

Health Education in Schools

Introduction

Health illiteracy problem in USA has been described as a silent epidemic.¹ European health literacy survey (HLS-EU) also found that on average, every second person surveyed showed limited health literacy and recommended that health literacy is an important priority on the EU agenda.² Low health literacy is associated with worse health care and poorer health outcomes. Mere ability to read and write, does not equate for a measure of individual's ability to health literacy. A proper health literacy measurement tool should take into account the multitude of social, personal, and cognitive skills that are imperative for proper function within a health-care system. One definition that was adopted by the Health Literacy Conference Report in Europe defines health literacy as the ability to make sound health decisions in the context of everyday life at home, in the community, at the workplace, the healthcare system, the market place and the political arena.³ According to WHO, "Improving health literacy in populations provides the foundation on which citizens are enabled to play an active role in improving their own health, engage successfully with community action for health, and push governments to meet their responsibilities in addressing health and health equity. Efforts to raise health literacy will be crucial in whether the social, economic and environmental ambitions of the 2030 Agenda for Sustainable Development are fully realized".⁴

Health literacy is an integral part of education process and must form an essential part of the curriculum. Young adults lack adequate awareness of the health issues affecting them? Children today, even before they reach school, know all about dinosaurs, can build Lego planes and castles and play complicated games on smart phones. Yet when they pass out from school, they have little knowledge about their bodies, how it functions and about some dangerous diseases that can be prevented by adopting healthy lifestyle. Teenagers know all about sex but pay little attention to its consequences. The education system has disappointingly failed public in preparing educated and informed adults. Beside washing hands after a visit to a toilet or before eating meals, little else is taught to children in schools about health. As a young doctor and interested in health promotion, I was conscious of this fact and organised a school health education programme for a number of schools where I was working. It was a lecture-based programme for high school students, who exhibited remarkable improvements in their knowledge of health issues on completion of the programme. The surveys before and after the programme proved that the knowledge gained about their bodies and health had significantly improved.⁵ Lecture-based education may have worked then but may not be the best way to address this problem today, even though there is a potential for young minds to retain the knowledge gained. I am sure some of them would have retained some of the information provided, for the rest of their lives. However, I think there are better ways of doing it and in this interactive age, participatory approach of education may be more productive. Some of the approaches are suggested here, with intention of shifting the responsibility from teachers to the students themselves.

¹ Editorial. The health illiteracy problem in the USA. *lancet.com* Vol 374 December 19/26, 2009

² Sørensen K, Pelikan MJ, Rothlin F et al. Health literacy in Europe: Comparative results of the European health literacy survey. *European Journal of Public Health*. 2015.

³ Health Literacy Conference Report. European Patients' Forum Spring Conference. Brussels, 8-9 April, 2008.

⁴ WHO. Empowering Citizens. Health Literacy. <https://www.who.int/healthpromotion/health-literacy/en/>

⁵ Kaul S A and O'Neill P G. Health education in schools – A case study in Mussoorie Schools. *Journal of Christian Medical Association of India*. March 1978. p96-99.

Nutrition and related diseases

Overweight and obesity is the fastest growing scourge in modern society and it is becoming even a bigger problem among teenagers.⁶ Nutrition and links to obesity and related disorders and its association with a number of chronic diseases is a matter of great concern.⁷ Unhealthy food choices and fast food has become a normal way of life today. One in three school children in USA are obese. According to a study published in Paediatric Obesity⁸, India will have over 17 million obese children by 2025. Lack of physical activity and overweightness is a reoccurring theme in our schools. Difference in BMI of those who regularly participate in sports and those who do not, is instructive. School becomes a natural arena where nutritional health problems could be addressed. A practical session where students measure each other, can be more entertaining and educational. Periodic sessions of this activity may teach a few things to students about their bodies. A free software (WHO Anthro Plus) is available which can be used to record personal or group data on computer/tablet, and the programme generates summary reports on the touch of a key. Working with the software links with other subjects too – maths, computing, scientific measurements and survey methodology. Interpretation of data then can lead to nutrition and lifestyle through group discussions/debate on problem of obesity and its causes, effect of diet and lack of physical activity on obesity or other related problems. Students could also set up a collective target to reach over time to reduce overweight/obesity levels in the class. In one programme many aspects of health can be covered. Participation and practical education are more instructive than a conventional classroom lecture.

