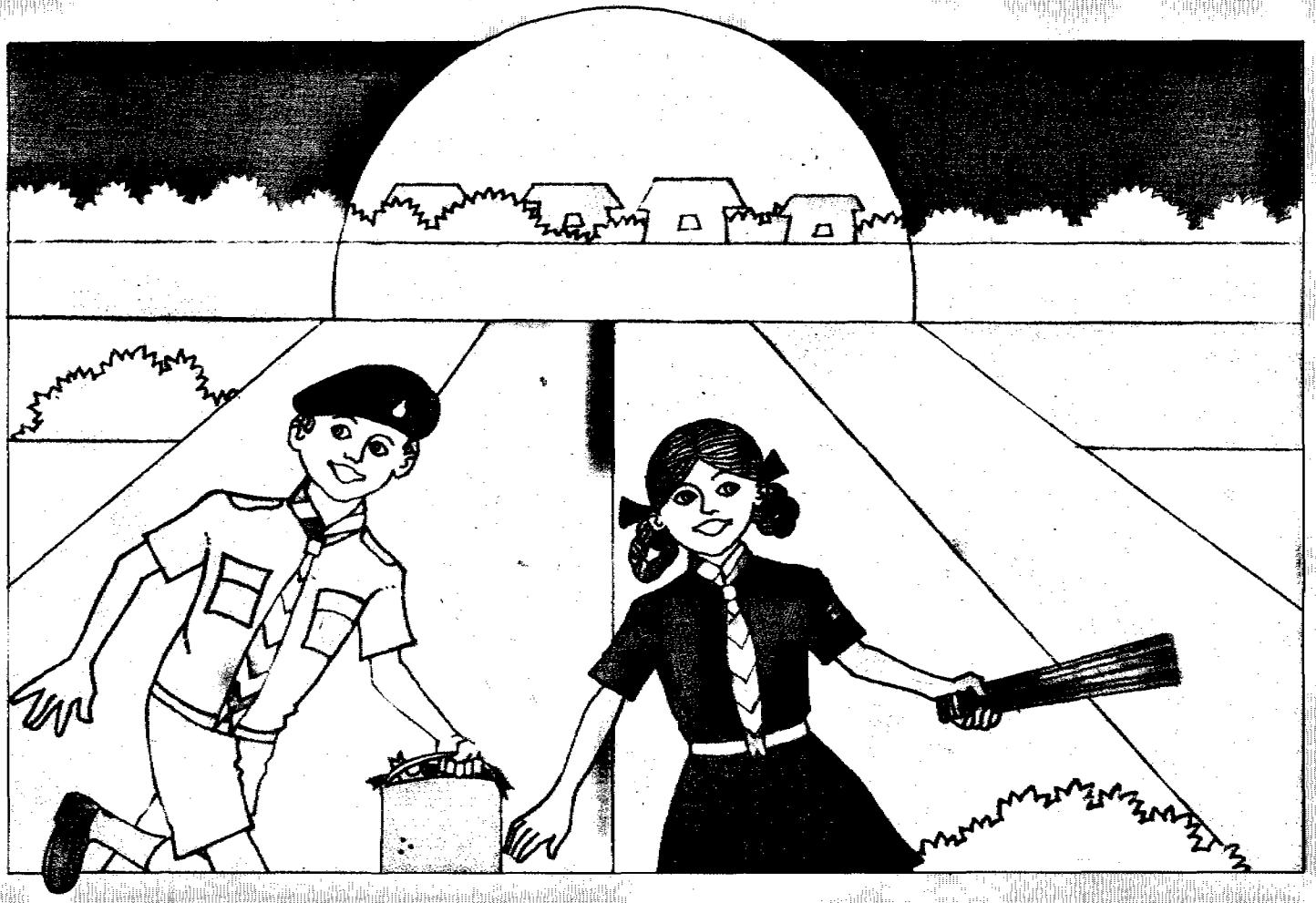
IND/87/WES/019

LET US PROMOTE SANITATION



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LET US PROMOTE SANITATION

A sanitation handbook
for
Bharat Scout and Guide leaders

United Nations Children's Fund
New Delhi
1988

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FOREWORD

Land, water, air are getting more and more polluted. Pollution is overtaking us in all spheres of life resulting in greater sickness, high mortality and unhealthy living.

The Bharat Scouts and Guides in India, feeling the urgency of the problem, have undertaken to spread the word and help bring in general awareness amongst the community at grass roots through "Sanitation Promotion Activities" with the active collaboration of UNICEF.

A national level workshop was organised in June 1986 to give a fillip to the programme of Health Education and Environmental Sanitation. This handbook is the outcome of the workshop.

Informative and interesting, the handbook will help show the right direction to the Scouts and Guides involved in this Community Development activity.

LAKSHMAN SINGH
National Commissioner
Bharat Scouts and Guides

HOW TO USE THIS BOOK

This handbook consists of 10 chapters, which are listed in the page of Contents. The first two chapters discuss the importance of sanitation, and how this can be promoted by the scouts and guides in their homes and the community. The next four chapters deal with the importance of safe water supply, proper disposal of waste water, of human excreta, and of animal dung and garbage. Personal hygiene and sanitation in the home are discussed in the next two chapters. The last two chapters, on guinea worm disease and diarrhoea, show how these common diseases can be prevented by improved sanitation.

After receiving this book, first read it through from the beginning. The ideas can be applicable for both the rural and much of the urban conditions. Discuss the sanitation problem in the community and the possible solutions with other fellow-scouts and guides and the community members.

Depending on the level of sanitation in the community, the book can also be used selectively, referring to the chapters that are of greater relevance. Before suggesting the construction of simple sanitary facilities such as garbage pit, soakage pit etc. learn to do it oneself. In many cases, this can be done by following the instructions in the book. If not, be sure to find out where more expert help can be obtained before starting the work. Get in touch with the local engineering department or the block development office. For more difficult construction, eg. a latrine, the help of a skilled mason is required.

While working with a community, keep notes on any special problems and solutions in the area so that others may benefit from the experience.

CONTENTS

INTRODUCTION

Good sanitation and proper nutrition prevent many common illnesses. Poor sanitation helps spread infectious diseases, particularly in congested areas. This can even lead to death. Children suffer the most in an unhygienic and insanitary environment, because frequent illness affects their healthy growth.

Trained motivators can help communities understand the links between sanitation and better health. They can also support community efforts to improve hygiene and sanitation.

Recognising this crucial need, the Bharat Scouts and Guides decided to use its 1.5 million strong membership to activate community efforts to improve sanitation. A National Workshop sponsored by UNICEF, was organised at Ahmedabad, Gujarat, in June 1986. The objective was to orient scout and guide leaders about the problems and solutions of sanitation. This handbook is the outcome of that workshop.

The handbook is meant to be used by scout and guide leaders. Written in clear and simple language, and well illustrated, the handbook can even be used by many senior scouts and guides on their own. It includes suggestions on what scouts and guides leaders can do, and lays particular emphasis on their role in motivating people to take action for themselves. It is expected that the handbook will be translated and republished in different Indian languages.

WHY SANITATION? 1

If people had proper nutrition and safe drinking water, kept themselves and their surroundings clean, and got their children immunised, there would be very little illness. Improved hygienic practices and sanitation can prevent many water and filth related diseases. According to the World Health Organisation, 80 per cent of all the sickness and disease is due to the lack of safe drinking water and proper sanitation.

1.1 Survival and Development of children depends on proper sanitation

Children, especially the malnourished ones, are very vulnerable to the effect of contaminated drinking water and an insanitary environment. Every year, 15 lakh pre-school children (aged under five) die of diarrhoea due to dehydration (loss of water and salt in the human body). An even larger number suffer from frequent illnesses due to repeated attacks of diarrhoea.

Diarrhoeal deaths caused by dehydration can be prevented by replacing the water and salt that the body has lost. However, frequent attacks of diarrhoea worsen the condition of poorly noursihed infants and children. They will not grow and develop healthily. Improved sanitation, which can help prevent the spread and repeated attacks of diarrhoea, is therefore vital for child survival and development.

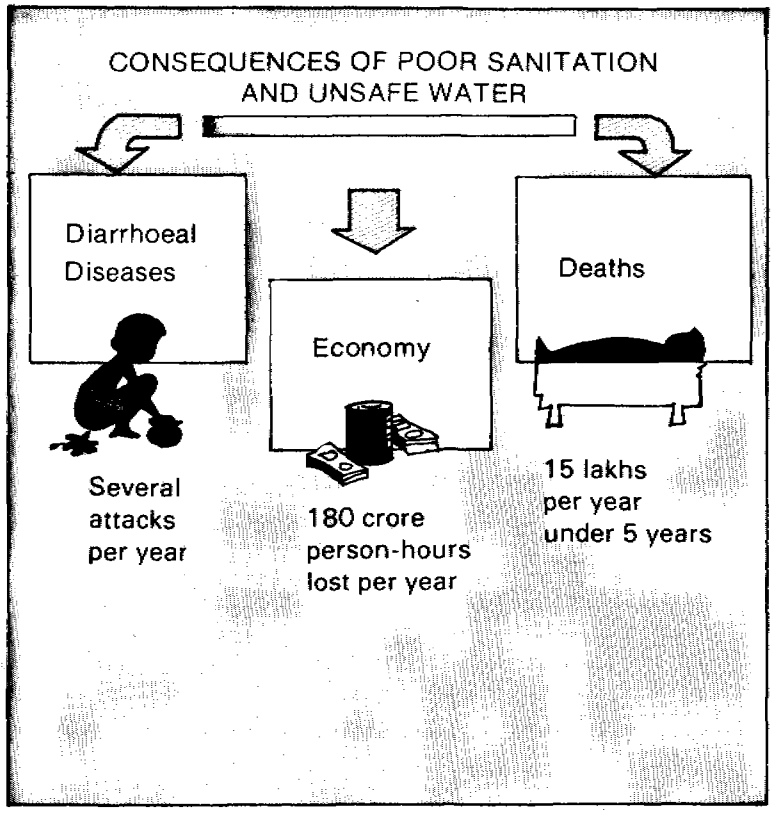


Fig. 1.1. Consequences of poor sanitation and unsafe water

1.2 How are the family and the nation affected?

A person who is frequently ill may not be able to provide all the needs of the family. He is enmeshed inthe "Circle of Poverty" as illustrated. He has less energy and hence produces less work. In turn, he may produce less food, or earn less money to buy food. If the family does not have enough to eat, they will be more likely to fall ill. This circle can be broken if the spread of disease is controlled.

The country also suffers economically because of diseases related to water and sanitation. It has been calculated that India loses 180 crores person-hours each year due to these diseases.

