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Prevalence of alcohol use and associated factors since COVID-19 among school-going adolescents within the Southern African Development Community: a systematic review protocol

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ABSTRACT

Introduction The COVID-19 pandemic has significantly shaped the global landscape and impacted various aspects of individuals' lives, especially the behaviour of school-going adolescents regarding substance use. Among these substances, alcohol is the most predominant substance, particularly among school-going adolescents, who also are highly susceptible to harmful alcohol use, such as poor academic performance, psychiatric disorders and disrupted social lives. This review will synthesise the known prevalence estimates and associated factors of alcohol use among school-going adolescents in the Southern African Development Community (SADC) since the COVID-19 pandemic.

Methods and analysis We will perform a systematic review in line with the Cochrane Handbook for Systematic Reviews. We will systematically search for selected global databases (ScienceDirect, EbscoHost, PsycINFO and PubMed) and regional electronic databases (African Index Medicus, Sabinet and African Journals OnLine). Peer-reviewed literature published between 11 March 2020 and 10 March 2024 will be considered for eligibility without language restriction. All 16 countries of the SADC region will be included in the review. The Mixed-Methods Appraisal Tool checklist for quality appraisal will be used to appraise the methodological quality of the included studies. Depending on the level of heterogeneity, prevalence estimates will be pooled in a meta-analysis; narrative synthesis will be applied to describe the reported associated factors of alcohol use.

Ethics and dissemination We will not seek ethical approval from an institutional review board since the study will not involve gathering data directly from individual school-going adolescents, nor will it violate their privacy. When completed, the full report of this review will be submitted to a journal for peer-reviewed publication; the key findings will be presented at local and international conferences with a partial or full focus on (adolescent) alcohol (mis)use.

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STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The cross-national nature of this review covers countries in the Southern African Development Community (SADC) region, allowing for comparisons of findings across and within these countries.
⇒ This review will employ a meticulous search strategy to locate and retrieve studies relevant to our research question.
⇒ A plausible lack of extensive published primary studies on alcohol use among school-going adolescents in the SADC region may result in insufficient (eligible) papers.

INTRODUCTION

Alcohol abuse is a persistent global problem. WHO estimates that harmful alcohol use results in 3 million deaths each year worldwide, which represents 5.3% of all deaths, but the global usage of alcohol is also reported to be on the rise among school-going youths and adolescents.[1–5] For instance, a recent report by WHO indicates that over 25% of individuals aged 15–19 years consume alcohol.[6] This translates to about 155 million adolescents who consume alcohol. The consumption of alcohol by adolescents is a significant public health concern due to its adverse impact on their physical and mental well-being.[2 7] Notably, recent studies have shown that there has been an increase in alcohol use among school-going adolescents during the COVID-19 lockdown period.[8 9] While several efforts have been made globally (during and in the post-COVID-19 era) to control and prevent adolescent alcohol (mis)use, the problem persists.[10–12]

So far, the studies that exist on this problem are sporadic and scattered, especially in the Southern African Development Community

(SADC) region. In particular, secondary studies synthesising what is known about the problem in the region are unavailable. SADC is a regional organisation that promotes economic integration among its 16 member states: Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia and Zimbabwe. The community aims to enhance sustainable development, increase economic growth and reduce regional poverty through various programmes and initiatives.[13] SADC seeks to promote economic growth, social progress, poverty eradication and to attain an acceptable standard of health for all citizens.[13] Significantly, school-going adolescents from the SADC are no exception to increased alcohol use, particularly during the COVID-19 pandemic.[14]

It is important to note that this review defines adolescence as a period of human development that usually lasts from 12 to 24 years.[15] During this period, individuals begin to explore their own identity and sense of self, which can lead to extended periods of confusion about their identity. The literature suggests that adolescents experience rapid physical, cognitive and psychosocial growth, which affects how they feel, think, make decisions and interact with the world around them.[15–17] Clearly, during the adolescence stage, individuals often experience prolonged periods of identity confusion. Chao argued that this could lead to engaging in risky behaviours without fully considering the potential consequences of their actions.[18] Engaging in risky behaviour can involve the use of substances like alcohol. During the COVID-19 pandemic, many school-going adolescents faced increased vulnerability and exposure to various challenges, leading to increased use of substance such as alcohol.[19 20] Oppong Asante *et al* observed that during the COVID-19 lockdown, despite restrictions on alcohol sales and human movements, it appears that the use of alcohol did not decrease or stop.[21]

