, Disability and Health measure [68], (16) self-efficacy with the General Self-Efficacy Scale [56], (17) motivation with Children's Motivation Scale [63], (18) self-concept with the Beck Youth Motivation Inventory [63], (19) cognitive performance with a battery of tests assessing neuropsychological domains that include processing speed, attention, visual spatial ability, visual memory and executive functioning (the specific battery of neuropsychological tests used was not stated) [67], (20) ADHD with the Conner's parent's rating scale [63], (21) internalizing and externalizing behaviour with the Child Behaviour Checklist [63], (22) emotional and behavioural problems with the Child Behaviour Checklist CBCL/6–18 version [64], (23) anger was measured with the Beck Youth Anger Inventory [63], (24) disruptive behaviour with the Beck Youth Disruptive Behaviour Inventory [63], (25) conduct problems with the Strengths and Difficulties Questionnaire [56], (26) fatigue with the Chalder Fatigue Scale [61,64], (27) insomnia with the Athens Insomnia Scale [61,64], (28) pain with the Visual Analogue Pain Scale [64], (29) suicidality with the MINI International Psychiatric Interview for Children and Adolescents Suicide Scale [71] and the Teen Talk questionnaire [57], (30) anxiety with the Revised Children's Manifest Anxiety Scale—Short Form [56,60,61,71] and the Beck Youth Anxiety Inventory [63], (31) depression with the Beck Depression Inventory [65,66], Child Depression Inventory—Short Form [56,60,68,71], the Revised Children's Depression Scale [61,64], and the Beck Youth Depression Inventory [63], (32) PTSD with the Child PTSD Checklist—Short Form [56,60,71], (33) substance use/abuse with the adolescent version of the CRAFFT Screening Questionnaire for alcohol and substance abuse [65,66], a 6–panel urine toxicology screen [57], the Child Behaviour Checklist [60,63,67], and the WHO global school-based health survey [60], (34) sexual activity with the adapted 'Teen Talk' questionnaire [57], the South African National Survey of HIV and Risk Behaviour [60,71], the Youth Questionnaire for persons aged 15–24 years [62], measures from the South African Demographic and Health Survey [66,72], and self-report questions [65,70], (35) access to adolescent-sensitive care clinics with self-report questions [70], (36) relationship to caregiver with a self-report question [57,62,65–67], (37) caregiver depression with the Centre for Epidemiologic Studies-Depression Scale [63,67], (38) caregiver social support with the Family Support Scale [63,67], (39) caregiver access to resources with the Family Resources Scale [63,67], (40) poverty with items from the South African National Food Consumption Survey [71] and self-report questions [56–58,60,65,66,69], (42) household crowding with a self-report question [67], (42) past-week food security with items from the National Food Consumption Survey [70], (43) orphanhood status with a self-report question [56,58–60,62,63,65,66,71], (44) urban/rural household location with a self-report question [56,58,60,68,70], (45) school progression with the Strengths and Difficulties Questionnaire [60] and a self-report question [57,60,62,63], (46) access to school with items of school enrolment from Census South Africa [60] and a self-report question [57,70,71], (47) access to a school feeding scheme with a self-report question [60,70], (48) access to a safe school with the Social and Health Assessment [60], (49) access to a clinic support group with a self-report question [56,60,70], (50) access to a government cash transfer with a self-report question [58,60,70], (51) access to sufficient clothing with an item from the South African Social Attitudes Survey [70], (52) access to social support with the Medical Outcome Study Social Support Survey [56], (53) having a surviving and healthy caregiver with a self-report question [58], (54) having at least one employed person in the household with a self-report question [58,63], (55) access to three meals a day with a self-report question [58,60], and (56) access to free school was measured with a self-report question [58,70].

Table 3. Psychosocial Constructs and Quantitative Measures Under Investigation.