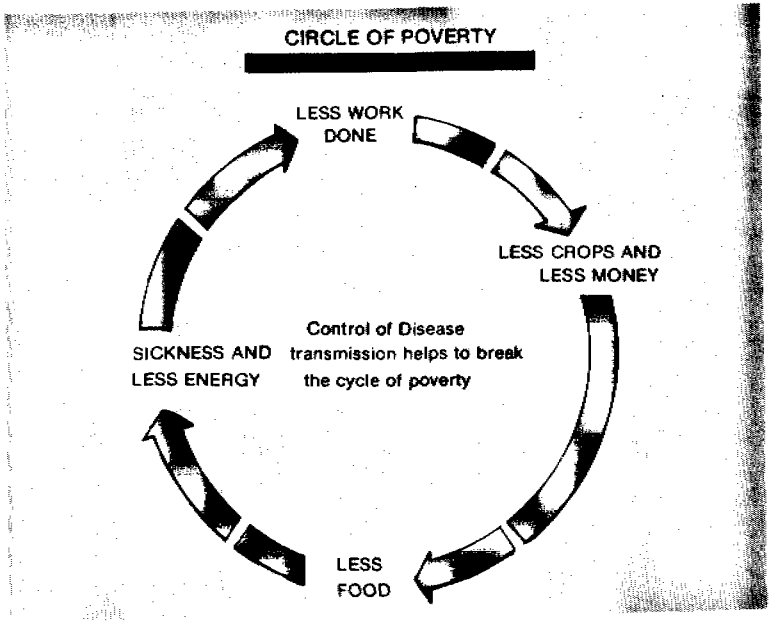


Fig. 1.2. Circle of poverty

1.3 What is sanitation?

Many people think that sanitation means only a sanitary latrine. This is not correct. No doubt, exposed human excreta is one of the major sources of diseases like diarrhoea. However, even when latrines are used, this does not always eliminate the diseases of bad sanitation. Good sanitation depends mainly on practices and attitudes of the people. The word "sanitation" is therefore used to define a package of health-related measures. It covers all aspects of environmental and household cleanliness as well as personal cleanliness or hygiene.

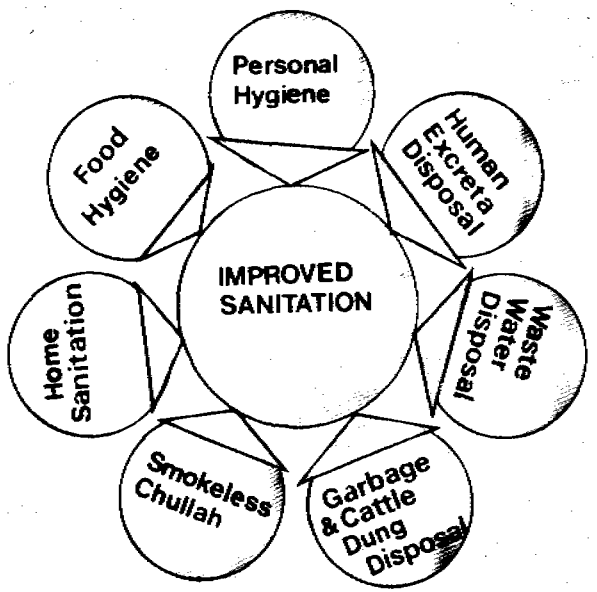


Fig. 1.3. Sanitation—A health-related package

ROLE OF SCOUT/GUIDE LEADERS

2

The scout/guide leaders should work jointly with the scouts and guides to increase the awareness of the community, and help them take action to prevent the spread of diseases. The people themselves can greatly improve the environment they are living in.

2.1 What should the scout/guide leaders do?

* understand why sanitation and hygiene are neccessary
* improve their own hygiene and sanitation practices
* understand the problem and needs of the community
* begin with the knowledge and skills that the people already have
* help people understand the link between better sanitation and health
* suggest changes that are in keeping with the community's resources
* motivate the community to take action to improve their sanitation and provide technical help if necessary.
* organise scout and guide patrols in the community to work with the people.

2.2 How can all these be done?

The scout/guide leaders must first educate themselves about the links between poor sanitation and disease. This can be done through the training and orientation programmes organised by the National Association. These leaders can then orient other scout/guide leaders in the regions who can in turn, orient scouts and guides.

The leaders should meet community leaders and discuss the type of activities that the community members themselves can do to improve sanitation. Group meetings with the community members can be arranged to identify these activities and discuss how they can be carried out.

2.3 Respect people

It is important to gain the confidence of the people. For instance, do not start telling mothers that their children get sick because of their own dirty habits. Instead, try asking mothers what sicknesses their children get, what they think is the reason, and what they do to deal with these sicknesses. Show them how human excreta sticks to the feet when one walks over it, and how one's feet carry it everywhere one goes. Ask them what would happen if a fly walks over excreta. Would it be transferred to food and drink that the fly later stands on? Let people work things out for themselves.

2.4 Identify good traditions

There is both good and bad in old practices. Build on the good. Help people identify the useful practices in the community. For example, many religious traditions emphasize the importance of washing hands. In many areas the traditional food for children suffering from diarrhoea is rice water. Studies have now shown that some traditional practices including the use of rice water have a scientific basis. Washing hands with soap also helps control the spread of diarrhoea.

2.5 Sanitation is forever

Sanitation is a community responsibility. Do not take action for them. Instead motivate the people to take action for themselves. Remember, that sanitation is not achieved if people wash their hands once, or use a latrine once. Staying clean, and keeping the surroundings clean is a continuous process. Otherwise, the disease cycle will start again.

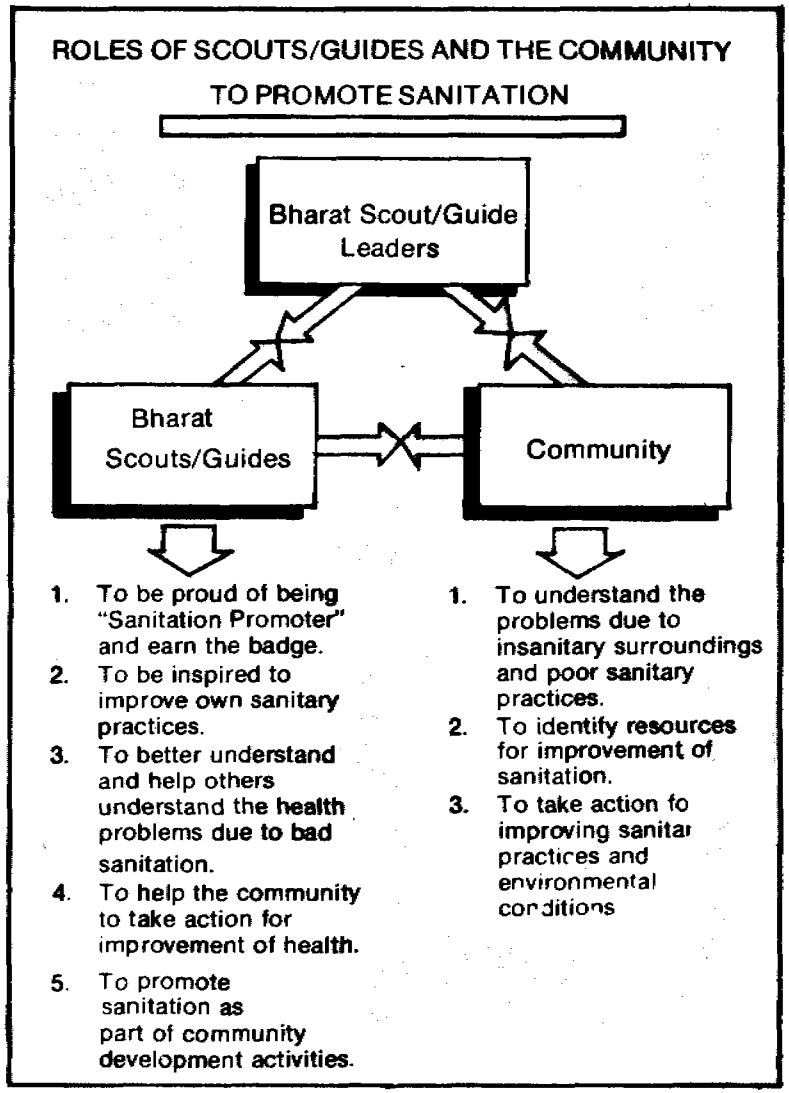


Fig. 2.1. Roles of scouts/guides and the community to promote sanitation

SAFE WATER SUPPLY

3

3.1 The problems

Water is essential to life. However, when drinking water is contaminated it can cause sickness and death. Many diseases are spread by drinking water, which has contaminated by human excreta. These diseases include diarrhoea (watery stools), cholera, typhoid, hepatitis (jaundice) and dysentery (stools with mucous and blood).

Water gets contaminated when people defecate near the source of water, such as a village tank; the pathogens (diseases-causing germs) in the excreta get mixed up with the water. Also the germs can spread when people bathe, wash clothes or animals in the water. Dirty water pots can also contaminate the water in a well when the pot is dipped into the water. When people drink the contaminated water, it is likely that the germs will infect them.

Many people do not know that water which looks clean and tastes good may contain harmful germs that are not visible to the naked eye. But, even if they know that the water in the nearby pond is not safe, many may prefer to use it, rather than walk a longer way to a safe protected source of water.

Fig. 3.1. Pollution of water source

3.2 The solutions

1. A safe water supply should always be used. It comes from a source that is protected from contamination (like a properly installed handpump, or the public water supply that is piped into taps). Open sources, such as wells, rivers and ponds, are not safe, because they can be easily contaminated.
2. The people should be motivated to use the handpump water wherever available. It is one of the safest sources of drinking water. Once a proper platform is constructed, and the wastewater is drained away, this source is safe.
3. Another way is to boil the water. If fuel is scarce or expensive, a small quantity can be boiled for the infants only.
4. Water can also be made safe by adding chlorine. The local primary health centre can provide more information about chlorinating the drinking water in the household.
5. Water should always be stored in clean containers. Glasses should not be dipped into the water. Instead, a ladle should be used or the water poured directly into glasses.
6. Work intensively with the people who *knowingly* collect drinking water from contaminated sources. Encourage them to use protected sources.

