



BMJ Open Prevalence of, and factors associated with, alcohol use disorder among young adults (aged 15–24 years) living with HIV/AIDS in low-income and middle-income countries: protocol for a systematic review

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ABSTRACT

Introduction Alcohol use is a global driver of HIV infection and disease progression, mediated through risky behaviour and poor antiretroviral adherence. Most studies about the burden of alcohol use among people living with HIV (PLWH)/AIDS have been done in adult populations, but less is known about young people with HIV, especially in low-income and middle-income countries (LMICs), despite the high level of alcohol use in these settings. The aim of this review is to collate evidence on the prevalence of, and factors associated with, alcohol use disorder (AUD) among young adults (aged 15–24 years) living with HIV/AIDS in LMICs.

Methods and analysis Two experienced librarians will conduct an independent article search in PubMed, PsycINFO, Embase and Web of Science databases, using relevant Medical Subject Headings terms and Boolean operators ('AND', 'OR'). We will include English-language articles that were published in peer-reviewed journals from 1 January 2000, to 25 July 2022, that documented the prevalence of AUD among young people (15–24 years) living with HIV in LMICs. We shall exclude systematic review articles and qualitative studies. Two independent reviewers will screen the articles for eligibility and data will be extracted onto a preset Excel spreadsheet. Data analysis will be done using Stata V.14.0. Heterogeneity will be assessed by use of the I^2 statistic and data will be pooled in meta-analyses where appropriate. Publication bias will be assessed using the funnel plot.

Ethics and dissemination Ethical approval is not needed as this systematic review will be based on published studies. Findings from this study will be disseminated via submission for publication in a peer-reviewed journal, at conference presentations, and made available to health professionals, scientists and policy makers. Our data set can be made available on request.

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INTRODUCTION

Alcohol use is a common and major public health concern among PLWH globally.¹ Of particular concern is the fact that alcohol

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This being a systematic review study, we anticipate that bias and random error will be minimised in reporting our results.
- ⇒ We have focused on a single clear question, developed clear a priori criteria and systematically searched several databases, as such, we expect to report clear summaries based on high-quality evidence.
- ⇒ The review may be limited by heterogeneity in study designs, assessment methods and settings of the included studies.
- ⇒ The review is limited to publications in English.

use disorder (AUD) has been identified as a global driver of new HIV infection, disease progression, and poor HIV care seeking and treatment, among young people.^{2–3} Moreover, young people (10–24 years) account for 8.8% of all PLWH globally and about 11% of new infections.⁴ The majority of the affected young people are found in low-income and middle-income countries (LMICs), especially in sub-Saharan Africa (SSA), and are young women.^{4,5}

AUD is defined as a problematic pattern of drinking which leads to clinically significant impairment characterised by cognitive, behavioural and physiological symptoms, or distress.⁶ AUD is a continuum of use that ranges from mild to moderate to severe use disorder. The continuum is characterised by harmful use, hazardous use and dependent use.⁷ Harmful use is a pattern of alcohol use that is damaging to physical and/or mental health. Hazardous use is a pattern of use that increases the risk of severe long-term social,

physical and mental harmful consequences. Dependent use is a pattern of use characterised by intense psychological cravings, tolerance and withdrawal symptoms.⁸

Studies have reported varying levels of prevalence of AUD among PLWH in low-income settings. For example, a 2019 review reported a pooled global prevalence of AUD among PLWH to be about 30%, with gender differences, that is, men (26.9%) and women (13.37%).¹ Another recent review in Africa reported a 1 year prevalence of AUD among PLWH to be 22.03%, with differences noted depending on the country (eg, South Africa had a higher prevalence than Uganda), the year of publication and the study sample size (lower prevalence for larger sample sizes).⁹ Some factors associated with AUD among PLWH include male gender, other psychoactive drug use, low CD4 count, familial use of alcohol and low income.⁹ However, these reviews were conducted among adult PLWH, leaving out young people living with HIV (YPLH) who carry the dual burden of both HIV and AUD.¹⁻³

No reviews in LMICs or SSA have focused on AUDs among YPLH, yet initiation of regular drinking occurs in childhood and adolescence regardless of HIV status.¹⁰ A previous review, conducted in 2013 in Eastern Africa among young people aged 15–24 years, reported the prevalence of alcohol use in the past 1 month to be 28%, the past 1 year prevalence to be 26%¹¹ and the median prevalence of lifetime use to be 52%. This means that one in two young people in Eastern Africa has ever used alcohol, one in four has used alcohol in the last month, and one in four has used it in the last year. This provides important insight into alcohol use among young people, however, it was limited in scope by reporting results from a single region containing only five African countries and it focused on the general population of young people, not those living with HIV. Moreover, alcohol use and sexual behaviour co-occur frequently in young people, increasing the risk for HIV transmission and other sexually transmitted infections.¹²

It is vital to focus on AUD among YPLH because studies have shown that the prevalence of AUD among adult PLWH is higher than that of the general population,^{1 13} and this may be the case with YPLH. To the best of our knowledge, no published study in LMICs has pooled the prevalence and factors associated with AUD among young people (15–24 years) living with HIV. There is a need to generate some evidence on the burden and factors associated with AUD among young people, defined as aged 15–24 years,^{14 15} living with HIV in LMICs given the double burden of HIV/AIDS and AUD to which they are vulnerable. Evidence on the prevalence and factors associated with AUD among YPLH in LMICs would be important for policy and practice to design effective AUD-in-HIV-focused interventions for young people in LMICs.