Article	Psychosocial Constructs Investigated	Measures Used
Mavangira and Raniga [54]	- Psychosocial experiences - Coping strategies	- N/A
Van Wyk and Davids [55]	- Barriers to ART adherence	- N/A
Boyes et al. [56]	- 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 - Urban/rural household location	- 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 - General Self-Efficacy Scale - Self-report questions
Brittain et al. [57]	- ART adherence - Substance use/abuse - Sexual activity - Bullying others - Suicidality - Relationship to caregiver - Poverty - School progression - Access to school	- 'Teen Talk' Questionnaire - six-panel urine toxicology screen - Self-report questions
Cluver, Pantelic, et al. [58]	- 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

Table 3. *Cont.*

Article	Psychosocial Constructs Investigated	Measures Used
Cluver, Meinck, et al. [59]	- 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 - Past-year witnessing of violence in community settings - Past-year verbal violence in the clinic - Orphanhood	- 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
Cluver et al. [60]	- 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 - No community violence - No emotional or physical abuse	- 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 - 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. [61]	- Fatigue - Insomnia - Depression - Anxiety	- Chalder Fatigue Scale - Athens Insomnia Scale - Revised Children's Anxiety and Depression Scale

Table 3. *Cont.*

Article	Psychosocial Constructs Investigated	Measures Used
Crowley et al. [62]	- 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. [63]	- Caregiver depression - Family resources, support, and assets - Depression - Anxiety - Disruptive behaviour - Self-concept - Motivation - ADHD - Internalizing and externalizing problems	- Centre for Epidemiological Studies-Depression Scale - Family Resources Scale - Family Support Scale - 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. [64]	- Quality of Life - Fatigue - Insomnia - Depression - Anxiety - Pain	- Paediatric QOL Inventory - Chalder Fatigue Scale - Athens Insomnia Scale - Revised Children's Anxiety and Depression Scale
Kidman et al. [65]	- 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 and Violari [66]	- 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
Louw et al. [67]	- 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

Table 3. *Cont.*

Article	Psychosocial Constructs Investigated	Measures Used
Pantelic et al. [68]	- 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. [69]	- ART adherence - Discrimination due to HIV status - Discrimination due to family member HIV status - Discrimination in the healthcare setting - Discrimination multiplicity - Internalized stigma	- Adolescents living with HIV stigma scale - Stigma-by-association scale - Self-report question
Toska et al. [70]	- 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
Woollett et al. [71]	- Depression - Anxiety - PTSD - Suicidal behaviour - Child abuse - Community violence - Bullying - Sexual health risk - Future outlook	- Child Depression Inventory—Short Form - Revised Children's Manifest Anxiety Scale - Child PTSD Checklist - MINI International Psychiatric Interview for children and adolescents suicide scale - South African National Food Consumption Survey - UNICEF scales for sub-Saharan 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

Note. N/A = Not applicable.

3.3. Psychometric Properties of the Quantitative Measures under Investigation

The majority of quantitative study authors (n = 11) commented on the psychometric properties of their scales [56,58–62,64,65,68,71]. Cluver, Meinck et al. [59] and Cluver, Pantelic et al. [58] employed a categorical principal components analysis which established that all items loaded onto a single factor. Crowley et al. [62] and Pantelic et al. [68] employed a confirmatory factor analysis to ensure that their data supported the latent structures of their instruments. In addition, Boyes et al. [56], Cluver et al. [60], Coetzee et al. [61], Crowley et al. [62], Kagee et al. [64], Kidman et al. [65], Pantelic et al. [68], Pantelic et al. [69], and Woollett et al. [71] all assessed the internal reliability of their measures. It is noted that Coetzee et al. [61], Kagee et al. [64], Pantelic et al. [69] calculated the internal reliability of all their measures; Boyes et al. [56], Cluver et al. [60], Crowley et al. [62], Kidman et al. [65], Pantelic et al. [68], and Woollett et al. [71] only calculated the internal reliability of some of their measures.

3.4. Thematic Synthesis of Findings across the Studies Included in the Sample

Seven psychosocial themes arose from the thematic synthesis of the selected literature on psychosocial factors affecting HIV-infected adolescents accessing HIV treatment services in South Africa (see Table 4).

Table 4. Themes and Sub-themes Embedded Within the Included Articles.