3.3 What scout/guide leaders can do

1. Understand how drinking water sources can be contaminated.

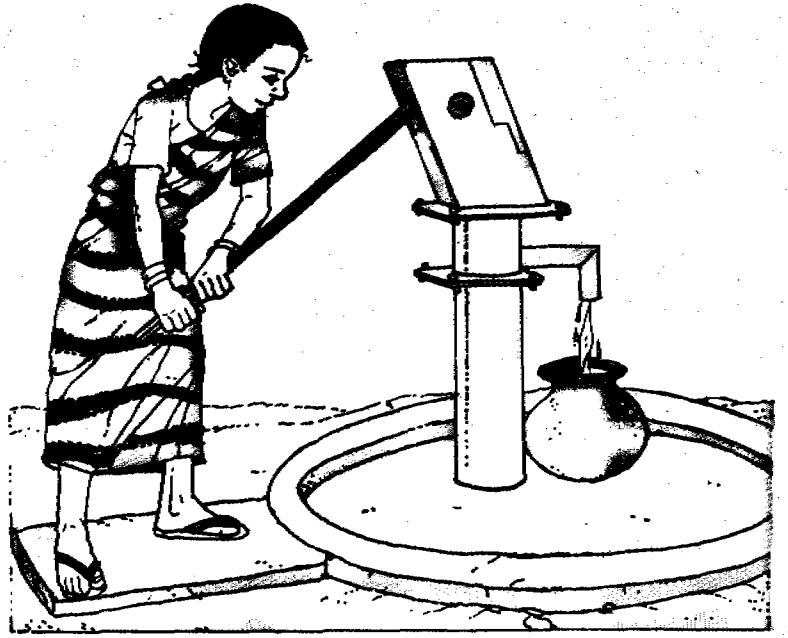


Fig. 3.2. Handpump water is safe

2. Identify the sources which the villagers use for drinking water and other purposes.
3. Help the community understand the link between contaminated water and disease.
4. Suggest ways to prevent contamination of the water source.
5. Organise community campaigns to clean the surroundings of water sources.
6. Help the community to keep this area clean.

DISPOSAL OF WASTEWATER 4

4.1 The problems

Stagnant pools of wastewater around houses, in streets and in choked drains are a health hazard. They smell bad, make the area slushy, and provide a place where mosquitoes can breed. People bitten by mosquitoes can catch diseases like malaria and filariasis.

4.2 The solutions

1. *Draining the water away*—A good way to use the waste water from handpump or well is to lead it through a drain to irrigate a vegetable garden (kitchen garden). The vegetables grown in the garden can improve the family's nutrition.

2. *Soaking the water away*—The water can be led into a specially prepared pit from which it is soaked into the ground. This is called a soakage pit. It can also be used to soak the waste water from a bathing cubicle. It works well in sandy soil, but cannot be used in a water logged area or soil with high clay contents, like cotton soil. In the latter case, the water has to be drained away.

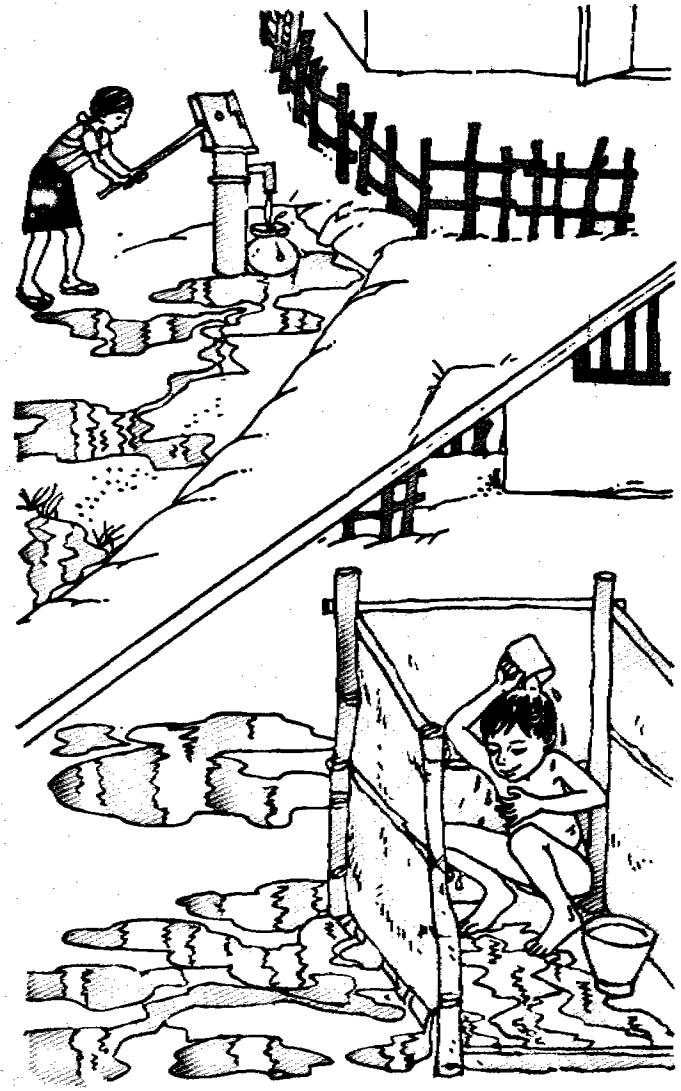


Fig. 4.1. Stagnation of waste water

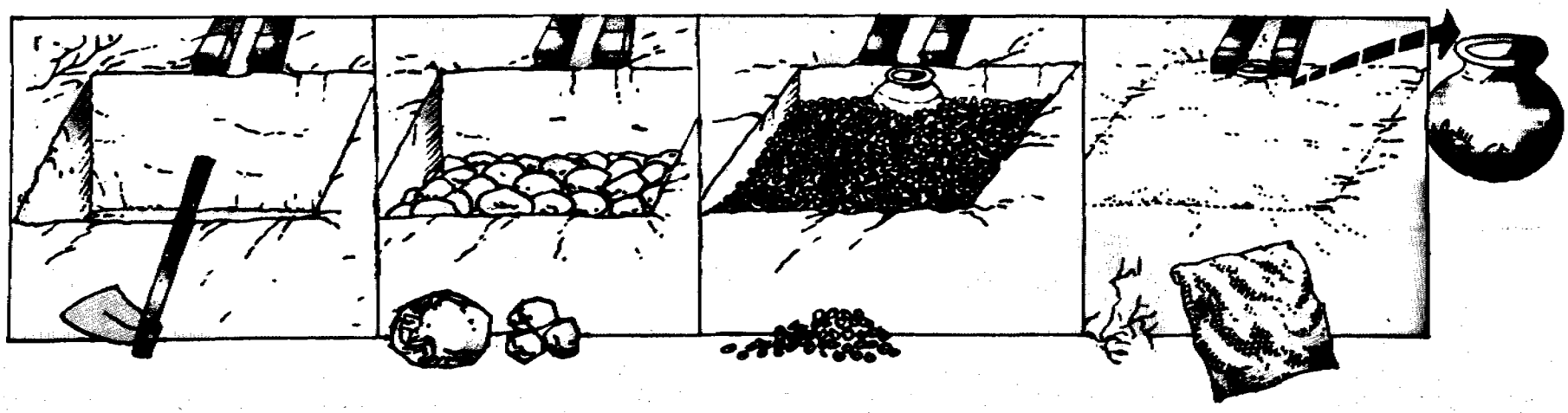
4.3 How to build a simple soakage pit

A soakage pit is a pit filled with different sizes of stones or broken bricks. The stone fillings prevent the pit walls from collapsing. As the wastewater flows into the pit, it will gradually seep into the ground.

It is very easy to build. it can be done step by step as shown in the Fig. 4.2

"The sediments in the pot should be removed regularly and fresh coconut fibre or leaves put back.

After several years, the soakage pit will become clogged up and overflow. It has to be emptied, the stones washed, dried and put back.



1. Dig pit 1 M long 1 M wide and 1 M deep.
2. Fill pit upto one-third its depth with large stones of size 10-15 cm diameter. This is followed by stones 5-10 cm diameter filled up to two-thirds depth.
3. Place a 20 cm diameter clay pot with small holes, 2 cm diameter, at the outlet of the channel. Coconut fibre/leaves placed inside trap the sediments. Fill pit with small stones 1 cm diameter upto a level of 10 cms below the ground level.
4. Place a 5 cm layer of twigs followed by a gunny bag. Place soil on top of gunny bag and compact it to ground level.

Fig. 4.2. Step by step building of a soakage pit.

4.4 How to build a kitchen garden

1. First, select a site for your vegetable plot. It should be at a lower level than the outlet of the waste water, so that the drain has a slope.
2. Next, beat down the soil so that it is compacted (packed closely together). A channel is cut in the compact soil for the water to flow through. The channel can be left unlined or lined with stone. A clay pipe laid along the channel can also be used. Be sure that the drain is kept clean, so that the water can flow freely to the plot.
3. Get help from the local agricultural officials to decide which vegetables are suitable for a kitchen garden. It may also be possible to grow fruits.

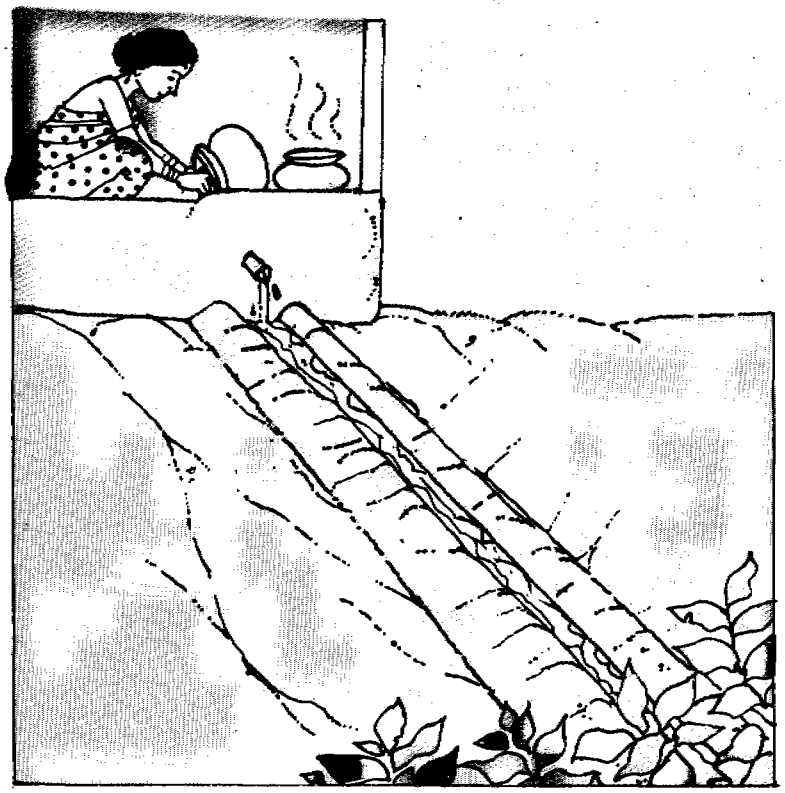


Fig. 4.3. Waste water for a kitchen garden

4.5 What scout/guide leaders can do

1. Understand why stagnant pools, which are breeding ground for mosquitoes, are a health hazard.
2. Identify the places around the house, or village, where water collects.
3. Help the community understand why stagnant pools lead to disease.
4. Suggest ways to prevent water from stagnating. Help families to construct drains to kitchen gardens or build soakage pits.
5. Help the community to identify sites for common soakage pits, build and maintain them.

