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Effects of Life Orientation, the Integrated School Health Programme, and Health-Promoting School Frameworks on Health and Educational Outcomes Among School-Going Learners in South Africa: A Systematic Review protocol

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ADMINISTRATIVE INFORMATION

Support - No support.

Review stage at the time of initial registration - Preliminary searches.

Conflicts of interest - Mrs Rangolo N declare that they have no known competing financial interests, commercial affiliations, or personal relationships that could have appeared to influence the design, conduct, or reporting of this systematic review. Prof. T. G. Tshitangano has authored primary research within the field of school health in South Africa. To prevent intellectual bias, any potentially eligible study authored or co-authored by her will be screened, extracted, and appraised independently by Mrs Rangolo N (PhD Candidate).

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 November 2026 and was last updated on 12 November 2026.

INTRODUCTION

Review question / Objective Primary review question
What are the effects of Life Orientation (LO), the Integrated School Health Programme (ISHP), and Health-Promoting Schools (HPS) frameworks on health and educational outcomes among primary and secondary school learners in South Africa, and what institutional factors influence their implementation?

Secondary Review Questions
What empirical evidence is available on the effectiveness of LO, Life Skills, ISHP, and HPS interventions in improving learner psychosocial well-being, self-efficacy, health literacy, physical activity, sexual and reproductive health, and clinical service uptake in South African schools?
To what extent do these school-based health frameworks impact objectively measured or reported school attendance, academic attainment, grade progression, retention, and school completion?
How do implementation fidelity, resource disparities across school quintiles (particularly non-fee-paying Quintiles 1–3 township and rural schools), community and parental gatekeeping, and intersectoral coordination across the Department of Basic Education (DBE), Department of Health (DoH), and Department of Social Development (DSD) facilitate or constrain intervention outcomes?.

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Rationale Health and education are mutually reinforcing determinants of human development, with physical wellness, emotional stability, and adequate nutrition underpinning cognitive focus, working memory, attention span operate as mutually reinforcing determinants of human development, with physical wellness, emotional stability, and adequate nutrition underpinning cognitive focus, working memory, attention spans, regular school attendance, and academic achievement. Conversely, formal education strengthens health literacy, personal agency, and long-term socioeconomic opportunity. In South Africa, persistent spatial and socioeconomic inequalities create adverse learning environments, particularly within non-fee-paying Quintiles 1–3 township and rural schools. Learners in these settings frequently encounter intersecting barriers, including food insecurity, trauma, violence, substance misuse, uncorrected sensory impairments, and early, unintended pregnancy, that drive cognitive disengagement, chronic absenteeism, grade repetition, and premature school exit. To mitigate these barriers, South Africa implements three school-based frameworks: Life Orientation (LO), a compulsory Grades R–12 subject fostering holistic personal, social, physical, and career development; the Integrated School Health Programme (ISHP), a multi-departmental initiative by the Departments of Basic Education (DBE), Health (DoH), and Social Development (DSD) providing health screening, barrier identification, vaccination, and referrals aligned with the Screening, Identification, Assessment, and Support (SIAS) policy; and the World Health Organization (WHO) and UNESCO Health-Promoting Schools (HPS) framework, a whole-school systems approach integrating health policies, environmental safety, curriculum delivery, and community partnerships. However, these frameworks operate within disconnected structural silos across departments and provinces. Furthermore, while international meta-analyses show that whole-school interventions improve health markers, evidence confirming their direct impact on educational attainment remains limited. Within South Africa, empirical studies are scattered across disciplinary literatures and predominantly document perceived or anticipated outcomes rather than objectively measured academic progression. This systematic review is therefore needed to synthesise empirical evidence on how LO, ISHP, and HPS affect learner health and educational outcomes, while identifying institutional facilitators and barriers to inform integrated policy and practice.

The rationale for this review rests on the following four arguments :

Health interventions restore children's overall functioning, working memory, and attention spans needed for classroom success, whereas formal schooling enhances health literacy and socioeconomic mobility.

High vulnerability in Quintiles 1–3 schools: Ongoing spatial and socioeconomic disparities expose township and rural learners to nutrition deficits, trauma, violence, substance misuse, untreated sensory impairments, and early pregnancy, leading to chronic absenteeism, grade repetition, and premature school dropout.

Although LO, ISHP, and HPS share the objective of advancing learner welfare, they operate in separate structural silos, LO is delivered as a classroom curriculum subject, ISHP relies on visiting primary healthcare teams, and HPS is implemented unevenly across provinces.

Existing South African literature is scattered across disciplines and focuses mainly on health knowledge, career aspirations, or educator perceptions rather than tracking objective educational metrics such as attendance logs, quarterly academic averages, Grade 12 National Senior Certificate (NSC) results, or school completion rates.