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

3.4.1. Theme 1: Adolescent Psychosocial Development

Several psychosocial factors affected the physiological, social, behavioural, and cognitive development of ALHIV. Delayed pubertal onset (i.e., menarche and underdeveloped breasts amongst females and short statures amongst males) were reoccurring physiological factors affecting ALHIV [57,63]. Their "unresolved grief and trauma also impaired the social development of ALHIV as a result of losing their mother at a young age" [54] (p. 426). The loss of one's mother at an early age, accompanied by the complexities of living with a chronic illness, facilitated the 'nurturing' of insecure and disorganized attachment styles among ALHIV [54]. In addition, ALHIV engaged in behaviours that were predominantly of a health-risk nature [57,62,65,66,70]. ALHIV also experienced cognitive deficiencies in processing speed, attention, visual-spatial ability, visual memory, and executive functioning [67]. Lastly, ALHIV had limited HIV treatment knowledge and were unaware of their HIV treatment success, viral load, HIV treatment names, and consequences of ART non-adherence [55,62].

3.4.2. Theme 2: Quality of Life

The social, academic, mental health and physical functioning of ALHIV were known to impact their QoL. ALHIV were at a heightened risk for defaulting on their HIV treatment because their social pursuits (i.e., the desire to fit in) were in contradiction to HIV protective behaviours (i.e., ART adherence and abstinence or safe sex) [55,62]. In addition, the experience of internalizing and externalizing behaviours negatively affected the mental health of ALHIV [56,60,61,63,64,67,68,71]. Furthermore, the physical health of ALHIV was impacted by viral failure as well as symptomatic pulmonary TB [57,59,60,62,65,66,69]. Lastly, ALHIV were academically impacted as they were often required to repeat grades at school [57,60,62,63].

3.4.3. Theme 3: Experience of Adversity

Two types of adversities, 'stressors within the family environment' and 'the experience of violence', had a negative net impact on ALHIV [54–56,58–60,65–68,70,71]. Stressors within the family environment (i.e., the loss of primary caregivers because of death or divorce, residing with alternative caregivers, the mental health and QoL amongst caregivers and other co-inhabitants, and socio-economic insecurities) negatively affected health outcomes amongst ALHIV [54,55]. ALHIV exposure to violence was prevalent in both private and public spaces. ALHIV experienced violence from caregivers and significant others in private spaces and witnessed domestic violence within the household. Caregiver violence was emotional, verbal, physical, and sexual, whilst violence from significant others was both of a physical and sexual nature. ALHIV experienced violence in public spaces at schools, community, and healthcare settings. Violence at schools often originated 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.

3.4.4. Theme 4: Social Support

ALHIV had inconsistent access to social support structures within their home, school, and healthcare contexts. Nevertheless, those who had access to social support relied on HIV support groups, caregivers, family members, and friends [54–56,60,70]. Similarly, access to social support structures facilitated ART adherence [54–56,60,70]. Conversely, inadequate social support often resulted in ART non-adherence and an increased incidence of risky behaviours among ALHIV [54–56,60,70].

3.4.5. Theme 5: HIV Stigma

The experience of HIV stigma, a multidimensional construct encompassing: (1) anticipated stigma, (2) internalized stigma and (3) enacted stigma, was common amongst ALHIV [54–56,68,69]. Anticipated stigma is determinant of internalized stigma and was present in the form of ALHIV fearing rejection and discrimination. Moreover, the experience of internalized stigma prompted ALHIV to feel like outcasts [55]. In addition, the feeling of being 'othered' by family members and peers prompted ALHIV to experience heightened feelings of loneliness. In addition to the adverse 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 and their own HIV-positive status.

3.4.6. Theme 6: HIV Status Disclosure

Although ALHIV were aware of their HIV status, many were dissatisfied with how they came to find out about their HIV-positive diagnosis [54]. Despite ALHIV choosing to disclose their HIV status to others, the dynamics of HIV status disclosure were of a complex nature as it was either ‘selective’ or ‘unintended’ [55]. Selective disclosure was the preferred method of disclosure whereby ALHIV “chose to disclose their HIV-positive status to some and not to others” [55] (p. 4). As a result, 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” [55] (p. 4).