DISPOSAL OF HUMAN EXCRETA 5

5.1 The problems

5.1.1 *Spread of disease*

Many diseases are spread from person to person through human excreta exposed by people defecating in the open. Disease-causing germs and worm eggs are present in the excreta of an infected person. These harmful organisms, which cannot be seen with the naked eye, continue to live in the excreta. They are transmitted from one person to another through water, vegetables, hands and insects like cockroaches and flies. The diseases that are spread in these ways include:

* several types of intestinal worms
* diarrhoea, dysentery and cholera
* typhoid and hepatitis (jaundice)
* polio

5.1.2 *Where to go?*

People, particularly in rural and some urban areas, defecate in the field, forest, river bank, the the edge of a railway track or along the roadside. Nowadays many of the woods and bushes have disappeared as the lands are developed for cultivation and towns and cities expand.

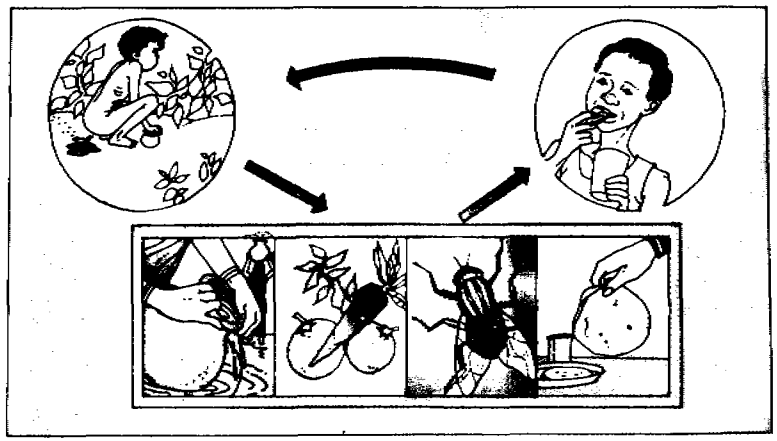


Fig. 5.1. How diseases from human excreta spread

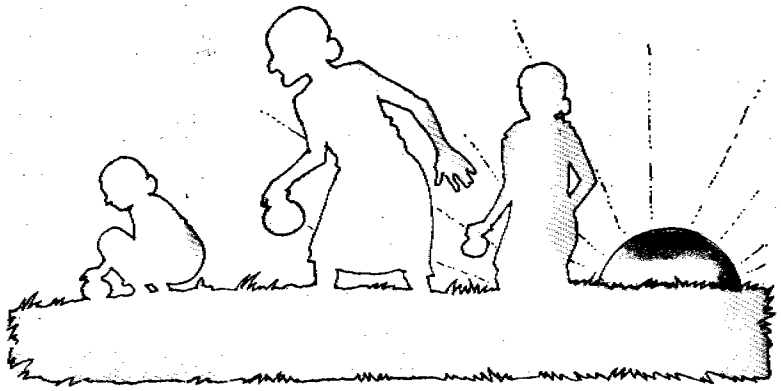


Fig. 5.2. Women go for defecation before dawn or after dusk

Women have to go out before dawn or wait till after dusk for defecation. If they have the urge during the day, there is nowhere that they can go for defecation. Very often they have to suppress it. This is painful and harmful to health.

Furthermore, many farmland owners do not allow people to defecate on their agricultural land particularly during the growing seasons.

Toddlers just defecate outside their house, in a drain, or in the street. Many people believe that children's excreta is harmless. This is not true. there are more disease-causing organism in children's than in an equal weight of adult excreta.

5.2 The solutions

5.2.1 ***Use a sanitary latrine***—A sanitary latrine stops the spread of diseases caused by exposed excreta. It also gives privacy and is convenient for all—the young, old, sick, women and men. A sanitary latrine near the house is very convenient in the rainy season. Not much space is required for a latrine.

Two kinds of sanitary latrines are recommended.

(a) *Pit latrine*—Where water is very scarce, and solid materials such as leaves, mud or stones are used for anal cleaning, a pit latrine is suitable. However, to eliminated the nuisance of flies and bad smell, the latrine can be improved to a Ventilated Improved Pit (VIP) latrine. A VIP latrine has a ventilation pipe which carries the bad smells away. The inside is kept quite dark so that flies in the pit tend to go up the vent pipe because they are attracted by light. However a fly screen fitted on top of the pipe traps them.

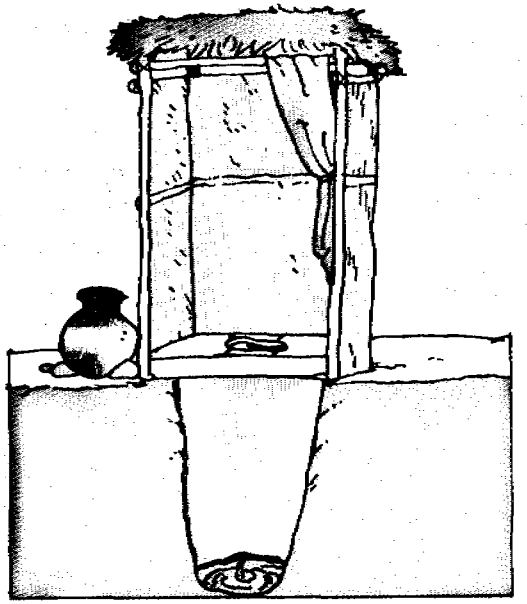


Fig. 5.3. A pit latrine

(b) *Pour flush waterseal latrine*—This type is more commonly used where water is available and is used for anal cleaning. Water from a container is poured into the latrine pan to flush the excreta into a pit. If the pan is wet before it is used for defecation, flushing is more effective, as the excreta will not stick to the pan. About two or three litres of water are required for flushing. The excreta, urine and water collect in the pit which is covered. Some water always remains in the pan. This forms a "waterseal". It prevents bad smells from coming out of the latrine pit. A big pot of water can be kept near the latrine for flushing and cleaning the latrine.

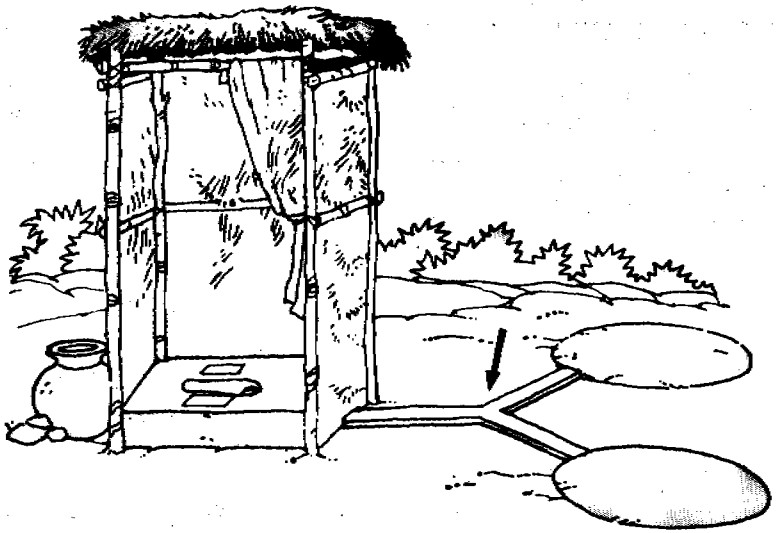


Fig. 5.4. A pour flush waterseal latrine

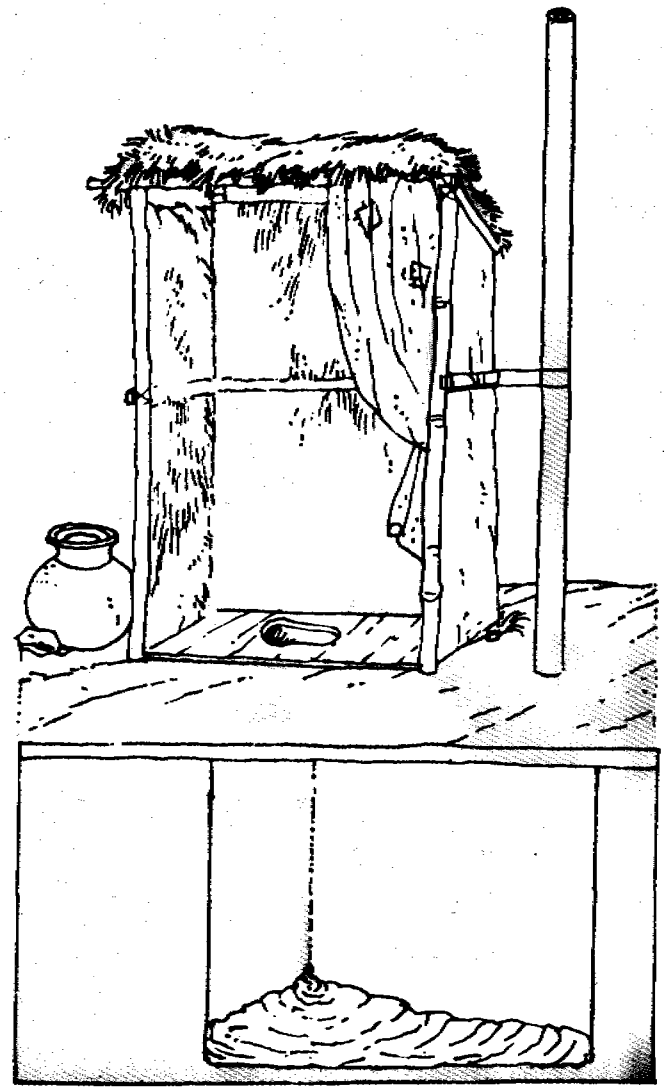


Fig. 5.5. a VIP latrine

The latrine has two pits. For a family of 5 to 6 members, each pit is of 1 metre diameter and 1 metre depth. Only one pit is used at any time by blocking the inlet of the Y-shaped drain leading to the second pit (as shown by the arrow in Fig. 5.4). One pit will fill up to the drain outlet level in about three years.

The excreta should remain in the covered pit undisturbed for about two years to decompose. After that time, the odourless contents of the pit can be handled safely and used as fertilizer.

Thus the latrine can be used as long as one wants by using each pit alternately.

5.3 Building a latrine

First, a suitable site is selected. The latrine should not be on a slope or in a depression. It must be located away from the water source to prevent the water from being contaminated. If the groundwater level in the area is more than 5 metres below the bottom of the latrine pit, it should be at least 10 metres away to prevent water contamination. The safe distance is 15 metres. If the ground formation is made up of fissured rock through which the water can flow fast the risk is higher. The advice of the block or district engineer should be sought.