No existing or registered systematic review evaluates the combined effectiveness and implementation of South Africa's three core school health and wellness frameworks, Life Orientation (LO), the Integrated School Health Programme (ISHP), and Health-Promoting Schools (HPS), across both learner health and educational outcomes. Prior South African reviews have examined isolated components, such as Comprehensive Sexuality Education within LO (Koch & Wehmeyer, 2021) or recent adolescent mental health awareness initiatives (Mahada, Tshitangano & Mphasha, 2026), without synthesising clinical screening and referral systems (ISHP), whole-school governance (HPS), and objective educational attainment (attendance, grade progression, and retention) within a single convergent mixed-methods systematic review.

Condition being studied The condition being studied is school-based child and adolescent health, psychosocial well-being, health literacy, and educational attainment in South Africa.

This systematic review examines physical, mental, developmental, and reproductive health domains, as well as educational functioning, among primary and secondary school learners in South Africa. Specifically, the review investigates school-based health promotion and barrier-mitigation frameworks, Life Orientation (LO), the Integrated School Health Programme (ISHP), and Health-

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Promoting Schools (HPS), designed to address intersecting health and social determinants of learning. These determinants include food insecurity, interpersonal trauma and violence, substance misuse, uncorrected visual, auditory, oral, and developmental impairments, chronic conditions (such as epilepsy), physical inactivity, and early or unintended adolescent pregnancy. The primary health domains studied encompass psychosocial well-being, self-efficacy, health literacy, physical activity, adolescent sexual and reproductive health (SRH), and clinical health service uptake. Concurrently, the review examines how these health conditions and school-based interventions affect educational domains, including cognitive engagement, school attendance and absenteeism, academic attainment, grade progression, learner retention, and school completion. The following are the domain keywords:

Primary Health Domains: Child and adolescent health, school health services, mental and psychosocial well-being, health literacy, physical activity, adolescent sexual and reproductive health (SRH), and early screening and clinical referral for sensory and developmental impairments.

Intersecting Health and Social Barriers: Food insecurity, trauma and violence, substance misuse, chronic illness stigma, and unintended adolescent pregnancy.

Linked Educational Domains: Cognitive focus and working memory, school attendance, academic performance, grade progression, retention, and school completion.

METHODS

Search strategy A comprehensive literature search will be conducted across 10 electronic bibliographic databases: PubMed/MEDLINE, Scopus, Web of Science, Core Collection, ERIC, PsycINFO, CINAHL, Africa-Wide Information, Sabinet African Journals, SciELO South Africa, and Google Scholar. To capture unpublished evaluations and policy reports, grey literature will be searched across the South African National Electronic Theses and Dissertations (ETD) Portal, institutional university repositories, and official portals of the Department of Basic Education (DBE), Department of Health (DoH), World Health Organization (WHO), and UNESCO. Reference lists of all included studies will also be screened manually. Searches will cover English-language records from database inception through the prospective search cutoff date (November 2026). Search Terms by Concept Block Search terms are structured into four PICO/PECO concept blocks combining controlled vocabulary (such as MeSH terms in PubMed/MEDLINE), free-text keywords, phrase quotation marks, and truncation (*).

Block 1 — Intervention / Framework: "Life Orientation", "Life Skills", "Integrated School Health Programme", "Integrated School Health Policy", "school health service*", and "health promoting school*".

Block 2 — Population: learner*, student*, adolescent*, and child*.

Block 3 — Health and Educational Outcomes: Educational terms include attendance, absenteeism, achievement, performance, progression, retention, dropout, completion, and "educational outcome*". Health-related outcome terms added for systematic review alignment include "health literacy", "psychosocial well-being", "mental health", wellbeing, "self-efficacy", "physical activity", "sexual and reproductive health", screening, and referral*.

Block 4 — Geographic Context: "South Africa" and all nine provinces—Limpopo, Gauteng, "KwaZulu-Natal", Mpumalanga, "Eastern Cape", "Western Cape", "Northern Cape", "North West", and "Free State". Master Boolean Search StringPlaintext("Life Orientation" OR "Life Skills" OR "Integrated School Health Programme" OR "Integrated School Health Policy" OR "school health service*" OR "health promoting school*")

AND

(learner* OR student* OR adolescent* OR child*)

AND

(attendance OR absenteeism OR achievement OR performance OR progression OR retention OR dropout OR completion OR "educational outcome*" OR "health literacy" OR "psychosocial well-being" OR "mental health" OR wellbeing OR "self-efficacy" OR "physical activity" OR "sexual and reproductive health" OR screening OR referral*)

AND

("South Africa" OR Limpopo OR Gauteng OR "KwaZulu-Natal" OR Mpumalanga OR "Eastern Cape" OR "Western Cape" OR "Northern Cape" OR "North West" OR "Free State")

Database-specific field tags and subject headings will be adapted for each platform, and the complete search strings and execution dates will be archived on OSF/Figshare in accordance with PRISMA-S reporting standards.