The increase in alcohol consumption among adolescents has been attributed to several factors, including certain social norms, personal disposition and the impact of the COVID-19 pandemic.[22–24] Other studies have also indicated that closure of schools and other hardships caused by the COVID-19 pandemic have led to suicidal thoughts in young people, with some individuals turning to alcohol and drugs to escape anxious thoughts about the pressures of the pandemic and fatalistic thinking.[19 20 25–31] The closure of schools during the COVID-19 pandemic was particularly troubling for young people (including those living within SADC), given that schools are considered safe havens and secure spaces for pupils. Schools offer nutritional meals and a secure environment that helps students escape unpleasant experiences at home and in neighbourhoods.[28]

Alcohol use has emerged as a critical global concern, causing a significant impact on public health and socioeconomic development, particularly in low-income and middle-income nations.[32] According to WHO, alcohol use involves the consumption of non-medicinal psychoactive substances like beer, wine and whiskey.[33] Alcohol is widely used in various cultures, and it can be addictive. It is well documented that excessive consumption of psychoactive substances found in alcoholic beverages can be harmful among young populations, including school-going adolescents.[34 35] There is a direct connection between alcohol consumption and negative behavioural outcomes, whether intentional (eg, self-injury, aggression towards others) or unintentional such as road accidents and unintended self-poisoning.[34 36]

In Africa, there has been a noticeable increase in the consumption of alcohol per person, especially among adolescents, which has led to a rise in alcohol-related illnesses.[24 37–39] Pooled estimates from sub-Saharan Africa suggest the highest proportion of alcohol use among adolescents is in Southern Africa (40.82%), followed by East Africa (34.25%), then Central Africa (29.09%).[32] In contrast, West Africa had the lowest proportion of alcohol use among adolescents at 28.21%. The rise in alcohol use among school-going adolescents is linked to experiences of hunger, bullying, physical fights, material influence and parental substance abuse.[2 21 40 41] As a global public health and social problem, the prevention of adolescent alcohol use requires governments in sub-Saharan Africa and other regions of the world to consider scaling up interventions for the prevention and treatment of substance abuse in line with the Sustainable Development Agenda 2030.[42] This objective highlights the vital role that alcohol plays in the global disease burden, which poses a significant challenge to attaining global development goals. In line with target 4.1 of the Sustainable Development Goals (SDG) set to be achieved by 2030, the aim is to guarantee that every child, along with adolescents, gets access to quality primary and secondary education and completes it.[42] However, if left unchecked, adolescent alcohol use threatens the attainment of this SDG target, as alcohol use contributes to truancy, high attrition and increased dropout rates among school-going adolescents.[43 44]

Since the COVID-19 pandemic, alcohol use has been a mounting problem that demands urgent attention. Some associated factors include family, school, adolescent variables and economic factors.[45 46] For instance, alcohol use among adolescents is greatly influenced by negative attitudes towards school, behavioural problems, sociocultural influences and peer pressure.[47] Mmereki *et al* have also identified sex, age, school grade, repeating a grade and working during spare time as contributing factors to adolescent alcohol use.[35] Thus, there is a need to have a synthesised understanding of the prevalence and associated factors of alcohol use among school-going adolescents since the COVID-19 pandemic to inform the conceptualisation of preventative and interventive efforts and programmes. Schools are effective in implementing behaviour change programmes among adolescents, which will have a long-term impact.[12] For effective intervention among school-going adolescents, there is a need

for evidence of the prevalence and associated factors of alcohol use among school-going adolescents since the COVID-19 pandemic. The effect of COVID-19 is not highlighted in conducted reviews that looked at the prevalence of alcohol use among school-going adolescents.[11] Also, other reviews combined data from adolescents, youth and adults, and were not confined to the member countries of SADC.[10] For example, a review published nearly half a decade ago was limited to sub-Saharan African countries.[32]