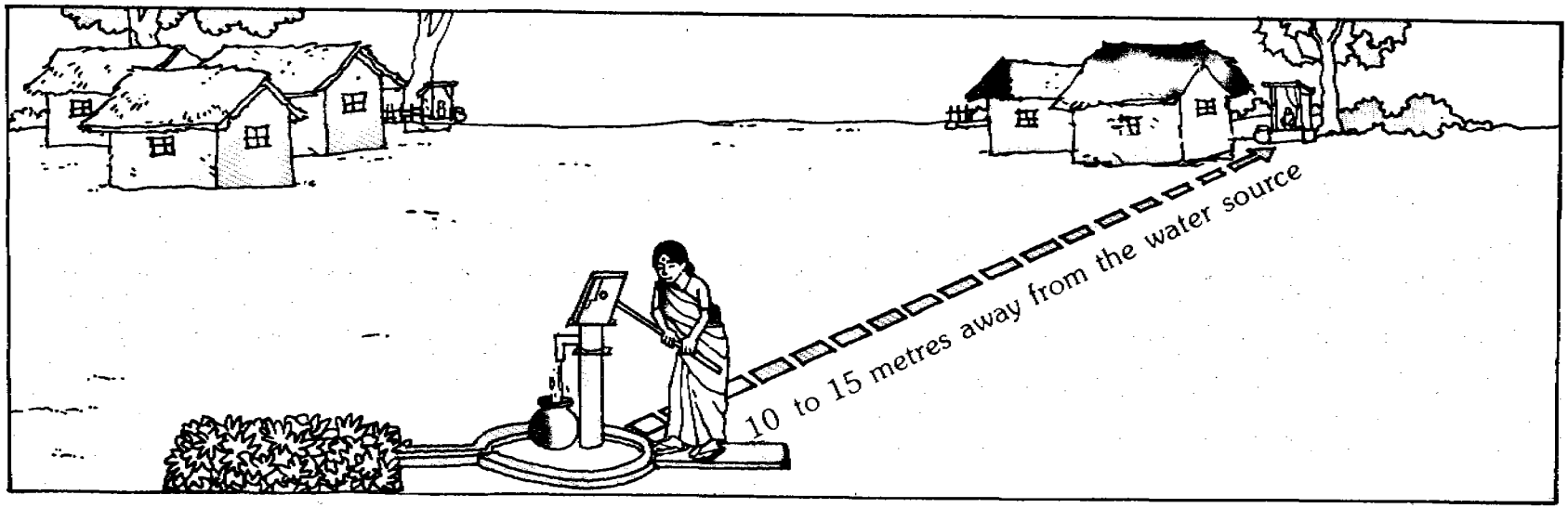


Fig. 5.6. Safe distance between water source and latrine.

Table 1: Materials and labour required for waterseal latrine up to plinth level[1]

Item	Quantity	Cost/Unit (Rs*)[2]	Amount (Rs.)
Bricks	410 units	0.45	184.50
Cement	2 bags	55.00[3]	110.00
Brick ballast	0.15 M^3	75.00	11.25
Aggregate	0.1M^3	110.00	11.00
Sand	0.5M^3	60.00	30.00
Steel (6 mm dia)	6 kgs	7.00	42.00
Pan & Trap (mosaic)	1 set	40.00	40.00
Trained Mason	2 man-days	40	80.00
Unskilled labourer	2 man-days	20	40.00
			Rs. 548.75
	10% contingencies. . . .		54.80
	Total. . . .		Rs. 603.55
	Say.		Rs. 600.00

Note: (1) The cost does not include the superstructure
(2) New Delhi price 1986
(3) Rate based on government department price

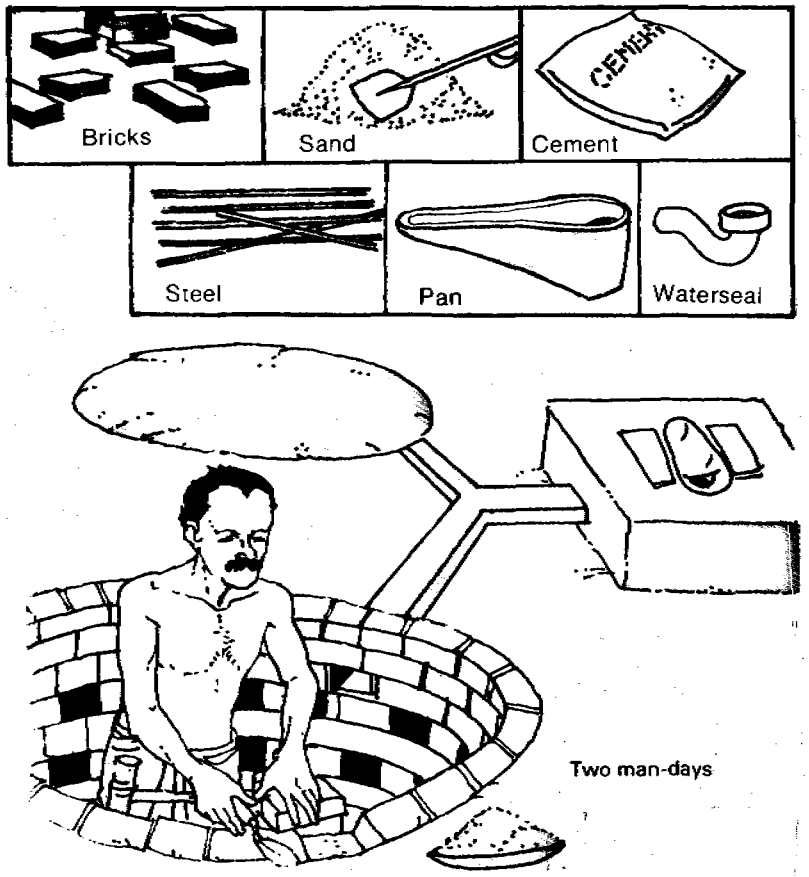


Fig. 5.7. Building a waterseal latrine

The cost of a latrine in your area will depend on the price of materials required. Table 1 lists the material required for a waterseal latrine.

If freely available stones or scrap construction materials are available, they can be used to reduce the cost further. Where the soil formation is stable, the pits need to be lined only for the top 30 cm. to take the weight of the pit covers.

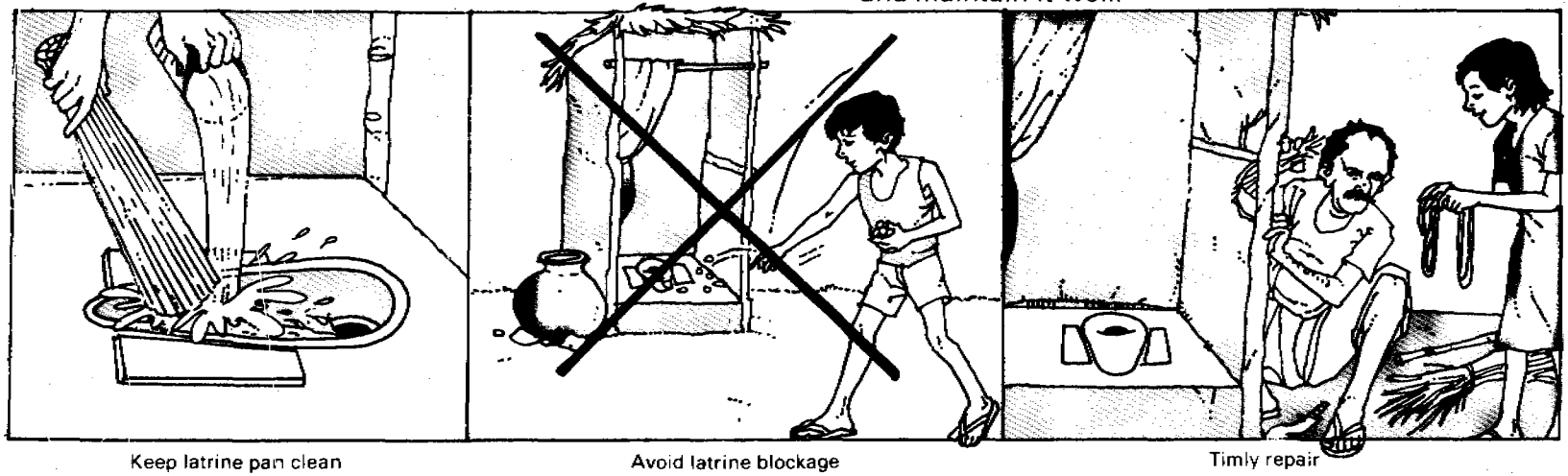
(The district or block engineer can provide more details on the design and construction).

5.4 Maintaining a waterseal latrine in good condition

1. The latrine pan should be cleaned once a day with a broom, using soap powder or ash.
2. Stones, garbage or other solid wastes should not be thrown into the pan. This will block the latrine.
3. If any part of the latrine is damaged, repairs should be made promptly.

5.5 What scout/guide leaders can do

1. Understand why it is necessary to dispose of human excreta properly, in a sanitary latrine.
2. Discuss with the people why they should use sanitary latrines.
3. Help the community understand the link between human excreta and disease.
4. Construct a latrine in one's own house, if there is not one already, and maintain it well.
5. Support family efforts to prevent children defecating near their houses and on the streets.
6. Discuss the benefits of using a latrine with individuals, families and village leaders such as sarpanch, school teachers or the village priest.
7. Help people to build latrines, and explain how to use and maintain it well.



Keep latrine pan clean | Avoid latrine blockage | Timly repair

Fig. 5.8. Maintenance of waterseal latrine.

DISPOSAL OF GARBAGE AND CATTLE DUNG

6

6.1 The problems

A germ that lives in filth, particularly in animal dung causes a deadly disease called tetanus (lockjaw). The germs enter the body through an open wound. New born babies can get tetanus if the umbilical cord is cut with a dirty blade or one which is smeared with cowdung. Nearly 20 percent of the infant deaths in India are due to tetanus.

Piles of garbage lying around the house or street provide a breeding ground for flies. They can also block roads and drains. They attract pigs, rats, dogs and other animals. Flies breed in cowdung and garbage. Mosquitoes also breed in the water blocked by piles of garbage and dung. Mosquitoes spread malaria and filariasis.

Fig. 6.1. Insanitary environment

6.2 The solutions

1. Vaccination of pregnant mothers and infants against tetanus. A complete immunization schedule is listed in Appendix II.
2. Keeping the house and surroundings clean. Use a dustbin to collect the garbage. Any empty tin or carton or a wooden crate will do. Keep it covered and empty it everyday.
3. Converting garbage into compost in a garbage pit. Vegetable peels, leaves, waste paper and cattle dung can be put into the garbage pit. The contents of the pit decompose slowly to form compost. This serves as a good fertilizer and can be used in the kitchen garden or field.

