KEYNOTE. THE WAY FORWARD: OPPORTUNITIES AND LESSONS LEARNED

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Abstract
In this annotated powerpoint presentation, Shordt indicates the importance of SSHE by showing evidence from various studies. The learning perspective and the gender perspective are explained. POSITIVE is the acronym she derived from the papers to be presented here at this symposium, as good or positive management is key to effective SSHE in the large-scale.

Millennium Development Goal: halve the world population without sustained access to safe water and sanitation

How?

Schools are the largest and best organized network in the world for improving sanitation and hygiene

Four usual goals of SSHE programmes are shown here:
Why SSHE?

- **Health** - when school facilities are clean, maintained and used by all.
- **Learning** - More than knowledge: hygiene habits and hand-washing practices among all children.
- **Change agents** - Children as agents for change in their households and communities.
- **Future impact** - future generation of adults develop healthy hygiene behaviours.

Looking first at the health perspective,
… Deaths due to diarrhea continue to kill millions, the majority of whom are children.

Estimates vary, however, the most conservative estimates indicate that at least 400 million school-age children are infected by roundworm, whipworm, hookworm, schistosomiasis and other flukes and/or guinea worm, often with multiple species infections. These parasites consume nutrients from children they infect. In doing so they bring about or aggravate malnutrition and retard children’s physical development. This can lead to stunting, underweight and anemia (iron deficiency anemia, IDA)\(^1\).

### SSHE: The health perspective

<table>
<thead>
<tr>
<th>Disease type</th>
<th>Morbidity</th>
<th>Mortality (deaths each year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea</td>
<td>&lt;4,000 million</td>
<td>2.5 million</td>
</tr>
<tr>
<td>Roundworm</td>
<td>250 million</td>
<td>60,000</td>
</tr>
<tr>
<td>Hookworm</td>
<td>151 million</td>
<td>65,000</td>
</tr>
<tr>
<td>Whipworm</td>
<td>43.5 million</td>
<td>10,000</td>
</tr>
<tr>
<td>Trachoma</td>
<td>146 million (6 million blind)</td>
<td>None</td>
</tr>
<tr>
<td>Schistosomiasis</td>
<td>200,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

Around the world…

Adapted from UNICEF Fresh Initiative and World Health Report, 1998
WHO website, 2004

Four key intervention to fight diarrhea are: improving the quality and quantity of water used, improving hygiene practices and ensuring the save disposal of human excreta.
Four key interventions fighting diarrhoea

- **Quality** of water: bacterial and chemical
- **Quantity** of water used
- **Hygiene** including hand washing and face washing
- **Sanitation**, particularly, save disposal of human excreta

The following graphs shows the results of an analysis of 144 studies related to water and sanitation. Somewhat counter-intuitively, it shows that improving hygiene and safe sanitation bring the greatest reduction in diarrhea (about one-third for each). By “improved hygiene”, we refer to practice, that is, what people do. This includes, for example, consistent handwashing and face washing ii.

Results of research from 144 studies show the following

% reduction in diarrhoea by intervention

![Graph showing reduction in diarrhoea by intervention](Esrey, 1994)

Importance of sanitation was highlighted in the previous slide, particularly, safe disposal of human excreta
In this slide, information from Valerie Curtis reminds us of how dangerous human excreta can be. Of course, not every virus or bacteria is dangerous. However, the overall load can be very large. Human excreta is dangerous.

**Safe excreta disposal is important**

One gram of excreta can contain:

- **10,000,000 viruses**
- **10,00,000 bacteria**
- **1,000 parasite cysts**
- **100 parasite eggs**

Among hygiene behaviours, handwashing, in particular, provides a great health advantage. Handwashing can block the transmission of pathogens (germs and fecal matter) that cause diarrhea, as these studies show. In school and anganwadi programmes this is very important. Having even well-maintained latrines without consistent handwashing will not result in the intended health benefits.

Many studies suggest that sanitation and water-related diseases in the developing world could be reduced by 43% if compliance with handwashing after defecation was achieved.

For eye health, face-washing is important. For skin health, body-washing.
Programme perspective: 
include handwashing

Impact of handwashing

<table>
<thead>
<tr>
<th>Location</th>
<th>% reduction in diarrhea</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burma</td>
<td>30%</td>
<td>Han &amp; Hlaing</td>
</tr>
<tr>
<td>USA</td>
<td>48%</td>
<td>Black et al.</td>
</tr>
<tr>
<td>Bangladesh (urban)</td>
<td>35%*</td>
<td>Khan</td>
</tr>
</tbody>
</table>

* Impact on shigellosis. S. Huttley, 1992

The following slide, from a teachers’ book, describes how soap works. Note that less expensive agents, like ash or sand, can also be used to clean hands.