Although member countries of SADC also fall under sub-Saharan Africa, it is significant to understand the prevalence of alcohol use among school-going adolescents specifically in the SADC region, as member countries of SADC share some comparatively similar health-related characteristics. Therefore, this proposed systematic review will assist in planning and developing effective interventions and achieving the SADC Health Policy Framework, which prioritises combating violence and substance abuse. Furthermore, the review can significantly enhance the utilisation of evidence in policy formulation and decision-making at the SADC regional level.[48] To the best of the authors' knowledge, this is the first effort to systematically review and synthesise the existing literature on alcohol use among school-going adolescents from the SADC region.

Theoretical framework

Our approach involves providing an understanding of various influences on adolescent alcohol use through the socio-ecological theoretical framework originally proposed by Bronfenbrenner[49] to understand human development. The socio-ecological framework posits that many factors across the microsystem, mesosystem, exosystem, macrosystem and chronosystem influence human development in a reciprocal fashion.[49] The socio-ecological framework has been applied to understand human health behaviour and pro-health promotion intervention programmes.[50] McLeroy *et al* have suggested five levels of interacting ecological layers which determine human health-related behaviour: *individual/intrapersonal factors* (related to biological and personal history); *interpersonal factors,* which relate to formal and informal social networks including support systems such as family, peers, working groups and friendships; *institutional factors*, which include organisational characteristics, social institutions, rules and regulations; *community factors* and *public policy level*, which involves national laws or state and local policies.[50] The socio-ecological model has been found useful in understanding alcohol use among the general population.[51–53] More recently, the model has proven useful in understanding the protective factors and risks associated with alcohol use among school-going adolescents in countries within sub-Saharan Africa.[54 55] Thus, Asante and Quarshie highlighted the importance of considering various levels of influence when studying and comprehending the health behaviour of school-going adolescents.[5] This includes considering individual levels, immediate and broader community and societal levels. Therefore, to fully understand the phenomenon of alcohol use among adolescents, it is imperative to consider the influence of the adolescents' personal/individual level, family level, school level, interpersonal/peer relationship level and community/neighbourhood level. As Asante and Quarshie argued, these factors influence substance use behaviour, including alcohol (mis)use.[5] Based on this theoretical framework, this systematic review aims to determine the prevalence and associated factors of alcohol use among school-going adolescents since the outbreak of the COVID-19 pandemic, which has had significant impacts on people's lives.

Objectives

The objectives of this systematic review are:

- to synthesise the prevalence estimates of alcohol use since COVID-19 pandemic among school-going adolescents within the SADC region;
- to describe the known factors associated with alcohol use since COVID-19 pandemic among school-going adolescents within the SADC region.

METHODS

We followed the guidelines suggested by the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement to report this review protocol.[56] The reporting of the completed review would be guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[57] guidelines.[57] In brief, our approach involves using predetermined eligibility criteria, search strategies, guidelines for extracting data, conducting critical appraisals, synthesising data and reporting results.

Eligibility criteria

We have formulated the eligibility criteria by mainly following the population, exposure and outcome (PEO) model.[58] Table 1 outlines the specific exclusion and inclusion criteria that will be used to select eligible papers for this review.

Electronic databases information sources

Our electronic database search filter will span from 11 March 2020 (when initial cases of COVID-19 were recorded within SADC) to 10 March 2024 (the anticipated completion date of this review). We will search four global electronic databases (ScienceDirect, EBSCOhost, PsycINFO and PubMed) and three regional electronic databases (African Index Medicus, Sabinet and African Journals OnLine) for potentially eligible studies. As part of this systematic review, we will search for additional records by examining the reference lists of identified eligible publications. We will search Google Scholar, the South African Institutional Repository database and the Cochrane Library to find any primary studies that are relevant records. We will contact pertinent study authors for further details if needed. The reporting of the literature search process will adhere to the Statement for Reporting

