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REVIEW ARTICLE

School Health Services in India: Status, Challenges and the Way Forward

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Abstract

Schools provide a crucial platform for health and well-being interventions targeting children and adolescents. Early promotive and preventive initiatives are vital for enabling children and adolescents to reach their optimal potential, thereby adding to the country's social return-on-investment, creating a favourable demographic dividend. This review analyses the evolution of school health initiatives in India, including the current curriculum proposed under the Ayushman Bharat program. The manuscript highlights the challenges, and gaps in implementation of the current school health programs and proposes potential pathways for bridging these gaps for promotion of adolescent well-being. The review also discusses the concept of Health Promoting Schools and suggests adaptations and key recommendations to Indian context regarding 'how' to translate it into on-field reality based on the appraisal of successful case studies from other countries. Though India started school health services more than 100 y ago, the school health programmes in most Indian states are weak and fragmented, with piecemeal health screening with minimal focus on health promotion and well-being. The recently launched School Health and Wellness initiative under the Ayushman Bharat program has lots of promise. However, it needs to be translated into effective implementation to prevent it from meeting the fate of its forerunner programs. The school health program needs to move beyond the screening centric approach and be aspirational and holistic in nature focusing upon the overall well-being of the adolescents. Concerted efforts through intersectoral convergence are needed to optimally utilise the platforms of schools for promotion of adolescent well-being.

Keywords Adolescent well-being · Nurturing care framework · School health program · Ayushman Bharat · Health promotion · Health promoting schools

Introduction

Schools play a defining role in making safe, nurturing environments available that lay the foundation for the children to develop, become healthy, learned and engaged citizens [1]. The Indian school system is one of the largest in the world, catering to over 25 crore children through a network of 15 lakh schools staffed by over 85 lakh teachers [2]. As children spend between 800–1,000 h annually in schools [3], the schools become a crucial social and physical environment second only to homes, and their strategic potential from a public health perspective can be leveraged further. Schools provide a relatively controlled environment as compared to homes, making it possible to systematically implement interventions with sustained impact for over 12 y on children during their developmental period [4]. The health

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habits formed during early childhood and adolescent periods are likely to be sustained for the rest of the life [5]. In this backdrop, choosing schools as platforms for promotive and preventive healthcare interventions has globally been adopted as a strategy. Healthy children also do better academically; therefore, school health services help fulfil the overall goal of the education sector and results in a high return on investment [6]. Empowered children act as change agents at scale by influencing their families and communities, thus resulting in changing social norms and creating resilient and prosperous communities [6]. Globally, the approach of health-promoting school (HPS) has been advocated [7]. India initiated the school health program more than a century ago, the inherent potential of the program to nurture adolescent well-being have remained largely underutilised and thus with immense scope to be strengthened. This review provides historical evolution of school health programs (SHP) in India, analyses status and challenges in school health services and provides a way forward strengthening them to promote well-being among adolescents.

Material and Methods

A review of literature on school health services through government initiatives in India was conducted. The literature included the review articles published in the last 30 y on School health programs in India, a few articles published for other low- and middle-income countries (LMICs), implementation guidelines and evaluation reports by state governments in India wherever available, guidelines and evaluation reports published by UN agencies on school health, and opinion pieces by experts. The major focus was on implementation strategies and the overall model of school health programs.

School Health Services in India

The first known health program in India was launched in 1909 in the erstwhile Baroda province in British India [8]. Key milestones of school health initiatives in India are provided in Supplementary Fig. S1. However, most of these school health program remained low profile and there has been limited impacts of these school health program.

In the last decade, atleast three key programs have been launched with school health components: Rashtriya Bal Swasthya Karyakram (RBSK), Rashtriya Kishor Swasthya Karyakram (RKSK) and Ayushman Bharat School Health Program (SHP-AB) (Table 1) [9–11]. However, even these programs have had implementation issues and most of the envisaged interventions have not been translated into actual implementation [12–14]. One of the key challenges is that the intersectoral coordination is found to be wanting with current programs primarily being driven by the health sector with minimal stake from the education sector. The programs are implemented through a transactional top-down approach with nominal efforts to meaningfully engage the adolescents to empower and enable them to act for their own well-being. The programmatic interventions have primarily been limited to piecemeal health screening without focusing on the holistic overall development of children and their well-being. There is minimal involvement of the teachers, parents/caregivers or the community. Not much emphasis or efforts have been put into enhancing the health literacy or connectedness among the adolescents or for meaningfully engaging them in the planning, implementation and evaluation of the school health programs [15–17]. The SHP-AB is limited to government aided schools. However, nearly 50% of total students in India are enrolled in the private unaided school [18]. In recent years many profit and not-for-profit organisations are offering paid school health services but are mainly limited to schools charging very high fees to students thus reaching to the upper socio-economic section of the society. The gap analysis of three school health programs done with reference to the three assessment indicators namely —Service delivery, Governance mechanisms and Accountability, research, monitoring and evaluation is provided in Box 1 [12, 13, 19–23].