Objectives

This systematic review seeks to:

- ▶ Estimate the prevalence of AUDs among young people (15–24 years) living with HIV in LMICs; and

- ▶ Describe the factors associated with AUD among YPLH in LMICs.

METHODS AND ANALYSIS

This review protocol has been developed following the Preferred Reporting Items for Systematic reviews and Meta-analysis Protocols (PRISMA-P) statement (online supplemental appendix file 1).¹⁴

Types of studies

We will conduct a systematic review of observational studies (cross-sectional, cohort, case-control), interventional studies and short communications (if they have baseline data), that document the prevalence and factors associated with AUD among PLWH in LMICs.

Eligibility criteria

We will include English-language articles that were published in peer-reviewed journals from 1 January 2000 to 25 July 2022, that documented the prevalence of alcohol use among young people (15–24 years) living with HIV in LMICs. The choice of cut-off date for the search is because research interest in alcohol use among PLWH began to gain traction around the year 2000, and we want to ensure the review considers relevant recent evidence. We shall exclude systematic review articles, qualitative study designs (since they don't report the prevalence of AUD), letters, commentaries, duplicated studies, and studies whose data cannot be segregated into sex categories of male/female, and the age group of 15–24 years cannot be segregated. We will explore and include studies from the reference lists of similar systematic reviews.

Study setting

The systematic review will include studies conducted in LMICs as defined by the World Bank.

Participants

Participants will be young people aged 15–24 years^{15 16} living with HIV in LMICs.

Types of interventions/exposures

The review will include articles of observational studies (cohort, cross-sectional and case-control), intervention studies (baseline data) and short communications (with baseline data) that have documented the prevalence of alcohol use among young people aged 15–24 years living with HIV in LMICs.

Comparator

The comparison group will be the young people (15–24 years) living with HIV with no AUD.

Types of outcome measures

Our outcomes of interest are the prevalence of AUD among YPLH in LMICs, and factors associated with AUD in this population.

Search strategy

Published articles on alcohol use among PLWH will be searched using electronic databases; PubMed, PsycINFO, Embase and Web of Science. Additional literature will be identified by searching grey literature databases and contacting experts in the field(s). Furthermore, reference lists of included studies will be searched for additional relevant literature.

We will search the databases using a combination of the following key terms, their synonyms and Medical Subject Headings terms: alcohol use, young people, HIV/AIDS and LMICs. The search string will be developed using the above terms. The search string to be used in searching articles in the four databases is provided as online supplemental appendix file 2. Appropriate Boolean operators 'OR' and 'AND', and truncations will be used in order to identify as many studies as possible. The search will be updated towards the end of the review, after being validated to ensure that the strategy retrieves a high proportion of eligible studies.

Data extraction

The article search will be independently carried out using the same search string, by two experienced librarians, AAK and RS, from the same databases. The articles from the two independent searches will then be merged into EndNote software and duplicates will be identified and removed. Two independent reviewers, RFO, a psychiatrist, and MO, a pharmacologist with expertise in conducting reviews, will screen the titles and abstracts of the articles for eligibility using preset criteria. In the event that there is disagreement about which study to include or exclude, the Principal Investigator (RFO) who is the content expert will be the final decision maker after a discussion with MO. Two independent reviewers (RFO and MO) will abstract data using a preset abstraction form developed in Excel spreadsheet 2007. Kappa agreement between the two reviewers will be calculated. If there are any disagreements, these will be resolved by discussion. Any further disagreement will be referred to a tie-breaker (NN). The authors of the reviewed articles will be contacted in case there is a need for clarification or more information not indicated in the article.

Quality assessment

Two reviewers (RFO and MO) will independently assess the quality of all included studies. The modified version of the Newcastle-Ottawa Scale¹⁷ will be used to guide the assessment of the quality of the articles that are cohort studies that we shall include in the meta-analysis. For each cohort study to be included, we shall look for how representative and adequate the sample was, how comparable the subjects were, how AUD was assessed (self-report vs biomarker) and the statistical quality of the study. As for the cross-sectional studies, we shall use the Joanna Briggs Institute (JBI)¹⁸ critical appraisal checklist for prevalence studies to evaluate them. Aspects such as the sampling procedure of participants, sample size, sufficient response

rate, well-described study populations and settings, appropriate data analysis, use of valid methods for assessing alcohol use such as self-reported tools (eg, Alcohol Use Disorders Identification Test - Concise (AUDIT-C) or objective biomarker tests (eg, phosphatidyl ethanol),¹⁹ reliability of measurements, and the appropriateness of statistical analysis, will be the focus of the JBI appraisal checklist. The risk of bias (RoB) of the articles will be assessed using the Cochrane RoB assessment tool for non-randomised studies. Grading of Recommendations, Assessment, Development and Evaluations (GRADE) will be used to determine the strength of recommendations and level of confidence in the results of meta-analyses reported in the different studies.