Table 1 Summary of eligibility criteria

Criterion	Inclusion criteria	Exclusion criteria
Population/Participants	▶ School-going adolescents (aged 12–24 years and attending junior high or senior high school). ▶ Adolescents recruited from any of the 16 countries within the SADC region will be included, regardless of gender, religion or sexual or gender orientation or health status. ▶ This review will include all studies involving participants from a range of age groups, with most participants (≥90%) falling within the 12–24 years range.	▶ The studies involve participants who are either younger than 12 years or older than 24 years. ▶ The studies including participants of various ages, but results are not disaggregated according to age or age groups.
Setting	▶ The 16 member countries of SADC (Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia and Zimbabwe). ▶ This review will consider all available and accessible potentially eligible primary studies conducted in clinical and non-clinical settings, such as schools, communities, households and neighbourhoods that involve adolescents attending school.	▶ Studies focused on alcohol use among school-going adolescents, but participants are sampled outside the geographical region of SADC. ▶ Studies focused on alcohol use among adolescents who are not explicitly identified or described as school-going, pupils, learners or students within SADC. ▶ Cross-national studies involving member countries within and outside the SADC region, but with study results are not disaggregated by country or region.
Exposure	▶ Consistent with the socio-ecological framework, primary studies reporting associated factors of adolescent alcohol use is identifiable, at least one of the ecological levels (ie, personal/individual level, microsystem, mesosystem, exosystem, macrosystem and the chronosystem) would be considered.	▶ Studies reporting associated factors of adolescent alcohol use not readily identifiable at any of the ecological levels, even after contacting authors for clarifications.
Study design	▶ Primary studies that address at least one of the specific objectives of this review using observational study designs or qualitative approaches. ▶ Studies involving self-report or direct reporting of alcohol use by school-going adolescents.	▶ Published protocols for prospective reviews or primary studies. ▶ Full text of identified records is unavailable or inaccessible, even after contacting authors. ▶ Studies based on the same dataset reported in an eligible earlier publication will not be included in this review. ▶ Articles not based on data, non-peer-reviewed publications, including grey literature such as correspondence, editorials, opinion pieces, commentaries, master's and doctoral dissertation.
Outcome	Alcohol use.	▶ Studies reporting on illegal drugs or the (mis)use of prescription or over-the-counter medications with negative consequences. ▶ Studies reporting on substance (mis)use, including alcohol and drugs, in general, among school-going adolescents, but results are not disaggregated according to each substance.

SADC, Southern African Development Community.

Literature Searches in Systematic Reviews (PRISMA-S) guidelines.[59]

Search strategy and process

The search strategy would include keywords, Boolean logical operatives, truncations and Medical Subject Headings terms as appropriate for and relevant to each selected database. Although the review would be reported in English, the search for and screening of potentially eligible records will be performed without any language restriction. Our geographic search filter would include the names of the 16 countries within SADC. For example, we will search the PubMed database using the following search strategy (see online supplemental material) optimised through the assistance of an institutional librarian at the University of Limpopo, South Africa: ("alcohol use" OR "alcohol abuse" OR "substance abuse" OR "alcohol dependence" OR "alcohol addiction") AND (associated factors OR correlates OR risk factors OR contributing factors OR protective factors) AND (adolescent* OR teen* OR child* OR young people) AND (school going OR "in-school adolescents" OR "school-going adolescents" OR school-attending OR school-based OR school learners OR students OR pupil) AND (Angola OR Botswana OR Comoros OR "Democratic Republic of Congo" OR Eswatini OR Swaziland OR Lesotho OR Madagascar OR Malawi OR Mauritius OR Mozambique OR Namibia OR Seychelles OR South Africa OR United Republic of Tanzania OR Zambia OR Zimbabwe).