Box 1 Gap Analysis of Current School Health Programs in India

Strengths and Opportunities [12]

a) Service Delivery: Adoption of varying innovative strategies to implement SHPs by several states has paved the way for determining best practices of these and implementing them uniformly across all states to leverage maximum benefit

b) Governance Mechanisms

- Funds allocation guidelines provided under the National Health Mission by the government are in alignment with on-ground needs covering a wide spectrum of requirements in implementation of various provisions under the various SHPs
- There is scope to increase collaborations with Civil Service Organizations (CSOs) and Non-governmental organizations (NGOs) for implementing various sections of the school health programs, especially capacity-building and community involvement

Table 1 Salient features of existing three major school health programs in India

	Target Population	Strategies	Nodal Ministry	Important Convergence
Ayushman Bharat School Health Programme (SHP-AB) - 2018 [11]	Children of all government and government-aided schools; Children from birth to 19 y for services provided in convergence with RBSK	• School health promotion activities delivered through school teachers • Health and Wellness Ambassadors trained in each school • Health screening: In convergence with RBSK, Provision of vaccination, supplements, electronic health record for each child	Ministry of Health & Family Welfare and Ministry of Human Resource Development	Programs: RBSK, RKSK, State Departments of Health, Education, Panchayati Raj, Women and Child Development, Urban Development, Tribal Affairs, Sports and Youth Affairs, Rural Development Member
Rashtriya Kishor Swasthya Karyakram (RKSK) - 2014 [10]	Universal coverage of the population in the age group 10–19 y	Improve nutrition, enable sexual and reproductive health, enhance mental health, NCDs related BCC by community and facility-based interventions	Adolescent Health Division, Ministry of Health and Family Welfare	Convergence • Within Health • With other departments/schemes: Women and Child Development, Human Resource Development, Youth Affairs and Sports
Rashtriya Bal Swasthya Karyakram (RBSK) - 2013 [9]	• 0–6 y of age in rural areas & urban slums • Babies born at public health facilities and home (Birth to 6 wk) • Preschool children in rural areas and urban slums (6 wk to 6 y) • Children enrolled in classes I to XII in Government and Government aided schools (6–18 y)	To improve the overall quality of life of children through early detection, free treatment and management of 30 identified health conditions categorised as follows (4 D's): by existing health manpower & the dedicated Mobile Health Teams Referral to DEIC	RBSK is a 'Child Health Screening and Early Intervention Services' Programme under National Rural Health Mission (NRHM) initiated by the Ministry of Health and Family Welfare	Ministry of Woman and Child Development, Ministry of Human Resource Development (School Education), Ministry of Social Justice and Empowerment

BCC Behaviour change communication, *DEIC* District Early Intervention Centre, *NCDs* Non-communicable diseases

c) Accountability, Research and Monitoring

• Health Management Information System (HMIS) under NHM has made standard ready-to-use reports and accompanying data dashboards available, comprising key indicators at national, state, district and sub-district levels on a monthly/quarterly/yearly basis, highlighting gaps and aiding assessment of service utilisation [19]

• Age/sex/schooling disaggregated data are available for RKSK and SHP-AB, providing scope for utilisation of this data for filing the evidence gap on the effectiveness of SHPs

Gaps

a) Service Delivery

• Barriers to effective capacity building

– Inadequate trained staff to implement the SHPs

– Logistical barriers to conducting training (e.g., Ineffective Peer-Educator training in RKSK and counsellors training in AFHS due to insufficient training duration, lack of quality control and difficulty in retention as PEs leave as they progress to higher standards)

• Lack of community participation strategies: Parents, other caregivers and key opinion makers at the community level are inadequately engaged in the programs, creating a lack of consistency between home and school environments which can lead to confusion and stress in developing minds

b) Governance Mechanisms

• Lack of intersectoral coordination and convergence between various SHPs, and also between the Central and State governments importantly due to a lack of nuanced understanding among service providers at state levels, especially in departments other than health, leads to chaos on-ground and poor stakeholder participation, which threatens effective implementation of SHPs. Overcoming this barrier by coordinating effective convergence stands to reap the highest benefits for improved implementation of SHPs [20, 21]