Heart and related issues

Another exciting activity for students could be to measure each other's blood pressure, pulse rate (heart rate) and respiration and effect of exercise on these measurements; linking it to the usefulness of exercise and its effect on heart and other important organs in flushing and irrigation of these vital organs. Finally, linking it to nutrition; excessive fats and sugars and their effect on body functions.

Sexual Literacy

Unpleasant result of sexual experimentation among teenagers, especially pregnancy and sexually transmitted infections, are worrisome. Better ways have to be found to address these problems. Parents and teachers, equally find it difficult to tackle it effectively. Teenagers already know what teachers and parents are trying to tell them about sex. The best way to deal with this is to turn over the responsibility to the students themselves. Class teacher remains merely a source of information and a facilitator. Students can search internet to get information. A group discussion and finally presenting the findings of each group in a joint session can be enlightening. Having better understanding of the subject will also be effective in overcoming difficult situations and helping friends. Teen pregnancy, STIs and HIV/AIDS, selling/buying sex for favour or money, psychological impacts of sexual experimentation and outcomes are some of the areas which should form subjects for discussion and debate.

Reproductive Literacy

Reproduction as a result of sexual activity, as teenagers would be parents sooner or later, school leavers need to understand the miracle of pregnancy, culminating into the birth of a new being. Importance of

⁶ Marie Ng, Fleming T, Robinson M, et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* Vol 384 August 30, 2014.

⁷ Kimani-Murage EW, Kahn K, Pettifor JM et al. The prevalence of stunting, overweight and obesity, and metabolic disease risk in rural South African children. *BMC Public Health* 2010, 10:158.

⁸ Khadiolkar VV, Khadiolkar AV, Cole TJ et al. Overweight and obesity prevalence and body mass index trends in Indian children. *Lancet* Vol 384 August 30, 2014

care during pregnancy, child birth and care after, need to be recognised. Vulnerability during infancy and childcare during first five years and how preventive measures can help improve the child survival. This calls for timely interventions of immunisations, nutritional needs, growth monitoring and development of a baby into a toddler and into a preschool child. Basic knowledge of these issues is critical for future parenthood.

Smoking, Alcohol and Drugs

Similar approaches of debate and discussion are the best ways to address the problems of drugs, smoking and alcohol abuse.

Whilst innovation is the key to the success of these programmes, some level of discipline is also required. Why is it that we do not have an examinable subject say “human body and health” in school education system? Is maths, history, geography or foreign languages more important than health knowledge of children completing school education? Good grades in this subject will better equip those venturing further education in medicine and related subjects. Teachers need to be equally interested in bringing about the change. The first step is to increase their own knowledge of the subject. Some novel approaches have to be tried, where the likelihood of failure is not a possibility. Perhaps a special teacher, linked to biology department, has to be employed who could be accountable like all other teachers in delivering the results. Specialised teachers as health educators for schools may be required. It will necessitate additional funding. Perhaps a portion of health budget need to be shifted to education budget, which will be much more cost effective and efficient, and is very likely to be neutralised by reduction in chronic disease treatment and care in the long run. Marginal reduction in diabetes, heart disease and teen pregnancy, for example, could produce significant savings resulting in improvements in quality of life, morbidity and mortality. Health Literacy in schools is the first step in that direction. Further discussions are required and this article only makes a point of its importance and the possibilities of addressing it.

Practical aspects of School Health Education Programme

Education has fast progressed towards practical and self-learning modes. Health education in schools, if perused, must follow the same path. The concept of school health education is to develop a programme where children learn for themselves and teacher in-charge acts as a facilitator.

WHEN

The suggested school health programme is suited for teenagers, especially the ones who are soon to leave school. Catching them at this stage is important as this is the most receptive age. Knowledge imbibed at this time last the lifetime. Moreover, most of the school leavers do not pursue further education and move on in life as apprentices, wage earners, helping parents in business or leave for bigger cities in search of jobs. Many girls, especially in traditional societies and in rural areas, get married and start families. Broadening of awareness and education on personal health can benefit school leavers to a great extent. An hour a week over a period of six months or so, in pre-final year of the school is likely to be most productive.