Experimental field studies by Dr. B.A. Hoque have shown that, under similar conditions, any usual household washing agent – soil, ash or soap – produces similarly efficient results. It confirms other clinic-based studies which showed that if the scrubbing action is rigorous then any of these specific agents will remove the bacteria from the hands vi.

How does soap work?

Soap molecule
water-“loving” end
water-“hating” end

Grease and dirt being carried away by soap molecules
After having briefly examined SSHE from a health perspective, we will briefly look at SSHE (and health) from a learning perspective.

**SSHE: the learning perspective**

Education and health are inseparable.

Stunting, nutritional deficiencies, diarrhea and helminth infections affect school participation and learning.

This study, from Mali, in Africa, demonstrates that the level of schistosomiasis infection (as measured by the number of eggs per 10 ml of urine) is related to academic performance (p<0.01). The study sample was 580 children in two primary schools, although a small sample, there is little reason to believe that the results would differ in other countries.

**Children with worm infections tend to perform worse in school**

Intensity of infection by academic performance

![Graph showing intensity of infection by academic performance for boys and girls](image)

Schistosomiasis infections, number of eggs/10 ml. School performance as graded by teachers.

This study in Jamaica shows that children treated for whipworm performed better on cognitive tests than children who were not treated. The use of the ‘placebo’ implies that every participant thought they were being treated. This study corroborates the preceding study viii.

This study, from the same group in Jamaica, shows that children who have greater levels of infection (in this case from whipworm) tend to be absent from school more often… up to one third of the time more ix.

Children with worm infections tend to be absent from school more often.

School absenteeism and helminth infection

Nokes et al 1992

Nokes et al 1993

Research from Jamaica
Having looked at SSHE goals briefly from the health and learning perspectives, the following slides examine a few dimensions of the strategic, programming dimension.

**The programme strategy perspective**

**Hygiene education and health interventions should continue, not just happen one time.**

Typical of such data, this graph shows that after one-time treatment for worms (without a strong education component in the school), the infection tended to return. This implies that SSHE must continue, it must be sustained beyond the life of a single project.

**Strong school programmes are needed to keep children free from infection**

![Graph showing Ascaris infection before treatment and nine months after treatment](image)

Sample of 217 poor children in Visakhapatnam, Andhra Pradesh. 177 children were infected with Ascaris and were treated. But reinfection occurred after treatment. I. Paul and G. Gnanamani, 1998.

**Use and maintenance:** This is an interesting observation taken from one of the papers to be presented in this symposium:

*Most of the current toilet facilities are not only a health risk, but also the students that use these facilities believe that these toilets are the “norm”. And this will have a real negative impact on their understanding of general health and sanitation standards.*
Use: This is another example of the types of issues that must be kept in mind when organizing a
school programme. The example is, once again, from a symposium paper.
Adolescent girls still are not using latrines. After visiting several schools where the SSHE was
implemented, it was observed that grown up girls do not attend school latrines because they feel
shy to get permission from the male teachers, however, young girls of lower grades commonly
use these latrines and do not feel shy.

Programme perspective:
Use and maintain facilities

facilities cannot always be used...

....or they are dirty

This old, but interesting research demonstrates something we know intuitively but sometimes
“forget”. This is: dirty facilities can make children sick.

Organizing children and teachers for cleanliness and good use is very important in each
programme xi.
Relation between diarrhoea and toilet hygiene

School hygiene and diarrhoea

![Graph showing the relation between school hygiene and diarrhoea](image)

Sample of 9,800 primary school children in Cali, Colombia

In this study, more than 40% of the cases of diarrhoea in school children were attributed to school transmissions rather than transmission in homes. Hygiene score measured by functionality of latrines, number of water outlets near toilets per 100 students, cleanliness in latrines. J. Koopman, 1978

SSHE: the gender perspective

- The lack of adequate and private sanitary facilities in schools can prevent girls from attending school.
- Example: In Bangladesh, a school sanitation programme increased girls' enrolment by 11%.

Source: Cairncross, 1998
Some implications of a gender perspective

- Separate facilities for adolescent girls
- Designs adjusted to different needs of girls and boys
  - Cleaning shared by both sexes
  - Both fathers and mothers know about the SSHE programme

Education addresses sensitive aspects such as menstruation, initiation rites and sexually transmitted diseases

The need for cleanliness extends beyond toilets or school grounds. Using a clean dipping cup, or the equivalent, is an over-looked and sometimes difficult part of school programmes.

Another element of the strategic perspective relates to how to organize the children and the school for effective SSHE. Children must be taught how to use and maintain the facilities. Teachers should take the lead; however this can also be done using the child-to-child approach.
In summary, SSHE programmes are about more than constructing toilets and water points. This table lists important practices that deserve a place in SSHE.