• Lack of optimal utilization of allotted funds for SHPs:

– Lack of uniformity among states with regard to fund allocation for SHPs

– Lack of systematic division of funds under umbrella programs, with school health often losing out to other services (e.g., Activities of RKSK are budgeted within the umbrella of the RMNCH+A program, without a predecided percentage of funds ear-marked for RKSK [13, 22, 23]

– Lack of predetermined stratification of funds within the total budget and a lack of recognizing school health programs as a priority leading to gross underutilization of funds at state levels, with the majority utilising merely 60% of the allotted funds

– Last-minute rush to utilise the funds leads to unplanned and chaotic expenditures without any real gains, leading to a waste of precious monetary resources-a situation that India cannot afford [12]

c) Accountability, Research and Monitoring

• SHPs lack in-built provisions for strengthening research to drive increased understanding of health determinants and disease burden to accelerate evidence-based action

• Lack of in-built provisions for close and consistent collaborations with academia

• Rigorous implementation research projects utilizing the existing systemic opportunities need to be undertaken to establish models that are scalable and sustainable. There is a need to catalyse partnerships between the system, academia and CSOs to undertake such implementation research initiatives

AFHS Adolescent Friendly Health Services, *NHM* National Health Mission, *PEs P*eer educators, *RKSK* Rashtriya Kishor Swasthya Karyakram, *RMNCH+A* Reproductive, Maternal, Newborn, Child and Adolescent Health, *SHP-AB* Ayushman Bharat School Health Program, *SHPs* School Health Programs

Health-Promoting School and the SHP in India

The current global strategy for SHP focused on health-promoting school (Box 2) [7, 24–26]. The HPS approach including the whole-school approaches to health have been associated with considerable improvements in learning, health, nutrition, functioning and well-being of students. The HPS services should be extended to teachers and parents for adopting healthy lifestyles by focusing on health literacy to create an enabling environment at homes and schools to adopt healthy lifestyles. An evaluation of the HPS supports the key elements of the HPS approach and confirms that school health interventions are most effective when they are sustained (long-term interventions), multifactorial (i.e., adapting comprehensive approach), adapt a whole school approach and involve appropriate training at different levels of implementation. Under the Ayushman Bharat School Health Program (SHP-AB), school teachers are supposed to work as health ambassadors and are going to be the first contact point for health promotion activities for students. In this scenario, it becomes very important that teachers adopt healthy lifestyles and can act as role models to school children. There is also adequate evidence to suggest that, without ownership of the education department, school health programs cannot be sustained [25] and thus the Education department should be the primary stakeholder for school

health by including age-appropriate health education and life skills education as part of curriculum. School health could be an important platform and stage of life for an individual to receive health literacy interventions also including other global concerns like climate change and gender sensitivity. A recent review report for making every school a health promoting school highlighted the seven common enablers and three barriers to HPS (Table 2) [7, 25]. SHP-AB program document has a component of teacher training and involvement of the education sector, however, the process for local community involvement is missing for planning and implementation. Similarly, it also lacks different strategies/scope of flexibility for rural–urban context and alternative strategy in view of existing health workforce shortage.

Based on success stories of other neighbouring LMICs, there are several lessons that can be adapted in terms of strengthening school health services as specified in Table 3 [27–33]. The study of factors from these success stories are the very areas that have emerged as lacunae in the appraisal of school health programs in India namely, lack of integration/convergence, community engagement, monitoring/evaluation and research and flexibility for local adaptation.

Box 2 Health-Promoting School: Global Strategy for School Health [7, 24–26]

The Ottawa Charter for Health Promotion, workplace health promotion has been established as one of the priorities for health promotion and thus health-promoting school (HPS) provides an opportunity to the health and education department to make the school a healthy place for students and teachers. The HPS approach majorly capitalise on the organisational potential to promote health by providing safe and inclusive environment which is also linked to positive education outcomes. At global level recently, emphasis is on making every school into Health-promoting school and detailed implementation guidelines along with global standards are also released, in the year 2021 by WHO [7, 25, 26]. HPS, at core, emphasised on community participation, thus it is a responsive and resilient program, aligned with the need of the community or in broader picture creating community need for health. This also helps communities to understand the close link between well-being and educational outcomes whereas HPS encourages healthy behavior in students and helps students to shape social–emotional skills having positive effects on addiction and other behavioral patterns like bullying which has proved to increase school attendance and academic performance. Health-promoting schools in India aim to improve the school health programs by addressing the physical, social, emotional and educational needs of student, as included in Ayushman Bharat approach.