WHAT

Young school leavers should know about life skills, at last in the following areas:

1. Nutrition – under-nutrition, overweight and obesity, consumption of junk foods are some of the problems;

2. Reproduction – Sexual urge and associated pleasure is a biological phenomenon to ensure continuity of life. It is nature’s trick to bribe humans for reproduction. Hence understanding the responsibility associated with sexual experimentation is critical. Associated issues are pregnancy and child birth, sexually transmitted infections, including HIV/AIDS;
3. Pregnancy, child birth and child care and how it determines the future – underweight, stunting and brain development starting right from conception, during infancy and early childhood, nutritional, psychological effects in behaviour;
4. Physical exercise – lack of physical activity and chronic illnesses is linked. Physical activity positively impacts healthy body and mental development;
5. Substance abuse – smoking, alcohol and recreational drugs; and how it ruins one’s life;
6. First Aid – for personal (common ailments cuts and bruises, minor burns, common deeper injuries, hyperacidity, problems with urination etc.) and public benefit (resuscitation first aid steps etc.);
7. Peer pressure affecting sex, substance abuse, bullying etc.

Subheadings under the seven subjects listed above is by no means exhaustive but implying the important aspects of the subjects the students must understand. The list could be expanded but to keep it manageable and effective, it is best to keep it to bare essential. Success of this programme will rest on the integrated approach, rather than a vertical one for each subject, as most of them are inter-connected. For example, care during pregnancy, child health, nutrition, obesity and chronic diseases later in life are all inter-connected and must be linked in discussions so that students have more than one reason to adhere to certain principles to address lifestyle.

METHODOLOGY

Method indicated here is that of a self-learning programme, where students work in groups together and come up with solutions to identified problems. This would require prior preparation of common questions about the subject by class teacher, ideally in the form of a short syllabus, and given to students to work in groups. A simple health knowledge survey is useful before the start of the programme and repeated at the completion of the programme to assess its effectiveness and knowledge gained by recipients.

PROCESS

1. Nutrition and Growth

Effects of malnutrition (under or overweight and obesity) are serious problems among adolescents and active discussion among youth is essential. The session can be designed as:

- Measuring each other – using a height meter and a weighing scale student weigh each other and calculate body mass index ($BMI = Wt/Ht^2$)
- Classification of BMI into four categories according to WHO recommendations and each student knowing their status:
 - <18.5 Underweight
 - $\Rightarrow 18.5$ to <25 Kg/m² Normal
 - $\Rightarrow 25$ to <30 Kg/m² Overweight
 - $\Rightarrow 30$ Obese

- WHO Anthro Plus Programme (Freely accessible from WHO Website) is a software simple to use. The software enables recording individual and group data, produces individual graphs with marked lines to show normal range for age. Trends over time in weight gain or loss can be monitored by students themselves. The class data should be used as an indicator over time to demonstrate the proportion of children underweight or overweight, with the class jointly working towards the aim of bringing everyone in the class to BMI \Rightarrow 18.5 to $<$ 25 Kg/m² the normal category.
- Three stations of 2-3 students conducting steps: 1. Weight in Kg > 2. Height in Meters > 3. Data entry in WHO Enthro Plus > Class data analysis.
- Another group works on the internet to search for problems associated with overweight and obesity and the causes.
- Class discussion on findings and solutions to the problem.
- Summing up by the class teacher.

2. Reproduction:

- Group I: Prepares a short talk on male and female reproductive anatomy and how fertilisation takes place, resulting in birth;
- Group II: Prepares a short talk on the responsibilities associated with sexual activity;
- Group III: Prepares a short talk on dangers of experimenting with sex, i.e. unwanted and teen pregnancy, sexually transmitted infections, emotional entanglement in living with someone and/or marriage; and how this affects attaining personal goals and carrier building;
- Group IV: Prepares a short talk on the concept of contraception and practical methods available;
- Presentation of the four groups on a selected topic which uses all the four talks and final joint discussion session;
- Summing up by the class teacher.