<table>
<thead>
<tr>
<th>Part of the body</th>
<th>What to do</th>
<th>Likely problems if not done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands</td>
<td>Washing both hands, rubbing with plenty of water and soap or ash after using toilet and before/after eating</td>
<td>Dysentery, diarrhoea, Some worms, cholera, colds</td>
</tr>
<tr>
<td>Head</td>
<td>Washing face with plenty of water/soap. Cleaning teeth after meals.</td>
<td>Eye disease, tooth decay, lice</td>
</tr>
<tr>
<td></td>
<td>Bathing</td>
<td></td>
</tr>
<tr>
<td>Body</td>
<td>Bathing regularly. Washing clothes</td>
<td>Lice, scabies, ring worm</td>
</tr>
<tr>
<td></td>
<td>Use toilet and urinals</td>
<td>Dysentery, diarrhoea, some worms, cholera</td>
</tr>
<tr>
<td>Feet</td>
<td>Wear chappels or shoes</td>
<td>Some worms</td>
</tr>
<tr>
<td>Mouth</td>
<td>Drink safe water. Safe water storage and transport.</td>
<td>Dysentery, diarrhoea, some worms, cholera</td>
</tr>
<tr>
<td></td>
<td>Safe food hygiene. Washing, hand with clean hands and utensils, safe storage.</td>
<td></td>
</tr>
</tbody>
</table>

To achieve all these things, MANAGEMENT is a key challenge. The idea is that it is easy for one, two or a small number of schools to have effective SSHE… but how can this be managed for 200 or 2000 schools in a large area? What can we learn from
current best practice about managing the scaling up of school programmes, retaining quality? What inputs, precisely, are needed to create good programmes over larger areas?

**Reaching communities and families**

From school to community – rally of school children (West Bengal).
**Other activities include:** community/school diagnosis by children, or School Health Clubs, reaching into homes

**Papers of this first SSHE symposium**

The papers of this seminar tend to focus on management from one perspective or another. Good or positive management is key to effective SSHE in the large-scale, over hundreds and thousands of schools in an area. **POSITIVE** in this case is an acronym:

**P**olicy
**O**wnership
**S**upervision
**I**nstitutional setting
**T**eacher training
**I**nstitutional norms and designs
**V**ery honest
**E**ducation

**POLICY:** policy must be implementable and implemented.

**OWNERSHIP:** Ownership and participation by teachers, parents, children… and the education system… is key to the success of programmes. Local “motors are needed and, in this regard, experience with school management committees and PTAs can be quite different.
SUPERVISION: Supervision is a catch-all word that can include many activities. The important thing is that supervision continues to be effective beyond the end of the project, after construction.

**POSITIVE MANAGEMENT**

- **Policy:** Coherent. High-level commitment.

- **Ownership:** Participation and willingness: students, school management teams/PTAs, women and men teachers, head teachers. Planning, implementation and monitoring. Recurrent expenditures.

- **Supervision:** Follow up continues. Use of facilities. Use training + participatory tools. SIMPLE monitoring by many people. Follow-up action.

- **Institutional setting:** Work through existing institutions. Accountability. Education, NGOs, programme personnel.

- **Teacher training:** female and male teachers. Participatory methods. Joint planning. Relevant materials. Retraining is needed!!

Institutional norms and designs: What to do about some tough issues? 1:100 is common. What about the teachers who tend to lock the latrines? Are school latrine designs relevant to the home?
Very honest: delays and loss of money undermines community sense of ownership. One participant wrote: *The Construction contracts normally go to Government Registered Private Construction Companies and they have no interest in involving the communities of where the school children live in sanitation and hygiene education. These Contractors are paid for fulfilling the formal programme of activities as laid out in the Contract rather than for the actual impact on the Community. Political interference in the tendering process results in delays and quality control.*

Traditional lecture-memorize approaches do not usually lead to behavioural change.

**POSITIVE**

- **Institutional norms and designs**: ratios: water points, handwashing, latrines (1:100). Relevant designs. Consultations. Teacher latrines? Costs?


- **Education**: values, self-management and mutual support. Curriculum: SSHE needs a clear position. Methods: participatory. Facilities must support education.

Good management requires coordination of multiple inputs. Good management is key to scaling up SSHE with quality.

Many SSHE programmes fail. SSHE is not an easy or simple effort. **Good joint management is the key.**
**Good management means**

- Flexibility and attention to details
- Consultation and ownership by Education, by PHED, by community, by school.
- Learning linked to practice. Creative education.
- Monitoring and taking action.
- Good maintenance and use.

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**Quality with diversity: Scaling up SSHE**

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*Thank you!*
References

i FRESH Focusing Resources on Effective School Health homepage, http://www.freshschools.org/