Data synthesis

Quality synthesis

In this review, we will record the following items from an eligible article: first author name, year when the study was done, country, study design, study population, sample design, sample size, age group studied, prevalence of alcohol use with 95% CIs, assessment tool used, type of alcohol, age at initiation, other substance use, statistically significant factors associated with AUD, antiretroviral therapy and viral suppression, among others. There are no preplanned data assumptions and simplifications. Abstracted data will be kept in the Excel sheet and articles for review will be kept in the EndNote file by the lead reviewer (RFO). We will export the data to Stata V.4 for analysis.

Meta-analysis

The degree of heterogeneity between eligible studies will be assessed using the I^2 statistic.²⁰ Data from the included studies will be pooled using measures of central tendency (means) and proportions. The prevalence, ORs and CIs will be presented in forest plots and we will generate a summary prevalence and CI. In case we find no or low heterogeneity ($I^2=0$ and $I^2=25\%$), we will proceed to conduct a meta-analysis to summarise the results of independent studies. We shall use the random effects model²¹ and quality effects model²² in the analysis. If we find a statistically significant heterogeneity (defined as $I^2>25\%$), we will summarise the studies as a narrative.²³ We shall conduct sensitivity and subgroup analyses for specific independent variables to determine the influence on our effect size. The independent variables in the subgroup analysis will include geographical region, study designs (cross-sectional studies, case-control studies and cohort studies), gender and age groups. Publication bias will be assessed using funnel plots. Once detected, the articles will be adjusted for publication bias using the trim and fill method.²⁴ Data analysis will be conducted using Stata V. 14.0 software.

Assessment of heterogeneity

Significant variations in study results are possible because of different study settings, assessment tools, designs and

RoB. Statistical heterogeneity between studies will be examined using the I^2 statistic.

Relevant expertise

The team consists of a content expert, RFO, a psychiatrist whose clinical work is in the field of alcohol and drug abuse. MO is a pharmacologist and an expert in systematic reviews and meta-analyses. AAK is an information scientist and a medical librarian. JAH is a content expert in HIV research in low-income settings. We will also be supported by a team of reviewers based at the African Centre for Systematic Reviews and Knowledge Translation at the Makerere University College of Health Sciences, Kampala, Uganda.

Patient and public involvement

None.

ETHICS AND DISSEMINATION

Ethical approval is not needed as this systematic review will be based on published studies. Findings from this study will be disseminated via submission for publication in a peer-reviewed journal, at conference presentations and a policy brief summarising the results for health professionals, scientists and policy makers. Our data set can be made available on request.

DISCUSSION

Alcohol use among PLWH is a huge public health concern in LMICs.^{3 25 26} Among adult populations of PLWH, reviews have reported that there is an association between alcohol use and prevalent and incident HIV;³ the prevalence of AUD among PLWH is 30% and 22%.^{1 9} These reviews did not report on the prevalence of AUD among young people aged 15–24 years. Moreover, we find no evidence of such pooled prevalence and odds ratio estimates of AUD among YPLH in LMICs.²⁷ Yet, if not identified and intervened on, alcohol use within the context of HIV is associated with poor care outcomes such as low adherence, poor viral suppression, disease progression and death.¹³ YPLH are not exempt from these and other complications of AUD. It is imperative to estimate the prevalence and factors associated with AUD among YPLH in LMICs.

This protocol describes a systematic review and meta-analysis of observational studies reporting the prevalence and factors associated with AUD among young people (15–24 years) living with HIV in LMICs. The review seeks to establish reports of AUD among YPLH in LMICs, to describe the factors associated with AUD, and to describe the assessment methods and/or tools used in determining AUD among young people in LMICs. Once completed, our review will be of interest to HIV care providers, health managers and policy makers, since it may inform screening and appropriate management of AUD among YPLH.

The strength of our study is the fact that we shall summarise primary studies from various settings within the LMICs, and hence present strong results and conclusions. However, our search is limited to publications in English, and our study will likely be limited by the heterogeneity of study designs, assessment tools and settings in the included studies.

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Contributors RFO is the guarantor. MO, NN, WWM, CSC and JAH contributed to the development of the selection criteria, the risk of bias assessment strategy and data extraction criteria. AAK developed the search strategy (Richard Senono is a librarian who supports Alison Annet Kinengyere (AAK) in doing database searches). MO drafted the analysis plan. RFO conceived, reviewed literature, and drafted and revised the protocol. CSC revised the protocol. JAH provided expertise on HIV/AIDS. All authors read, provided feedback and approved the final protocol for publication. All authors have agreed on the journal to which the article has been submitted, and agree to be accountable for all aspects of the work.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

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