3. Pregnancy, child birth and child care

- Group I: A women need to be fully grown and healthy before she can go through pregnancy and associated risks, common complications of pregnancy;
- Group II: Care during pregnancy, supervision during child birth and care of the mother and the baby after birth;
- Group III: Under-fives care – immunisation, nutrition and growth monitoring (Underweight, Stunting and overweight),
- Group IV: Mental development and nutrition, psychological development.
- Each group present its findings
- Class discusses the four group findings under a selected topic
- Summing up by the class teacher.

4. Physical activity and exercise

- Blood pressure and pulse rate measurement of all students and effect of exercise on it
- Group I: Disadvantages of being inactive and its effect on body;
- Group II: Chronic diseases associated with inactivity;
- Group III: Simple methods of remaining active
- Group presentations and class discussion of the three groups on a selected topic which uses all the presentations;

- Summing up by the class teacher.

5. Substance abuse – smoking, alcohol and recreational drugs; and how it ruins one’s life

- Group I: Dangers of smoking tobacco and other substances;
- Group II: Chronic diseases associated with smoking;
- Group III: Misuse of alcohol and associated dangers;
- Group IV: Substance abuse
- Presentation and discussion among the four groups on a selected topic which uses all the four talks;
- Summing up by the class teacher.

6. First Aid

- Group I: Minor illnesses and how to react - common ailments cuts and bruises, minor burns, common deeper injuries, hyperacidity, problems with urination etc
- Group II: What is first aid and how can one be helpful in emergencies;
- Joint discussion session;
- Local Ambulance Service to demonstrate First AID principles
- Summing up by the class teacher.

7. Peer pressure – it could start with a published story in the newspaper!

- Group I: Peer pressure for sexual indulgence;
- Group II: Peer pressure for vandalism and other anti-social activities;
- Group III: Peer pressure in bullying;
- Group IV: How to escape peer pressure;
- Presentation and discussion of the four groups on a selected topic which uses all the four talks;
- Summing up by the class teacher.

RESOURCES

- School must decide on a fixed time in the school time table – minimum requirement could be one hour weekly for a period of six months;
- A designated teacher is required for managing this programme. This teacher must be interested in health education and have some background to go with it. A biology teacher may be best suitable.

FUNDING

Discussion to find funding for this programme is beyond the scope of this paper. Needless to say, that if the programme is pursued, some amount of funding will be required. Some schools may already be involved in health education and this approach will provide an alternative and possibly provide better results.

CONCLUSION

It is the experience of those practicing medicine and public health that innumerable young people and adults suffer from health problems which are the result of poor lifestyle, ignorance and misconceptions,

passed on by parents, friends and peers. With life expectancy rising everywhere in the world, the burden of non-communicable diseases has risen to a level which is unsustainable. Any improvements in the knowledge and attitudes of people will reduce this burden and there is no better place to start, but the schools, where behaviours are cultured for life.

Chronic diseases like heart disease, stroke and diabetes are the most common middle age diseases and most of them can be traced back to lifestyle. Modern day affluence and fast food choices makes it easy to get used to bad habits. Bad habits die hard and are best prevented from developing in childhood. Consumption of ultra-processed food like chips, white bread, donuts and cookies, granola or protein bars, packaged breakfast cereals, coffee creamers, sodas and milkshakes are the choicest foods for the young at home and in schools. Prevalence of overweight and obesity in children and adolescents is growing rapidly in many countries. Cutting down sugars and fried and fatty foods, indulging in regular physical activity and watching weight lead to better health.

Understanding vaccination and its advantages in controlling infectious diseases is getting even more important today as anti-vaccination lobbies spread misinformation. Keeping away from smoking and alcohol is important as they are the risk factors for a number of adult chronic diseases. Having adequate sleep is also essential for good health.

Reflection of the responsibilities linked to sexual experimentation for teenagers is of paramount importance to avoid regrets associated with unwanted pregnancy and sexually transmitted infections. Moreover, psychological trauma of irresponsible sex may be even more damaging for the young for life.

Focus on common good for harmonious living in a community is essential for children to understand to avoid emergence of an unduly selfish society. It is detrimental to the survival of our life on this fragile planet.

Young minds certainly need exposure to facts so that they can make informed decisions for themselves. Approaches expressed here are by no means exhaustive. Continued modifications of the content and methodology is required as the school health education programme develops.