Participant or population This review addresses school-going learners enrolled in South African primary and secondary school phases across all nine provinces and all school quintiles, including non-fee-paying Quintiles 1–3 township and rural schools as well as specialised and vocational school settings. Eligible learner populations include general student cohorts alongside

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vulnerable subgroups such as learners with disabilities or chronic health conditions, young mothers, and adolescents from child-headed households. To capture implementation and system-level outcomes, the review also includes adult stakeholders who directly deliver programs or report on learner development, specifically Life Orientation educators, visiting primary healthcare practitioners, school managers, parents, and higher-education officers involved in secondary-to-tertiary transition pathways. Studies are excluded if they examine "life orientation" exclusively as an adult psychological disposition or focus on tertiary-sector populations disconnected from primary- or secondary-to-tertiary transition pathways.

Participant Inclusion and Exclusion Criteria

Included Populations
Primary and Secondary School Learners: School-going children and adolescents across Grades R through 12 in South African primary and secondary phases.
Socioeconomic and Institutional Subgroups: Learners across all nine South African provinces and all school quintiles, with particular attention to non-fee-paying Quintiles 1–3 township and rural schools, as well as specialised and vocational schools.
Vulnerable Learner Groups: Learners experiencing intersecting health and social barriers, including adolescents with physical, sensory, or intellectual disabilities, learners living with chronic conditions (such as epilepsy), young mothers, and adolescents in child-headed households.
Educators and School Leadership: Life Orientation and Life Skills teachers, school management teams, and district education officials directly reporting on curriculum delivery or learner development.
Health, Social, and Transition Personnel: Visiting primary healthcare teams and school nurses delivering Integrated School Health Programme (ISHP) services, social workers, parents and School Governing Body members, and university officers facilitating secondary-to-higher-education transitions.

Excluded Populations
Adult Psychological Cohorts: Studies investigating "life orientation" solely as a general adult psychological disposition rather than the South African school curriculum.
Disconnected Tertiary Cohorts: University or higher-education student populations that are disconnected from primary- or secondary-to-tertiary transition pathways.

Intervention This systematic review evaluates three school-based policy, curricular, and service-delivery frameworks implemented in South Africa to mitigate health-related barriers to learning, namely, Life Orientation (LO) (including Life Skills), the Integrated School Health Programme (ISHP), and the Health-Promoting Schools (HPS) framework. Eligible interventions encompass compulsory classroom-based health, physical, psychosocial, and career education delivered from Grades R through 12 under the Curriculum and Assessment Policy Statement (CAPS); multi-departmental clinical screening, vaccination, sexual and reproductive health (SRH) services, and referral pathways delivered by visiting primary healthcare teams under the ISHP and Screening, Identification, Assessment, and Support (SIAS) policy; and whole-school systems interventions that align school governance, physical safety, sanitation, curriculum delivery, and family-community partnerships under World Health Organisation (WHO) and UNESCO HPS guidelines. Studies that examine "life orientation" solely as an adult psychological disposition, rather than as a school-based educational or health intervention, are excluded.

Breakdown of Evaluated Interventions
Life Orientation (LO) and Life Skills Curriculum
LO is a compulsory curriculum subject taught from Grades R through 12 to advance holistic personal, social, physical, and career development (Department of Basic Education [DBE], 2011).

Specific curricular components evaluated include Physical Education (PE), learner-centred cooperative pedagogies under CAPS, targeted health literacy modules (such as classroom epilepsy education), career adaptability and secondary-to-higher-education transition guidance, and frontline school-based psychosocial and pastoral support.

Integrated School Health Programme (ISHP)
ISHP is a multi-departmental service framework established jointly by the DBE, Department of Health (DoH), and Department of Social Development (DSD) (DBE & DoH, 2012), aligned with the Screening, Identification, Assessment, and Support (SIAS) policy (DBE, 2014).

Delivered primarily through visiting primary healthcare and school nursing teams, ISHP interventions include school-based health screening for visual, auditory, oral, and developmental vulnerabilities; barrier identification; vaccination; adolescent sexual and reproductive

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health (SRH) education and services; and clinical referral pathways.

Health-Promoting Schools (HPS) Framework
Developed under World Health Organization (WHO) and UNESCO guidelines (WHO & UNESCO, 2021), HPS operates as a comprehensive whole-school systems approach rather than an isolated classroom lesson or periodic screening.

HPS interventions integrate health, safety, and well-being directly into school governance and policies, curriculum delivery, physical school environments (such as clean sanitation, private examination spaces, safe play facilities, and anti-bullying climates), and collaborative partnerships with parents, School Governing Bodies, and community health resources.