3.4.7. Theme 7: ART Adherence

ART use among ALHIV varied, with many adhering to their treatment regimens according to self-report indicators. The sole facilitator of ART adherence was the availability of social support from caregivers and friends or intimate others. Despite the inconsistent access to social support, barriers to ART adherence included patient, school, treatment, and health service-related factors. Patient factors were related to negative relationships with alternative caregivers and socio-economic insecurities. For example, residing with emotionally unavailable alternative caregivers was cited as a barrier to ART adherence as ALHIV would attempt to default on their ART in a bid to end their lives and be with their deceased biological parents [55]. In addition, socio-economic insecurities posed difficulties to ART adherence as ALHIV often had limited access to financial support needed to cover transport costs to access HIV treatment services. School factors included teacher conduct and attitude and their school commitments. The attitude and behaviours of certain teachers were of an unfriendly and abusive nature. Teacher volatility prompted ALHIV to feel uncomfortable and unwilling to communicate their healthcare needs (i.e., the need to attend the clinic regularly) for fear of abuse and victimization. School commitments and the busy school schedules of ALHIV also 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 encompassed the patient’s knowledge regarding the adverse effects of ART. Similarly, the rigid treatment routines associated with ART adherence resulted in frustration and fatigue because “no leniency was allowed” [55] (p. 6). Health-service factors included a lack of privacy and confidentiality during healthcare follow-up visits, the knowledge of healthcare workers, the conduct of healthcare workers, lack of support from healthcare staff, 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. Limited healthcare worker knowledge regarding the unique attributes ALHIV present with when accessing HIV treatment services also impeded the provision of ALHIV-friendly healthcare. The provision of ALHIV-friendly healthcare was further hampered by verbally abusive conduct and the provision of overtly differentiated care towards those who were either adherent or non-adherent to their HIV treatment regimens. In addition, some healthcare workers appeared to be unsupportive towards ALHIV as they were perceived to be fully responsible for their healthcare needs. Missing and misplaced files were another barrier as many ALHIV were required to go home and return to the clinic later when the file was located. Lastly, the extended periods of time ALHIV were required to wait to collect their medication repeat regimens interfered with their school commitments.

4. 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 explored in the South African context. What has been done to address this topic has occurred more recently during the epidemic in South Africa (i.e., 2015–2020). The uptake of research suggests a growing trend within contemporary HIV research in South Africa. This review described, analysed, and discussed the available findings on the psychosocial outcomes among ALHIV accessing HIV treatment using a systematic approach. Figure 2 highlights the seven psychosocial factors which affect ALHIV accessing HIV treatment services in South Africa.

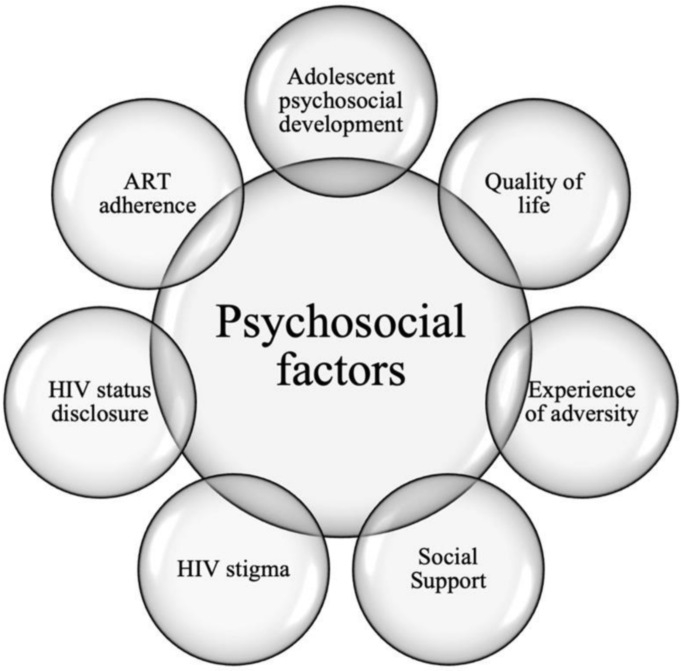

Figure 2. Psychosocial factors which affect ALHIV accessing HIV treatment services.

The psychosocial factors that affect the health and well-being of ALHIV are of a complex and multidimensional nature. Specifically, psychosocial development, QoL, the experience of adversity, social support, ART adherence, HIV stigma, and HIV status disclosure have a differential impact on the health and well-being of ALHIV accessing HIV treatment services in South Africa. 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 predisposes ALHIV to experience additional psychosocial distress, which commonly results in poor health outcomes.