6.3 How to build a garbage pit

It is quite easy to build a garbage pit for oneself.

1. Select a site at some distance away from the house, like the corner of the backyard.
2. Dig a pit 1 metre long, 1 metre wide and 0.8 metre deep, in the backyard.
3. Build an earth bank about 10 cm high around the pit and compact it well. This prevents rain water from flowing into the pit.

Fig. 6.2. Building a garbage pit

4. Every week, level the contents in the pit with a rake or stick and cover with a layer of compacted earth of about 3 finger thickness. This will prevent flies from breeding in the pit. When full, the pit should be covered with a layer of firm soil and left undisturbed. After 2 to 3 months, the contents become good fertilizer.
5. Construct a new pit next to the existing one when the first one is full.

6.4 What scout/guide leaders can do?

1. Understand now piles of garbage and dung help spread disease.
2. Use a dustbin and build a garbage pit for one's own family, if there is not one already.
3. Discuss with the people the ways in which they dispose of garbage and dung.
4. Motivate families to use dustbins.
5. Support people's efforts to build household and community garbage pits.
6. Organise community acitvities to clean up the village lanes, streets and other common areas.

Fig. 6.4. Scouts and community members working together

PERSONAL HYGIENE 7

7.1 The problems

Many diseases are spread by poor personal hygiene. Some bad hygiene habits are discussed.

Human excreta, contains many harmful germs. It is one of the chief sources from which diseases are spread. Mothers who clean their infants after the latter defecate, may forget to wash their own hands with soap or ashes. These germs also collect under long, dirty finger nails. When mothers then prepare the family's food, the germs sticking to their hands can be passed on to the food. In this way the whole family can be infected with diarrhoeal from one sick child.

Unwashed skin results in skin diseases such as scabies, eczema and ringworm. They make the skin itchy and sore. Skin diseases spread very quickly from person to person by touch,through clothes and bedding.

If the teeth are not cleaned regularly, food particles collect in between them and rot there. This causes cavities in the teeth, leads to toothache and causes bad breath.

Diseases such as the common cold and tuberculosis (TB) are spread through the air when sick people cough, sneeze or spit on the ground.

7.2 The solutions

Some of the more important aspects of personal hygiene are listed here.

7.2.1 ***Sanitary latrine***—It is important to use a sanitary latrine if it is available. Otherwise try to save money to build a latrine near the house.

7.2.2 ***Washing hands with soap or ash***—This is the most important clean habit. Studies in Bangladesh have shown that just washing hands with soap before handling food and after defecation has reduced the transmission of certain diarrhoeal diseases by 50 percent. Children usually forget to do this. It is also important to wash hands before preparing food and before eating. Soap or ash will remove the traces of excreta and dirt on fingers and hand.

7.2.3 ***Bathing and washing clothes***—Having a bath everyday using soap regularly is essential. Find time to wash clothes regularly, and to air bedding in the sun.

7.2.4 ***Not playing in dirt***—Children should not play in the soil near where people defecate. Motivate the people to wear slippers.

7.2.5 ***Cleaning teeth***—Teeth should be cleaned every morning and before going to bed. Use a neem twig and salt. This prevents tooth decay and keeps the breath fresh. Tooth brush and tooth paste are better if they can be afforded.

7.3 What scout/guide leaders can do?

1. Understand how diseases are spread by poor personal hygiene.
2. Observe good personal habits and set an example for others to follow.
3. Help people to understand the connection between good personal hygiene and health.
4. Discuss with the school teacher and others how young people can grow up learning to observe good personal hygiene.
5. Encourage people to improve their hygiene.
6. Think about ways in which clean habits are passed on to toddlers and young children. Let each older child adopt a younger child to teach good personal hygiene.

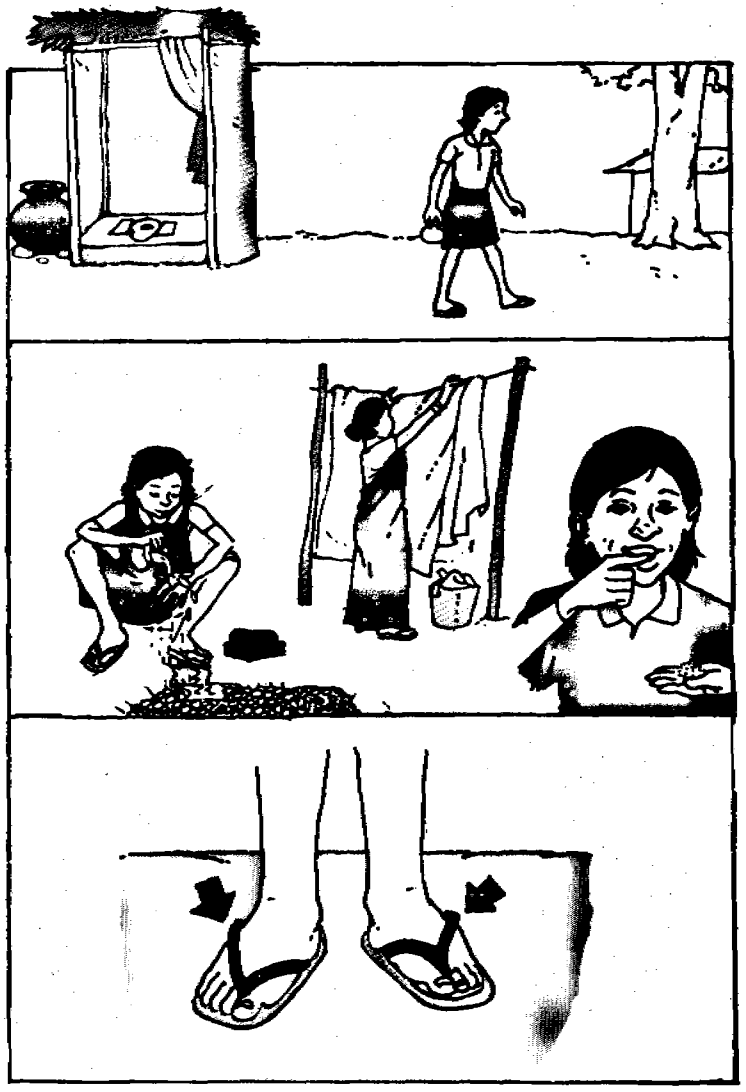


Fig. 7.1. Good hygiene practices

SANITATION IN THE HOME

8

8.1 The problems

Many village homes are usually damp, dark and stuffy. they lack light and ventilation. There may be only one room in which the whole family of five or six have to live. They may have to cook in the same room, and the women may also bathe there. Often people and animals have to share the same roof. Insanitary surroundings attract disease-carriers such as rats, flies and cockroaches into the house.

The smoke from the conventional chulha (open stove) causes eye irritation and respiratory disease, particularly among children and old people. Studies have shown that smoke inhaled by the housewife during daily cooking is equivalent to smoking 20 packets of cigarettes per day. Hence pregnant mothers can even give birth to unhealthy babies.

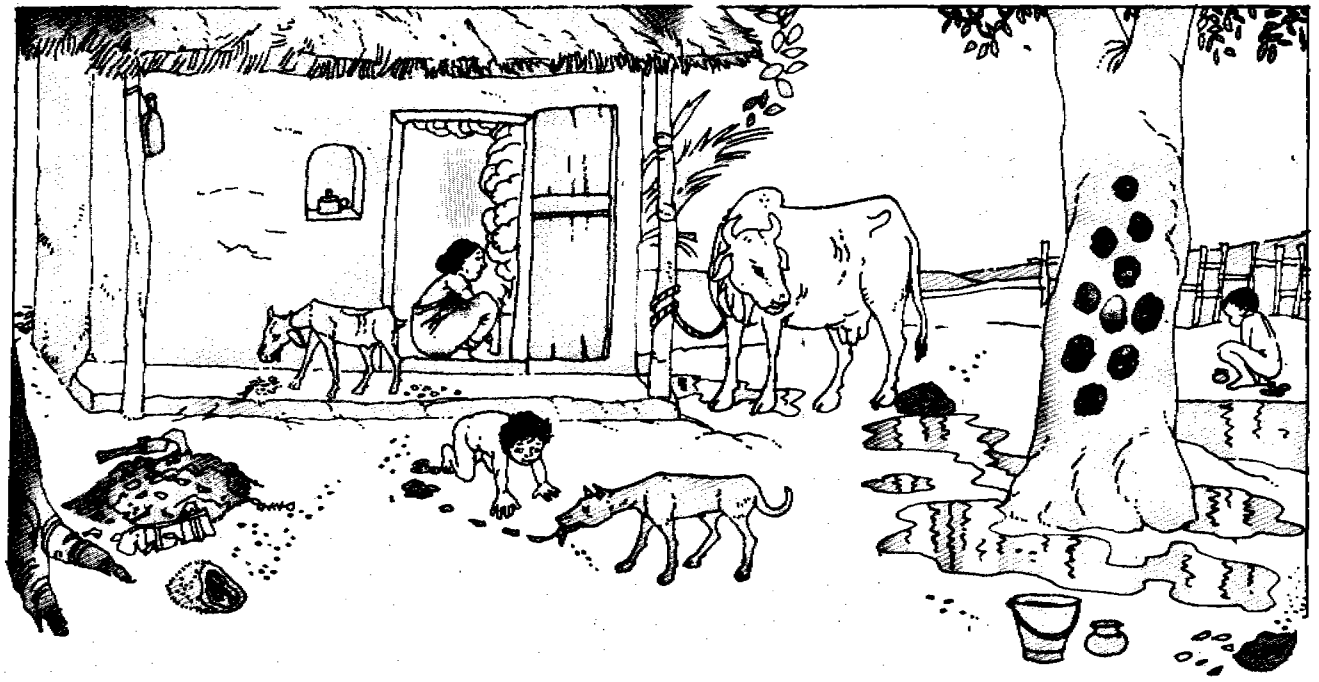


Fig. 8.1. Insanitary home environment spreads diseases

8.2 The solutions

1. More than one-third of one's life is spent in the home! Try and have enough openings for light and air.

2. Keep the house clean. Sweep the floor daily and throw the rubbish in a garbage pit in the backyard.

3. Use a smokeless chulha. It will prevent the smoke from filling the house, because the smoke goes out of a chimney attached to the chulha. It will reduce respiratory disease and irritation of the eyes.

4. Keep food and drinking water covered. Use a cupboard with a wire mesh door, for storing food to keep away insects and rats.