Excluded Interventions
Non-school interventions or studies investigating "life orientation" exclusively as an adult psychological disposition are excluded.

Comparator Because this systematic review synthesises quantitative, qualitative, and mixed-methods empirical studies, eligible comparator conditions include standard school instruction or usual school health care without specialised interventions, pre-intervention baselines in before-and-after studies, and comparisons across schools or provinces with differing levels of implementation fidelity. Where studies evaluate Life Orientation, which is a compulsory curriculum subject from Grades R through 12 in South Africa, comparators include routine textbook-based instruction versus enhanced, learner-centred, or specialised curricular modules. Furthermore, because empirical research on these frameworks in South Africa consists predominantly of qualitative and single-case designs rather than randomised controlled trials or quasi-experimental cohorts, non-comparative empirical studies will be retained and will not be excluded solely for lacking a control group.

The following are eligible Comparator Categories in the form of PICO/PECO Breakdown:
Standard Schooling / Usual Care: Schools or learner cohorts receiving routine classroom instruction or standard primary healthcare services without active Integrated School Health Programme (ISHP) screening and referral teams or whole-school Health-Promoting Schools (HPS) governance.
Standard vs Enhanced Curriculum Delivery: Because Life Orientation (LO) is mandatory across Grades R–12, comparators include standard curriculum delivery (such as traditional textbook-based lessons) versus enhanced participatory pedagogies, targeted health literacy modules, or individualised career-counselling interventions.
Pre-Intervention Baselines: Baseline measurements of learner health, psychosocial well-being, or educational functioning collected prior to intervention exposure in before-and-after or single-case designs.
Differential Implementation Fidelity: Comparisons across schools, quintiles, or provinces with varying implementation fidelity, such as isolated, departmental silo delivery versus integrated, whole-school HPS alignment.
Non-Comparative Empirical Designs: Qualitative and descriptive studies without a formal control group will be included to capture institutional facilitators, barriers, and perceived learner outcomes.

Study designs to be included To address both intervention effectiveness and implementation fidelity, this systematic review will include all primary empirical study designs encompassing quantitative, qualitative, and mixed-methods research evaluating Life Orientation (LO), the Integrated School Health Programme (ISHP), or Health-Promoting Schools (HPS) frameworks in South Africa. Including diverse empirical designs ensures that both measurable learner outcomes and real-world institutional barriers are captured across South African school contexts.

Eligibility criteria Because this systematic review synthesises quantitative, qualitative, and mixed-methods empirical studies, eligible comparator conditions include standard school instruction or usual school health care without specialised interventions, pre-intervention baselines in before-and-after studies, and comparisons across schools or provinces with differing levels of implementation fidelity. Where studies evaluate Life Orientation, which is a compulsory curriculum subject from Grades R through 12 in South Africa, comparators include routine textbook-based instruction versus enhanced, learner-centred, or specialised curricular modules. Furthermore, because empirical research on these frameworks in South Africa consists predominantly of qualitative and single-case designs rather than randomised controlled trials or quasi-experimental cohorts, non-comparative empirical studies will be retained and will not be excluded solely for lacking a control group.

Information sources To ensure exhaustive coverage of peer-reviewed and unpublished South African literature, this systematic review will search

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electronic bibliographic databases, grey literature repositories, official policy portals, trial registries, and supplementary citation networks. Searches will be restricted to English-language records published from database inception through November 2026.

Electronic Bibliographic Databases

Systematic searches will be conducted across 10 electronic databases spanning health sciences, education, psychology, and African regional scholarship: PubMed/MEDLINE (biomedical, clinical, and public health literature) Scopus (multidisciplinary peer-reviewed literature) Web of Science Core Collection (multidisciplinary science and social science indexes) ERIC (Education Resources Information Center) PsycINFO (behavioural, developmental, and mental health research) CINAHL (Cumulative Index to Nursing and Allied Health Literature) Africa-Wide Information (multidisciplinary African research database) Sabinet African Journals (southern African academic periodicals) SciELO South Africa (open-access South African scholarly journals) Google Scholar (broad academic web indexing for supplementary retrieval) Grey

Literature and Official Policy Portals

Because South African program evaluations and postgraduate studies are frequently disseminated outside indexed journals, structured searches will be executed across the following grey literature sources:

Academic Theses and Dissertations: The South African National Electronic Theses and Dissertations (ETD) Portal and institutional university repositories across South Africa.

Government and International Agency Portals: Official websites and document repositories of the Department of Basic Education (DBE), Department of Health (DoH), World Health Organisation (WHO), and UNESCO.