Discussion

There are many global learnings about strengthening school health programs. An inter-agency framework called FRESH — an acronym for Focusing Resources on Effective School Health-first published by United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Children's Fund (UNICEF), the World Health Organization (WHO) and the World Bank in 2000 is widely recommended for school health services [34]. The FRESH framework proposes four essential components to guide all school-based and school-linked health activities: (a) formal policies that support child health and development; (b) skills based health education which expands to include co-curricular and non-formal activities; (c) a defined set of basic, scalable services to support educational success, health and development; and (d) a suitable physical environment and a positive psycho-social environment which encourages student, parent and community involvement. The FRESH framework further includes several cross-cutting themes to deliver the infrastructure, out of which the originally identified three themes were effective partnerships, community ownership and child/youth participation.

The WHO guideline proposes seven broad health areas for school health services: positive health and development; unintentional injury; violence; sexual and reproductive health, including HIV; communicable disease;

Table 2 Enablers and barriers to health-promoting schools [25]

Enablers to HPS	Barriers to HPS
1. Sufficient financial resources	1. Insufficient financial resources
2. National education policies and guidance materials for HPS	2. Contextual disparities between rural and urban areas
3. School and local community context considered in HPS planning	3. Health workforce shortages
4. HPS leadership by the education sector	
5. School and community ownership of HPS	
6. Availability of validated tools for monitoring implementation of HPS	
7. Teacher and school leader training in HPS	

Table 3 Highlights from school health programs in other LMICs [27, 28] and Indian states

Country/State	School health highlights
Nepal	A Nepal-specific CSE package was developed based on International Technical Guidance on Sexuality Education (ITGSE) resulting in a reduction of myths and misconceptions about menstruation. Teaching−learning experiences have improved and teachers are less hesitant about discussing ASRH issues as the capacity-building of teachers, adolescent-friendly information corners (AFICs) are being established in schools for provision of ASRH and CSE materials
Sri Lanka	Sri Lanka resulted in significant progress in health and health-related indicators, improvement in water, sanitation and hygiene provision in schools, reducing malnutrition among school children and in the follow-up of developmental defects and immunisation. The data is collected from SHP services regularly under three heading at three levels: state, block and facility which gets compiled and published annually. The data is also shared with important stakeholders
Thailand	80% of schools had conducted health education on a regular basis as SHP activities are included in curriculum which includes health promotion, health services and health education focussing on life-skill approaches. The lead was taken by the Ministry of Education department by positioning health issues of learners as national priority and establishing partnership with different agencies for effective solutions
Timor-Leste	A participatory annual planning cycle which includes religious leaders, youth, teachers and officials of various ministries. Prior to implementation, surveys were conducted to analyse current situation, best practices and poor-performing schools. The M&E data helps planners to develop more effective programs
Bhutan	School health program is implemented by the District Health Office (DHO) and by Basic Health Units (BHUs) and Health Assistants (HAs) at sub-district level School-based health screening by health workers for prevention, treatment of health conditions and referral is done along with school-based vaccination programmes [Human papilloma virus (HPV) and Tetanus] and capacity-building of SH coordinators/teachers This has led to reduction in STH infection prevalence, high coverage of HPV vaccination, improvement in WASH facilities, reduction in outbreaks, reduced absenteeism, and improved educational outcomes, health promotion. The disease prevention interventions are effective and effectively managed Communicable diseases
School health programs from Indian states [29]	
Jharkhand-UDAAN [30]	The UDAAN programme is India's largest school health program covers all the schools in the state which focuses on reproductive and sexual health and life-skills education delivered by nodal teachers mainly through classroom-based syllabus and formation of UDAAN clubs. Key highlights of the program are local context specific curriculum, implementation through government system and robust monitoring and evaluation system, and engagement with key community members
Bihar-SEHER [31]	SEHER-Strengthening Evidence base on scHool-based intErventions for pRomoting adolescent health The program was implemented in schools of Bihar which includes activities targeted to school, class and individual components to promote the health and wellbeing including behavioral aspects by formulating school health policies. Key highlight was to train the teachers for individual counselling and conducting group level activities for life-skills education
Goa-SHAPE [32]	SHAPE- The School HeAlth Promotion and Empowerment The SHAPE programme was developed by Sangath NGO. Key highlight of the program was full-time School Health Counsellors which were alumni of the schools in many places. SHCs were key to deliver individual level counselling and school level activities supported by teachers. They also constituted School Health Promotion Advisory Board (SHPAB) to plan and monitor the activities and provides an example of stakeholder participation in SHP
Rajasthan-Drishti [33]	Drishti- The life skills education focused programme was delivered in government schools of Rajasthan. Key highlight was to adopt cascade training model to train the teachers with help of master trainers at state level pre-service curriculum for teacher training. The positive roll modelling by teachers was a component of training to set an example for students on gender and other issues