5 Have a common ladle to take water out of the water pot, instead of each person dipping a cup into it to take water.

6. Keep the surroundings of the house clean. Remove piles of garbage, dung and stagnant pools of water. Use a garbage pit. Grow some vegetables in a kitchen garden and build an earth drain to divert the waste water from the house to the garden.

7. Build a simple bathing cubicle and a soakage pit for the waste water.

8. Build a sanitary latrine.

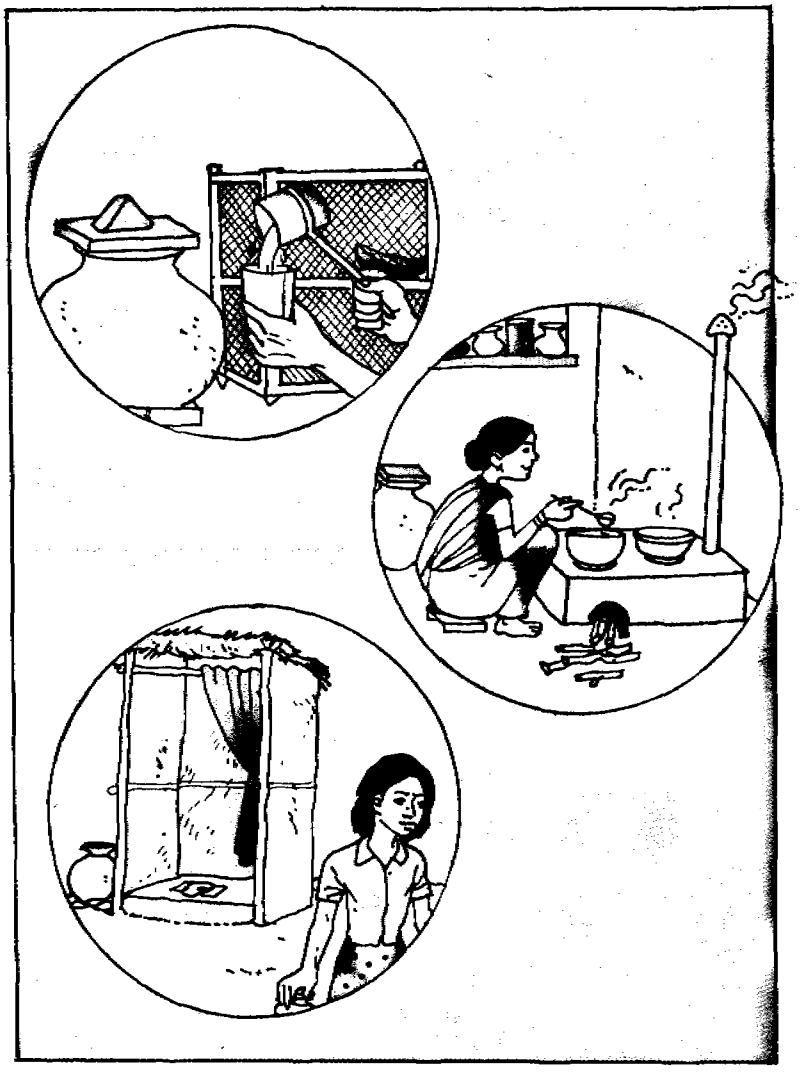


Fig. 8.2. Good home hygiene

9. Build a cattle shed away from the house. Make its floor of stones or brick, sloping towards a lined drain. Use cement or lime mortar to fill the joints in the floor and to line the drain. Connect the drain to a soakage pit. In this way the animals' urine can be drained away. Sweep the shed regularly and keep it clean.

8.3 What scout/guide leaders can do?

1. Understand how improved home sanitation can prevent the spread of disease.
2. Adopt good household sanitation practices in one's own home—build a soakage pit, a garbage pit and a kitchen garden.
3. Help people understand how clean houses prevent disease.
4. Discuss with people the solutions they have in keeping their houses and surroundings clean.
5. Support people's efforts to clean up their houses and surroundings, by building soakage pits, kitchen gardens etc.
6. Discuss with the community how they can jointly maintain the cleanliness of common areas, like streets, drains etc. and support their efforts to do so.

PREVENTION OF GUINEA WORM DISEASE

9

9.1 What is guinea worm disease?

Guinea worm disease is caused by a parasite The mature female worm which is white in colour, is 50-150 cm long and 0.2 cm in diameter. It is generally found just beneath the skin of an infected person's lower limbs, i.e. legs, feet and hands. As the female worm prepares to discharge larvae, it produces a painful blister or sore. The guinea worm discharges the larvae through the blister when it is immersed in the water. The adult female worm emerges from the blister and has to be pulled out slowly by winding the worm around a small stick. This can take one or two months.

Fig. 9.1. A guinea worm patient

Disability and severe pain persist from the time of blister formation until the worm is completely pulled out. Guinea worm disease is not a killing disease; however, tetanus appears as a secondary infection.

9.2 Where and when does guinea worm disease occure in India?

Guinea worm disease is prevalent in seven states: Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu. It is seasonal, and occurs from April to September, when the agricultural activities are at a peak.

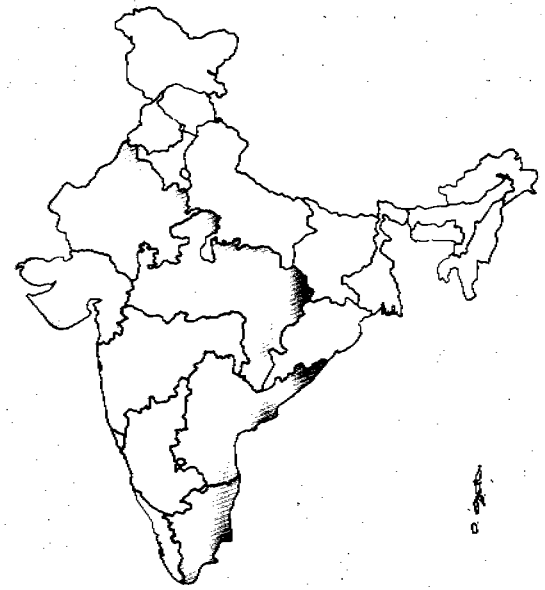


Fig. 9.2. Guinea worm prevailing states

9.3 How is guinea worm disease transmitted?

Guinea worm enters the human body *only* via drinking water and not directly from person to person.

The disease occurs in villages where people get drinking water from open sources such as tanks, ponds or stepwells.

9.4 How does guinea worm enter into the human body—The guinea worm cycle

1. A blister is formed on the skin of the lower limbs of an infected person.
2. When the infected person steps into a tank, pond or stepwell, the blister comes in contact with the water. The guinea worm then releases its larvae from the blister into the water.
3. The larvae are eaten by very small waterfleas, called cyclops. Thus the cyclops become infected.
4. After the water containing infected cyclops is drunk, the cyclops eventually die and release the larvae. These then grow inside the human body.
5. The worm travels through the body towards the skin, where it continues to grow. It matures in one whole year after it enters the body.