Trial Registers, Author Contact, and Citation Searching

To strengthen methodological rigour and minimise retrieval bias, three supplementary search mechanisms will be incorporated:

Trial and Protocol Registers: Searches will be conducted in the Pan African Clinical Trials Registry (PACTR), ClinicalTrials.gov, PROSPERO, and the Open Science Framework (OSF) to identify ongoing, registered, or unpublished school health interventions in South Africa.

Contact with Authors and Librarians: To prevent the loss of inaccessible records, such as irretrievable institutional repository documents or conference abstracts lacking full data, reviewers will contact corresponding authors and university librarians via email to request full-text manuscripts or clarification on study outcomes.

Reference List and Citation Tracking: Manual backward screening of reference lists and forward citation tracking of all included studies will be performed to capture any eligible empirical reports missed by electronic database queries.

Main outcome(s) This systematic review evaluates two co-primary outcome domains, learner health outcomes and educational outcomes, alongside secondary implementation outcomes across South African primary and secondary schools. Primary health outcomes include psychosocial well-being, self-efficacy, health literacy, physical activity, sexual and reproductive health (SRH) outcomes, and health service uptake (including screening, vaccination, and clinical referrals). Primary educational outcomes include verified or recorded school attendance and absenteeism, academic attainment (such as quarterly academic averages and Grade 12 National Senior Certificate [NSC] results), grade progression, learner retention, and school completion. Secondary implementation outcomes include fidelity, reach, intersectoral coordination across the Departments of Basic Education (DBE), Health (DoH), and Social Development (DSD), and program acceptability. All extracted outcomes will be classified by evidence type as directly measured, perceived, or anticipated. Data from all reported assessment timepoints, spanning pre-intervention baselines, immediate post-intervention evaluations, periodic academic terms, Grade 12 examinations, and secondary-to-tertiary transition periods, will be extracted. Where quantitative data permit, effect measures will include risk ratios (RR) or odds ratios (OR) for dichotomous outcomes and mean differences (MD) or standardised mean differences (SMD) with 95% confidence intervals for continuous scores; qualitative and non-poolable data will be synthesised standardized mean differences (SMD) with 95% confidence intervals for continuous scores; qualitative and non-poolable data will be synthesized narratively and thematically.

Additional outcome(s) In addition to primary educational and direct clinical health outcomes, this review evaluates secondary implementation and intermediate psychosocial outcomes to explain how school-based frameworks operate in practice, namely, Implementation Fidelity and Reach, which is the extent to which Life Orientation (LO), the Integrated School Health Programme (ISHP), and Health-Promoting Schools (HPS) are delivered as intended across South African provinces and non-fee-paying Quintiles 1–3

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schools. Specific indicators include adherence to learner-centred Curriculum and Assessment Policy Statement (CAPS) pedagogies rather than rote textbook instruction, protection of Physical Education instructional time, and attainment of HPS infrastructure benchmarks such as clean sanitation and private examination spaces. Intersectoral Coordination and Referral Continuity: Operational alignment across the Departments of Basic Education (DBE), Health (DoH), and Social Development (DSD), specifically assessing whether learners identified through school-based health screenings are successfully linked to follow-up clinical care. Acceptability and Educator Well-Being: Program acceptability among parents, School Governing Bodies, and local traditional structures, particularly regarding adolescent sexual and reproductive health (SRH) education and services, alongside educator workload outcomes, including role strain, burnout, and secondary traumatic stress resulting from informal pastoral crisis mediation. Intermediate Psychosocial and Behavioural Indicators: Secondary learner-level changes that support long-term academic progression, including self-efficacy, career adaptability, reduced peer stigma, improved classroom behaviour, and study habits. All additional outcomes will be categorised by evidence type as directly measured, perceived, or anticipated across all reported assessment time points, and synthesised narratively and thematically.

Data management All retrieved bibliographic records from electronic databases and grey literature searches will be imported into an EndNote database to consolidate citations and remove duplicates. Deduplicated records will be organized into dedicated screening folders for independent title, abstract, and full-text assessment by two reviewers (Prof. T. G. Tshitangano and the PhD candidate Mrs Rangolo N). Disagreements during study selection will be resolved through consensus discussion between the two reviewers, with a third independent reviewer available for adjudication if any dispute remains unresolved. All inclusion and exclusion decisions, along with specific reasons for full-text exclusions, such as wrong geographic context, irrelevant population or construct, conference abstracts, duplicate data, or irretrievable full texts, will be logged systematically to populate a PRISMA 2020 flow diagram. Data from included studies will be extracted and managed using a standardized, piloted data extraction matrix maintained in Microsoft Excel. This structured matrix will systematically record study identifiers, geographic setting, school phase, methodology, intervention mechanics, reported outcomes, classified as directly measured, perceived, or anticipated, and implementation constraints. Methodological quality appraisal scores generated using the Mixed Methods Appraisal Tool (MMAT) version 2018 will be recorded within the same master workbook alongside the extracted study characteristics. To maintain version control and prevent data loss, full-text PDFs, EndNote libraries, screening logs, and data extraction spreadsheets will be stored in a password-protected, cloud-backed shared folder with automated version history accessible only to the review team. Each reviewer will complete data extraction and quality appraisal on separate, timestamped copies before merging records into a verified master dataset. Upon protocol registration and review completion, the final database search strings, blank extraction matrix, and anonymized dataset will be deposited in an open-access repository (such as the Open Science Framework or Figshare) to ensure long-term preservation and transparency.