It is concerning that none of the articles included in this review 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, increasing the incidence of risky sexual and violence-related behaviour amongst males [72]. Similarly, none of the included articles addressed the disparity that exists in relation to the psychosocial needs of ALHIV according to gender. Research findings from adult literature indicate that young women living with HIV are particularly susceptible to "unequal . . . coercive sexual practices, (which are) known to increase (their psychosocial) vulnerability" [25] (p. 22). This 'gendered' psychosocial vulnerability, rooted in a heteronormative and violent patriarchal culture that has a notable psychosocial impact on adults [26], is likely to impact the health and well-being of ALHIV negatively. Finally, none of the included articles addressed the precarious transition ALHIV undergo when moving from paediatric to adult-oriented healthcare characterized by the provision of undifferentiated healthcare [17,19,73–75]. In addition, although the articles investigated adherence to ART, none specifically explored the psychological or psychosocial impact of ART.

Implications for Practice, Theory, and Future Research

ALHIV are a particularly vulnerable cohort of people living with HIV and present with clinically distinct differences compared to those of their adult and child HIV-positive counterparts. The idiosyncrasy of ALHIV is premised on their psychosocial transition during the three stages of adolescence.

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 paper could not differentiate between the psychosocial factors that affect HALHIV and VALHIV independently and instead showcased the psychosocial factors that affect ALHIV as a collective. Future research that differentiates VALHIV from HALHIV samples would be instructive on understanding these two cohorts' diverse experiences and needs.

It should be stressed that healthcare workers who interact with ALHIV require particular forms of knowledge related to the unique attributes that ALHIV present with when accessing HIV treatment services in South Africa. Healthcare workers require information and knowledge dissemination and require structural support in the form of regular training and supervision. In addition, ALHIV require knowledge of their HIV status and sustained psychosocial support to promote the acceptance and understanding of the implications of living with HIV.

From a theoretical perspective, this paper demonstrated the importance of using a public health theoretical framework which conceptualizes 'health' in a holistic and psychosocially nuanced manner. As per the WHO's conceptualization of 'health', this paper explored the psychosocial factors that had subtle and, at times, overt influences on the health outcomes amongst ALHIV. In addition, this paper highlighted the utility of orientating to a theoretical framework in conjunction with a systematic review method. The theoretical importance of utilizing a public health model lies in its ability to delineate health implications using quantitative and qualitative data. From a research perspective, it is concerning that the articles made little use of psychological or psychosocial insight, given the bi-directional nature of HIV and mental health among ALHIV. Future research should adopt an intersectional psychological or psychosocial approach to their design, given the high burden of mental health symptoms observed in ALHIV populations in diverse contexts and localities and as well as the limited availability of research on ALHIV in South Africa. Researchers ought to ensure that their studies are as bias-free as possible. Surveys and questionnaires aimed at psychometric measurement are often imported from the Global North and are plagued with validity concerns. The majority of the quantitative studies reported on the psychometric properties of the measures employed in their articles; however, it is important to consider the impact of self-report measures on the quality of outcomes measured. In addition, methodological issues associated with self-reported data, such as sampling or response bias, must be equally considered. Finally, future research must consider the impact volunteer bias has on the quality of results. Volunteer bias, an essential consideration in quantitative research, can, when unacknowledged, bias results, which commonly results in positive rather than negative outcomes. Therefore, the results reported by the review must be considered with caution. This caution does not indicate problematic results, but it suggests that more can be done to increase the quality of investigated outcomes. Studies that reported on their instruments' psychometric properties were of high quality, as indicated by their high internal reliability estimates. Despite this, the instruments' validity was not adequately discussed by authors. 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 their administered scales.

5. Conclusions

5.1. Limitations

The limitations of this research ought to be considered. First, due to the purposive inclusion criteria used to inform this research, the articles in the final sample cannot represent what has been done in the field of mental health and HIV. Specifically, excluding grey and other non-empirical literature and articles published in languages other than English may have contributed to evidence collection bias. Second, 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. Third, the study's generalizability was minimized using cross-sectional, correlational, and descriptive research designs. Finally, given these limitations, potential bias was minimized by using a reflective journal and consulting the supervisor of this research.

5.2. Conclusions and Recommendations

Adopting a psychosocial approach to person-centred healthcare, research, and theory has inherent merits and shortcomings that must be weighed against healthcare providers' and researchers' contextual situation of needing to provide a particular health-informed service. In addition, adopting a psychosocial approach to healthcare provision and research requires time and resources that are not readily available in South Africa's public healthcare system. Nevertheless, investigating 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 has identified, discussed, and showcased how certain psychosocial factors could impact the health and well-being of ALHIV accessing HIV treatment services in South Africa.