ASRH Adolescent sexual and reproductive health, *CSE* Comprehensive sexuality education, *LMICs* Low- and middle-income countries, *M&E* Monitoring and evaluation, *NGOs* Non-governmental organizations, *SH* School health, *SHCs* School health counsellors, *SHP* School-health programs, *STH* Soil transmitted helminth, *WASH* Water, sanitation and hygiene

non-communicable disease, sensory functions, physical disability, oral health, nutrition and physical activity; and mental health, substance use and self-harm [35, 36]. WHO guidelines focus on the need for moving away from narrowly focused interventions, and towards Comprehensive School Health Services, which are defined as interventions that address at least four out of the seven defined areas. Additionally, WHO advocates for designing school health services based on local needs assessment, and having components of health promotion, health education, and screening leading to care and/or referral as appropriate [36].

Way Forward for India

One of the reasons for sub optimal school health programs — not only in India but also in most low- and middle-income countries — is, arguably, limited understanding and clarity on what constitutes well-functioning and effective school health services. This situation co-exists in spite of evidence-based guidelines and success stories. The monitoring, research and evaluation of existing school health services need to be strengthened and built-into the school health program design and possibility of using technologically enabled Monitoring and Evaluation (M-&-E) so that every state can periodically review the status of their SHP uniformly. Based on the evaluations, revamping of SHP can be designed.

Second, a dedicated budgetary allocation for school health programs with a predetermined plan to use the allotted funds optimally needs to be focused upon. Third, various community-based organisations, non-governmental organizations (NGOs) should be considered as important stakeholders for planning and implementation of School Health Services (SHS). Engaging communities and families have proven to improve the effectiveness of SHPs, with intergenerational school programs rapidly gaining popularity across the world. Crucial benefits that shall further the objectives of the existing school health program are: More active involvement of whole families (including parents) for children's academic achievement & enrichment, physical, cognitive, & mental health and also impacting societies at large [37–39].

The government SHPs primarily serve government and government-aided schools, largely leaving out private schools. Considering that the government SHSs provide a plethora of services, going way beyond curative and emergency services, all children, regardless of the type of school, rightfully deserve to be provided these service [40–43].

The delivery of SHP should be multipronged, and the Education department should play a major role with active involvement of teachers to ensure better sustainability of the program. This should include curriculum enrichment, role-modelling and enabling environment for health promotion and wellbeing moving beyond traditional health service centric school health program to comprehensive school health program.

To leverage the favourable demographic dividend of India and to ensure that the coming decades do not become a "missed opportunity", it is crucial to systematically identify the lacunae in the existing SHPs, adapt the evidence-based frameworks to fill in the lacunae, and utilise the available resources for building a generation of healthy and educated children. India has to embrace the principles of Comprehensive school health initiatives with Global framework like Health promoting school strategies but to yield maximum benefits it needs to be sensitive to cultural context and diversity and inequity for a wide spectrum including socioeconomic benefits for the present and future generations of the country, in line with attainment of the Sustainable Development Goals (SDG) [44, 45]. If designed and implemented effectively, school health initiatives can truly stand out as futuristic interventions, nurturing and empowering children today to create agents of change for tomorrow.

Conclusions

The school health program in India needs to move beyond the screening centric approach and be aspirational and holistic in nature focusing upon the overall well-being of the adolescents. Concerted efforts through intersectoral convergence are needed to optimally utilise the platforms of schools for promotion of adolescent well-being. The learnings from the past, from the Indian states and other low- and middle-income countries should be used for effective implementations.

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Authors' Contributions SSG and CL conceptualised the paper and prepared an initial outline. AJ, CL, CP, AVR, RS and SoK conducted the literature review and prepared the first daft. CL, JPK, SiK and SSG comprehensively reviewed the draft, provided inputs and done editing. AM and AVR edited the first draft and incorporated revision from all others. All authors reviewed the final draft and approved it. SSG will act as guarantor for this manuscript.

Declarations

Conflict of Interest JPK is a former employee of the Government of Delhi, where he was extensively involved in leading the school health program and related reforms. At the time of writing of this manuscript, he was Senior Advisor, School Health Program with the Foundation for People-centric Health Systems, New Delhi. The views and opinion expressed in this article are solely of the authors not of the organizations and institutions they have been affiliated at present or in the past.

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