Quality assessment / Risk of bias analysis Methodological quality and risk of bias across all included primary studies will be independently evaluated using the Mixed Methods Appraisal Tool (MMAT), version 2018 (Hong et al., 2018). The MMAT is ideally suited to this systematic review because it provides a single, validated framework capable of appraising diverse empirical designs, including qualitative studies, quantitative randomised controlled trials, quantitative non-randomised studies, quantitative descriptive studies, and mixed-methods designs, without requiring incompatible scoring scales across study types. Each eligible study will first be evaluated against the two universal MMAT screening questions, which verify whether the research questions are clearly stated and whether the collected data allow those questions to be addressed. Studies passing initial screening will then be appraised against the five methodological criteria specific to their study design category. For qualitative studies, appraisal examines the appropriateness of the qualitative approach, adequacy of data collection methods, coherence between data and interpretation, and substantiation of findings. For quantitative studies, evaluation focuses on sampling strategy and representativeness, appropriateness of outcome measurements, completeness of outcome data, adherence to the intervention, and accounting for confounders. For mixed-methods studies, appraisal assesses the rationale for using a mixed-methods design, effective integration of qualitative and quantitative components, interpretation of divergences between datasets, and adherence to

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the quality criteria of each constituent method. Two reviewers (Prof. T. G. Tshitangano and the PhD candidate, Mrs Rangolo N) will independently conduct quality and risk-of-bias assessments for every included full-text report. Any scoring discrepancies between the two reviewers will be resolved through consensus discussion, with a third independent reviewer available for adjudication if any dispute remains unresolved. To minimise intellectual bias, any potentially eligible primary study co-authored by a member of the review team will be appraised independently by the uninvolved reviewer. In accordance with MMAT methodological guidance, we will avoid calculating a single overall numerical score; instead, we will report criterion-by-criterion ratings transparently in a tabular summary. Studies will not be excluded on the basis of low methodological quality scores. Instead, we will integrate quality appraisal ratings directly into the synthesis to contextualise the strength, credibility, and transferability of the synthesised findings and, where quantitative data permit, to inform sensitivity analyses examining whether study quality alters observed intervention effects.

Strategy of data synthesis Strategy for Data Synthesis
Because the empirical evidence evaluating Life Orientation (LO), the Integrated School Health Programme (ISHP), and Health-Promoting Schools (HPS) frameworks in South Africa spans diverse methodological designs, this systematic review will employ a convergent integrated approach to synthesize quantitative, qualitative, and mixed-methods data.

Quantitative Synthesis
Although initial mapping found a predominance of qualitative research with a lack of randomised controlled trials (RCTs) or longitudinal datasets, the updated prospective systematic review search will evaluate all new quantitative outcomes. Where two or more quantitative studies evaluate comparable school-based interventions and report sufficiently homogeneous objective health metrics or educational outcomes (e.g., recorded school attendance, academic attainment, or grade progression), a random-effects meta-analysis will be conducted. Effect measures, such as risk ratios (RR) for dichotomous data and standardized mean differences (SMD) for continuous data, will be pooled with 95% confidence intervals. If clinical, methodological, or statistical heterogeneity precludes meta-analysis, quantitative data will be analyzed using Synthesis Without Meta-analysis (SWiM) guidelines. Findings will be narratively synthesized and tabulated by intervention framework (LO, ISHP, or HPS) and outcome domain (health vs. educational), clearly distinguishing directly measured, perceived, and anticipated outcomes.

Qualitative Synthesis
Given that existing South African research in this domain heavily reflects qualitative phenomenology, case studies, and educator perceptions, thematic synthesis will form a core analytical component. Extracted qualitative findings regarding intervention mechanics, pedagogical content knowledge, resource deficits, and implementation constraints will be line-by-line coded and grouped into descriptive themes. These descriptive themes will then be translated into analytical themes to map the structural facilitators and barriers affecting learner development, such as institutional silos, chronic fatigue among educators delivering psychosocial support, and cultural or parental gatekeeping regarding sexual and reproductive health services.