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Institutional Review Board Statement: Ethical review and approval were waived for this study due to this research being that of a systematic review that used published empirical articles in the public domain. Thus, ethical clearance was not required—this research did not involve data collection from human participants. However, an ethics waiver (MASPR/20/13W) was obtained for this study by the University of the Witwatersrand's School of Human and Community Development Ethics Committee.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

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
☐ 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?
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?
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

Appendix B

CASP
Critical Appraisal
Skills Programme

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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:

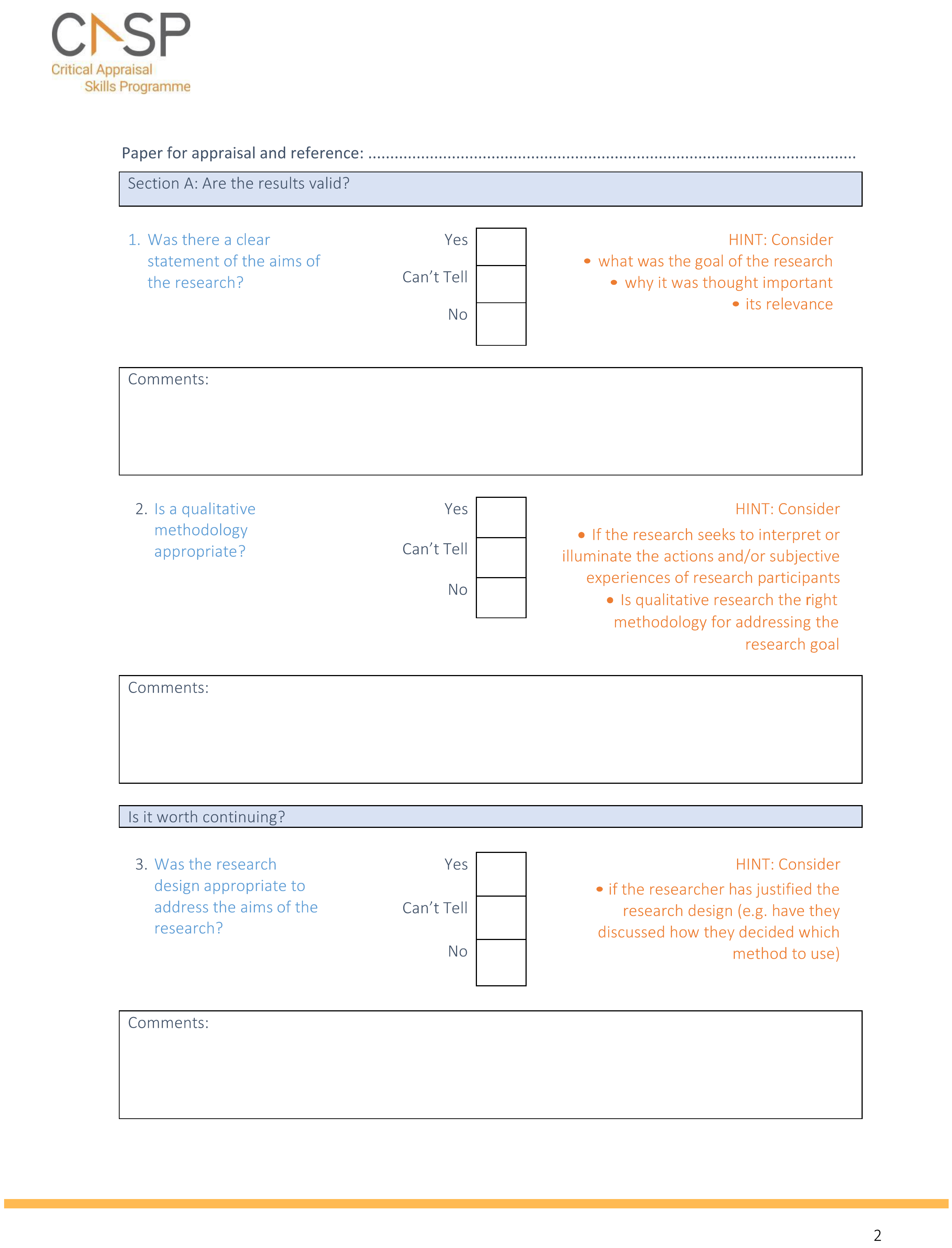
- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