Study records

All authors have received training to ensure a basic understanding of systematic reviews. Once the electronic search is complete, the records will be integrated and managed by EndNote software (V.21). Two authors (TAN and MDS) will each independently review the titles and abstracts of accessed records. We will obtain the full text of all possibly relevant studies for further assessment by four authors (TAN, MDS, MJT and TSP) within the lenses of the eligibility criteria. Excluded studies will be recorded with explanations. Any discrepancy will be resolved by discussion among the four authors; where necessary, two authors (EN-BQ and TS) would be consulted for arbitration. Similarly, authors of eligible studies would be contacted (via

email correspondence) for additional information and clarifications where needed. Furthermore, this review will use a study PRISMA-2020 flow diagram format to present the searching and screening of records.

Data collection and data items

The steps involved in the data collection process are as follows: initially, after importing the studies into EndNote (V.21), the primary data extraction will occur. We will design a data extraction form with columnal spaces for author(s) and the year of publication, the country of study, the objectives, study design, sample size, key findings and study quality rating.

Risk of bias in individual studies

We will use the Mixed Methods Appraisal Tool checklist for quality appraisal of the eligible studies.[60] Two authors (TAN and MDS) will each independently fill the checklist on the appraisal tool. Any discrepancy will be resolved by discussion between the two authors (TAN and MDS) and the third author (MJT) will be consulted for arbitration when necessary.

Data synthesis

A decision to pool the prevalence estimates in a meta-analysis would be based on the extent of heterogeneity (I^2 statistic) across the included prevalence studies.[61] If a high I^2 statistic (>70%) is obtained, no meta-analysis will be performed; in that case, the estimates would be synthesised descriptively using the IQRs and associated median values of the reported prevalence rates. Where low-to-moderate I^2 statistic (≤70%) is obtained, the prevalence estimates would be pooled in a meta-analysis—in a random effects model—using the Jamovi software (V.2.4.11 for Windows).[62] We will analyse subgroups separately if authors find differences in clinical and methodological factors. Otherwise, we will not combine the data, but instead, a detailed summary will be created using a narrative-qualitative approach to provide a comprehensive overview of the factors associated with alcohol use reported in the studies included.

Subgroup analysis

If we find enough studies that are similar, we will conduct a subgroup analysis. Our intention is to categorise the findings based on the reported prevalence, and associated factors of alcohol use among school-going adolescents.

Sensitivity analysis

We will use the leave-one-out method to identify the cause of heterogeneity in a dataset with significant variations. In this approach, we will exclude one study at a time and check if the level of heterogeneity decreases. By conducting this test on each study, we can pinpoint the source of the heterogeneity.

Ethics

Ethics approval is not required since the study will not involve gathering data directly from individual school-going adolescents, nor will it violate their privacy.

DISCUSSION

This systematic review will provide an assessment of the current state of the prevalence of alcohol use among school-going adolescents in the SADC region and its associated factors since the emergence of the COVID-19 pandemic. Conclusions drawn from this review may benefit school-going adolescents who use alcohol by helping them understand the evolving factors associated with alcohol use and its implications in the context of the pandemic and the aftermath. Moreover, the findings may offer valuable insights to support clinicians and educators in diagnosing or identifying school-going adolescents with alcohol use tendencies, considering the potential changes brought about by the pandemic. Policymakers and leaders might also gain essential information to develop appropriate prevention guidelines that account for the unique challenges posed by COVID-19. The results of the proposed systematic review could identify gaps in knowledge and provide a roadmap for future research aimed at improving outcomes for school-going adolescents facing alcohol use problems during pandemics.

Amendments

While amendments to the methods of this proposed review are not expected, in the event of any needed changes to the protocol, we will describe them in the 'Amendments' section of this protocol the changes necessary and their justification, plus the date of each change. The PROSPERO registration for this review would also be amended to reflect all important corresponding changes to the protocol. All amendments would be approved by the authors.

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Contributors All authors have contributed to the conceptualisation of the study. The manuscript protocol was drafted by TAN, MDS, MJT and TSP and was revised by TS and EN-BQ. All authors collaborated on developing the search strategy. MDS and TAN will independently screen potential studies, extract data from included studies, assess bias risk and synthesis data. MJT and TSP will resolve disputes and prevent errors in the study. All authors approved the protocol's publication.

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