Mixed-Methods Integration
A convergent integrated synthesis will merge the quantitative and qualitative streams. Qualitative findings detailing institutional barriers (e.g., lack of physical infrastructure, uncoordinated clinical referral pathways, and accountability deficits) will be mapped alongside quantitative effectiveness estimates to explain why interventions succeed or fail in specific educational contexts.

Subgroup and Sensitivity Analyses
Where data permit, subgroup analyses will stratify outcomes to examine contextual disparities. Data will be analyzed by intervention framework (LO vs. ISHP vs. HPS), school quintile (specifically comparing well-resourced schools to non-fee-paying Quintiles 1–3 township and rural schools), and geographic distribution (comparing densely researched provinces like Gauteng and Limpopo against historically understudied rural provinces). Additionally, sensitivity analyses will be conducted by temporarily excluding primary studies appraised with high risk of bias or low methodological quality on the Mixed Methods Appraisal Tool (MMAT), determining whether study quality significantly alters the synthesized conclusions regarding learner outcomes.

Subgroup analysis To explore potential causes of heterogeneity in intervention effectiveness and implementation outcomes, subgroup analyses will be conducted where sufficient quantitative or qualitative data permit. The systematic review will stratify synthesised data across several key contextual and demographic variables identified as

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critical determinants of educational and health outcomes in South Africa.

1. Socioeconomic Context and School Quintiles

Given the marked spatial and socioeconomic inequalities in the South African education system, outcomes will be compared between non-fee-paying Quintiles 1–3 township and rural schools and higher-quintile well-resourced schools. This will determine how resource disparities and infrastructure deficits (such as a lack of private examination spaces or safe play facilities) affect the implementation of health and educational interventions.

2. Intervention Framework

Data will be stratified by the specific policy or curricular framework being evaluated: Life Orientation (LO) and Life Skills, the Integrated School Health Programme (ISHP), or the Health-Promoting Schools (HPS) framework. This comparison will highlight the differential impacts of classroom-based pedagogical interventions, visiting clinical screening services, and comprehensive whole-school systems approaches.

3. Geographic Distribution

Findings will be analysed by provincial location to account for variations in governance and implementation fidelity across South Africa's nine provinces. Specifically, outcomes from historically well-researched areas like Gauteng and Limpopo will be compared against data from other understudied rural or inter-provincial sites.

4. Learner Demographics and Vulnerability:

Outcomes will be stratified by school phase, comparing primary school learners with secondary school adolescents transitioning to higher education or post-school vocational qualifications. Additionally, where data are available, targeted analyses will examine effects on vulnerable learner subgroups, including adolescents with intellectual disabilities or learning barriers, young mothers facing early unintended pregnancy, child-headed households, and learners with chronic conditions such as epilepsy.

5. Perspective of Outcome Reporting:

Because existing data heavily reflect adult perspectives, outcomes will be stratified by the participant base reporting the data: objectively measured or self-reported outcomes from direct learner cohorts versus perceived or anticipated outcomes reported by educators, adult implementers, and school managers. These subgroup analyses will provide granular insights into which interventions work best for different vulnerable populations under varied resource constraints, thereby informing targeted policy recommendations for the Department of Basic Education, Department of Health, and Department of Social Development.

Sensitivity analysis To determine the robustness and reliability of the synthesised findings regarding Life Orientation (LO), the Integrated School Health Programme (ISHP), and Health-Promoting Schools (HPS), sensitivity analyses will be conducted. This analytical step ensures that the overall conclusions are not unduly influenced by methodological weaknesses, publication types, or statistical assumptions.

Methodological Quality and Risk of Bias: The primary sensitivity analysis will leverage the quality appraisal results derived from the Mixed Methods Appraisal Tool (MMAT) version 2018. The synthesis will be re-run by temporarily excluding primary studies identified as having a high risk of bias or substantial methodological flaws, such as studies with poor sample representativeness, high participant attrition, or a lack of coherence between qualitative data and interpretations. Reviewers will compare these restricted findings against the primary synthesis to evaluate whether low-quality evidence significantly inflated quantitative intervention effect sizes or skewed qualitative thematic networks.

Publication Status and Grey Literature: Because this systematic review explicitly includes grey literature, such as South African university theses, dissertations, and official government evaluations from the Departments of Basic Education and Health, a sensitivity analysis will compare findings from peer-reviewed journal articles with be performed by comparing findings from peer-reviewed journal articles against those from unpublished sources. This tests for publication bias, determining whether published peer-reviewed studies report systematically different, or more favourable, learner outcomes and implementation successes than independent academic theses.