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.*



CASP
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:

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:

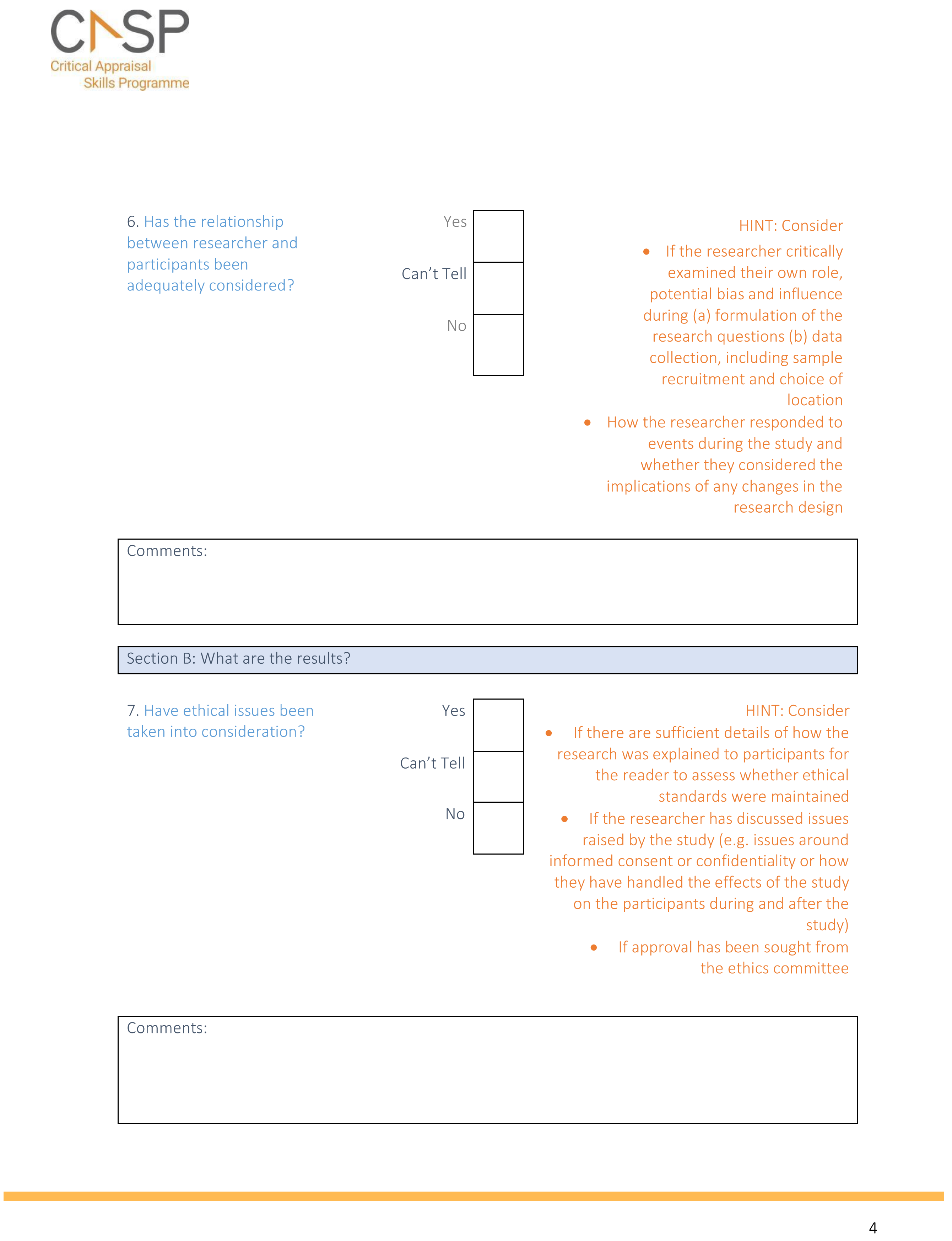
5. Was the data collected in a way that addressed the research issue?

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:

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:

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