Study Design Influence: If sufficient quantitative data emerge from the updated search to permit pooling, sensitivity analyses will stratify results by empirical design type. Outcomes from robust designs, such as quasi-experimental cohorts or the rare cluster-randomised trial, will be compared with descriptive cross-sectional quantitative data to determine whether derived from robust designs, such as quasi-experimental cohorts or the rare cluster-randomised trial, will be compared against descriptive cross-sectional quantitative data to ascertain if weaker observational designs overestimate the impact of school-based health frameworks.

Statistical Assumptions and Missing Data: For any quantitative meta-analyses or Syntheses Without Meta-analysis (SWiM), sensitivity testing will

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evaluate the impact of statistical assumptions made during data extraction. If missing statistical values (such as standard deviations) were imputed, estimated, or converted to allow pooling, the meta-analysis will be repeated using only those primary studies that provided complete, natively reported datasets.
The results of all sensitivity analyses will be transparently documented in the final review using summary tables and narrative comparisons, clearly defining the degree of confidence that South African policymakers and educational stakeholders can place in the resulting evidence base.

Language restriction Strict language limits will be applied. The search strategy and study inclusion criteria are restricted exclusively to English-language publications and grey literature across all electronic databases and repositories.

Country(ies) involved South Africa is the only country in which the study will be carried out.

Other relevant information 1. Review Team Members & Roles
Registries require named contributors and their specific methodological roles (e.g., screening, extraction, arbitration):

Primary Reviewer / PhD Candidate: Mrs Rangolo N, University of Limpopo, Department of Public Health and Health Systems, N/A department of Public Health and Health Systema, N/A] - Protocol drafting, search execution, title/abstract screening, full-text screening, data extraction, quality appraisal, and manuscript drafting.

Supervisor / Co-Reviewer: Prof. T. G. Tshitangano [University of Limpopo Department of Public Health and Health Systems, 0000-0002-65174242 - Protocol supervision, independent dual screening, independent data extraction, quality appraisal verification, and manuscript review.

2. Review Timeline & Stage of Review

Anticipated Start Date: [12 November 2026]

Anticipated Completion Date: [30 May 2027]

Current Stage at Registration: Preliminary searches completed; formal screening of search results against eligibility criteria not yet started.

3. Funding Sources & Sponsors
This review is not funded

4. Conflicts of Interest
Prof. T. G. Tshitangano has authored primary research within the field of school health in South Africa. To prevent intellectual bias, the PhD student reviewer will independently screen, extract, and appraise any potentially eligible study authored or co-authored by a review team member will be screened, extracted, and appraised independently by the PhD student reviewer.

5. Ethical Approval & Dissemination Plan
Formal institutional ethical approval is not required because this systematic review synthesises exclusively secondary, publicly available data.

Dissemination:
Findings will be submitted to a peer-reviewed public health or education journal, shared via institutional repositories, and summarized for relevant South African policy stakeholders (DBE, DoH, and DSD).

6. Data Availability & Open Science Links
Data will be obtainable via email at takalani.tshitangano@ul.ac.za

Protocol Amendments
Any post-registration deviations from the protocol will be documented with dates and rationales as a formal version update on the registry.

Keywords Educational attainment; Health-Promoting Schools; Implementation fidelity; Integrated School Health Programme; Intersectoral collaboration; Learner health; Life Orientation; School health services; South.

Dissemination plans The findings of this systematic review will be disseminated through academic, institutional, and policy channels to maximize scholarly impact and practical uptake across South Africa's school health and education sectors.

Peer-Reviewed Publication
The completed review will be formatted in strict accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines and submitted for publication in a high-impact, open-access public health or educational research journal (such as BMC Public Health, Health Education Research, or the South African Journal of Education).

Doctoral Thesis and Open-Access Archiving
The review will form a foundational chapter of the primary reviewer's PhD thesis and will be deposited in the university's institutional repository upon examination. To ensure transparency and

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reproducibility, the final database search strings, PRISMA screening logs, and anonymised data extraction matrix will be archived on an open-science platform (such as the Open Science Framework or Figshare) with a persistent Digital Object Identifier (DOI).

Scientific Conferences
Findings will be presented at national and international public health and education conferences, including the Public Health Association of South Africa (PHASA) annual conference, to engage researchers and practitioners.

Policy Briefs for Government Stakeholders
Actionable policy briefs translating the review's findings into concrete operational recommendations will be shared with key intersectoral stakeholders, specifically the Departments of Basic Education (DBE), Health (DoH), and Social Development (DSD), as well as provincial district health and circuit education managers.

Contributions of each author

Author 1 - Nthanyiseni Rangolo - Protocol drafting, search execution, title/abstract screening, full-text screening, data extraction, quality appraisal, and manuscript drafting.
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Author 2 - Takalani Grace Tshitangano - Protocol supervision, independent dual screening, independent data extraction, quality appraisal verification, and manuscript review.
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