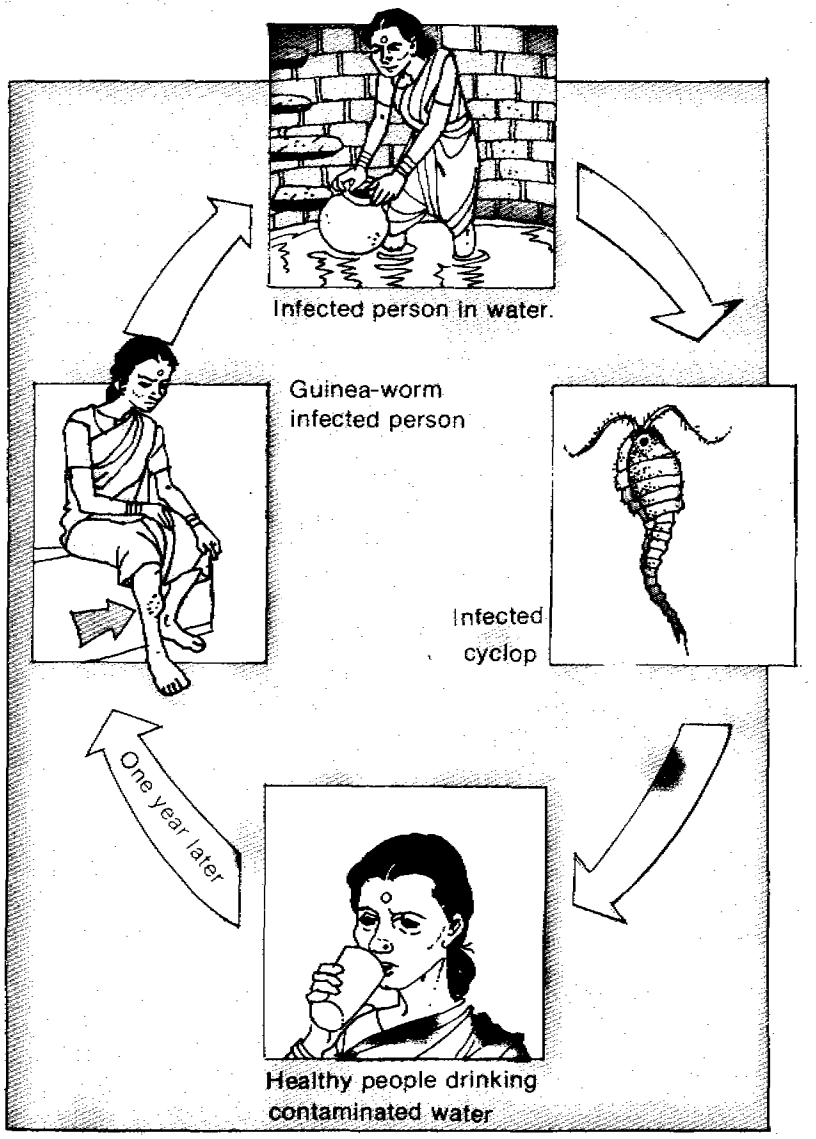


Fig. 9.3. The guinea worm cycle

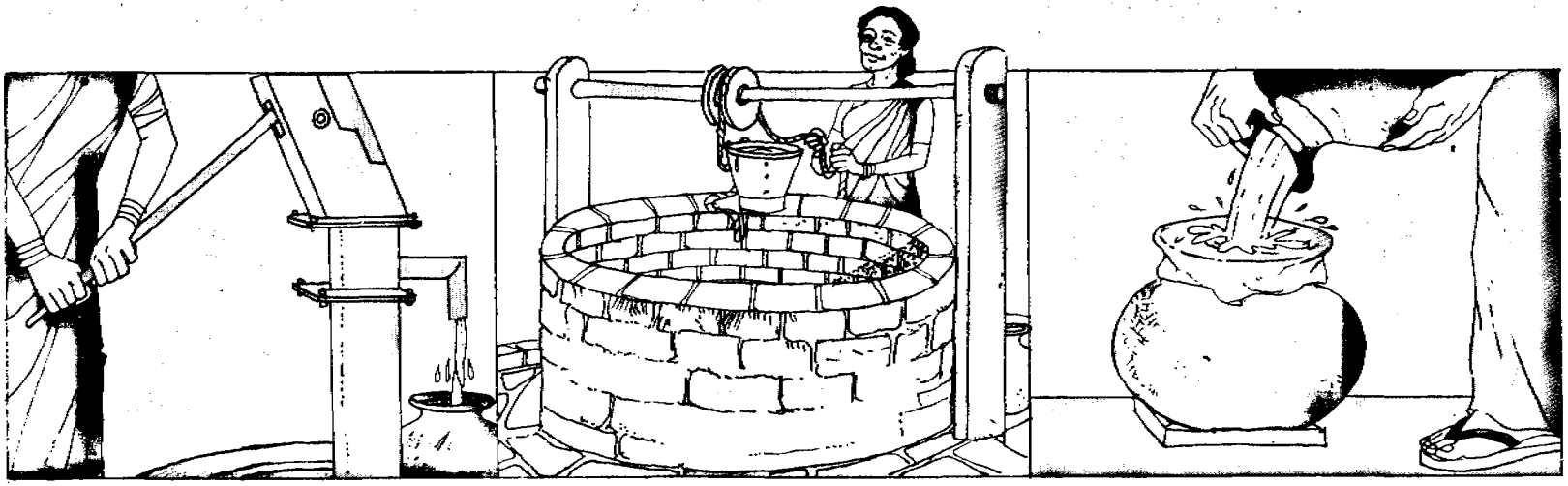


Fig. 9.4: Prevention of guinea worm

9.5. How can guinea worm disease be prevented?

Guinea worm disease is one of the most easily preventable diseases. It can be efficiently and permanently controlled by simple measures.

* educating guinea worm patients not to step into the water source.
* installing bore-wells with handpumps, to ensure safe water source.
* converting step wells into draw wells with pulleys, so that people do not have to step inside.
* boiling drinking water to kill the infected cyclops
* filtering drinking water through a fine-meshed, clean cloth to remove the infected cyclops
* adding chlorine either in the drinking water pitcher or to the water source to disinfect the drinking water.
* Adding certain chemicals, like Temophos (Abate), to the open water source to kill the infected cyclops.

9.6 What scout/guide leaders can do?

1. Understand the cycle by which guinea worm disease is spread.
2. Help people to understand this process.
3. Help them identify the water sources which could be contaminated by guinea worm
4. Encourage people to use handpump water, if available, for drinking and cooking.
5. Encourage people to filter their drinking water with a fine mesh, clean cloth; or boil the drinking water;or disinfect it with chlorine.
6. Encourage guinea worm patients to attend the Primary Health Centre for guinea worm extraction.
7. Locate guinea worm patients and inform the local Primary Health Centre.

PREVENTION AND CARE OF DIARRHOEA

10

10.1 What is diarrhoea?

Diarrhoea is a killing diease. It is a very common illness, especially among young children who are malnourished.

10.2 Why is diarrhoea dangerous?

A person with diarrhoea loses water and salt and may become dehydrated. Dehydration is rapid in infants and young children. Dehydration can kill. In India 15 lakh children, under 5, die every year from diarrhoea caused by unsafe drinking water and insanitary environment. This averages three diarrhoeal deaths per minutes.

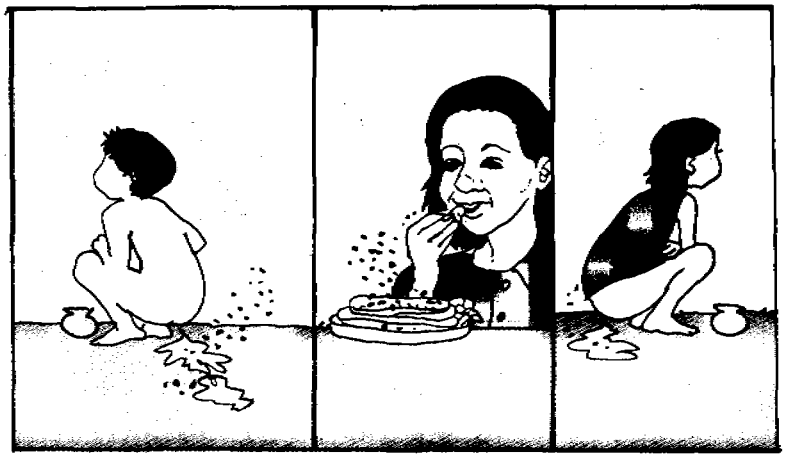


Fig. 10.1. Spread of diarrhoea

10.3 How does diarrhoea spread

Diarrnoea spreads very quickly from person to person. The excreta of a child or adult suffering from diarrhoea contains disease-causing germs. They can contaminate water sources. They also stick to unwashed hands or are carried by flies to food and drink. In this way, germs from the excerta of an infected person pass directly, or indirectly, to the mouth of a healthy person, who swallows the germs and gets diarrhoea.

10.4 Preventing the spread of diarrhoea

The spread of diarrhoea can be controlled only by breaking the chain through which the harmful germs are carried from person to person. The chain can be broken by these actions

* do not defecate in the open
* use a sanitary latrine
* wash hands with soap or ash after defecation, before preparing and eating food
* protect drinking water
* keep food covered, and prevent flies breeding by safely disposing of garbage and dung.

10.5 How to care for children with diarrhoea

When a child has diarrhoea, he/she passes watery stools. The body loses water and salt. The child should be given plenty of liquids to drinks as described below.

1. A home-made special drink can be prepared as follows:

1.1 Take to pao (half litre) of clean water preferably boiled and cooled.

1.2 Add a fistful of sugar to the water. If sugar is not available add a piece of jaggery (the size of a betel nut).

1.3 Add a three-finger pinch of salt as shown in the drawing. Brush off any extra salt that is stuck to the fingers

1.4 Give the child one glass of this drink after every watery stool he passes.

1.5 If no sugar or jaggery is available at home, give the child a glass of fluid such as:

—rice water with a pinch of salt

—water in which dal is boiled

—tender coconut water

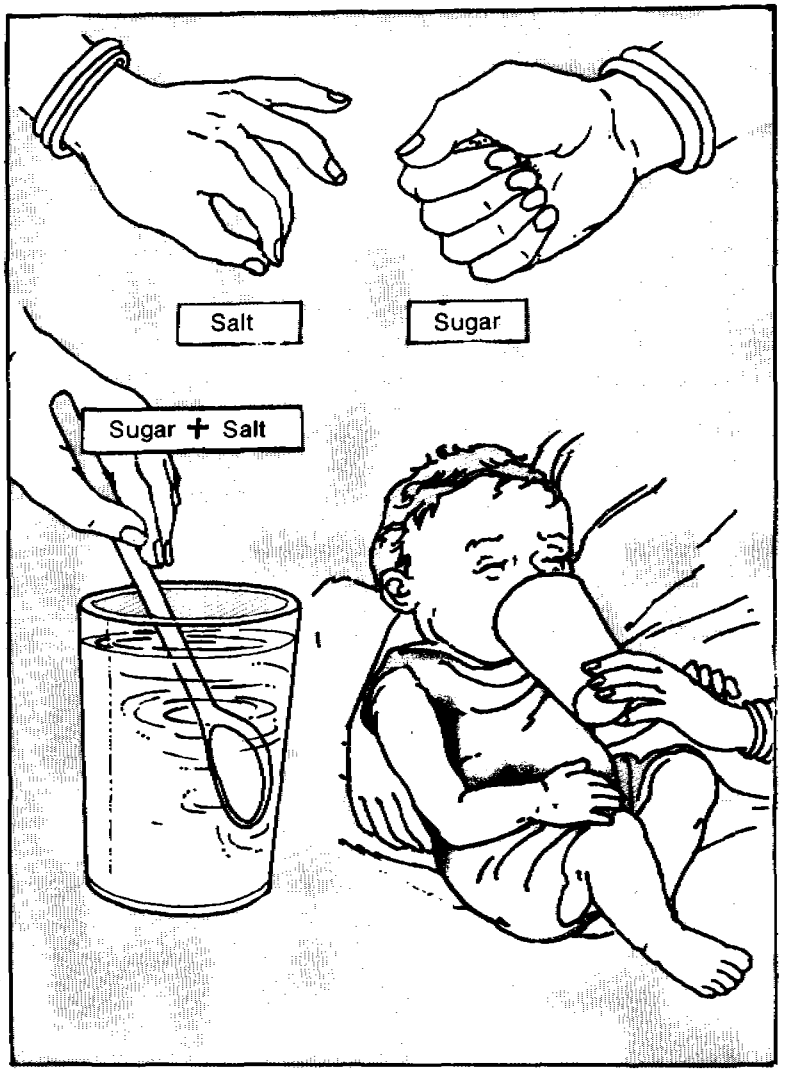


Fig. 10.2. Preparation of rehydration drink

2. In some areas, packets of oral rehydration salt (ORS) which contains glucose and a combination of salts, can be obtained from the health worker. Prepare the special drink by mixing a packet of ORS in an amount of water specified on the packet or by the health worker.
3. If diarrhoea persists for more than two days, get help from the nearest primary health centre.
4. For a baby, breast milk is good. A baby with diarrhoea should continue breast feeding. Do not stop feeding babies, children or adults who are suffering from diarrhoea.

6.4 What scout/guide leaders can do?

1. Understand how diarrhoea spreads from person to person.
2. Help people to understand this process.
3. Learn to prepare the home-made special drink and prepare special drink from ORS packet. Show others how to prepare it and encourage them to use it.
4. Encourage people to use other available fluids such as rice water with salt as speical drink.
5. Motivate and help community efforts to break the chain that spreads diarrhoea.

APPENDIX I

SOME MAJOR WATER AND SANITATION RELATED DISEASES

The major water and sanitation related diseases prevalent in India are tabulated below. The routes of transmission as well as the main preventive measures to control these diseases are also outlined.

Diseases	Major routes of transmission*	Major actions for prevention*
Diarrhoea		
(1) Cholera	—contaminated water (1,2,3)	• safe disposal of human excreta —use sanitary latrine (1,2,3)
(2) Dysentery	—contaminated food (1,2,3)	
(3) Common diarrhoea	—contaminated hands (1,2,3)	• washing hands with soap or ash before handling food and after defecation (1,2,3)
	—flies (1,2,3)	• use of protected water sources (1,2,3)
Worm infection		
(1) Roundworm	—contaminated water (1,3)	• safe disposal of human excreta —use of sanitary latrine (1,2)
(2) Hookworm	—human excreta (1,2)	
(3)Guineaworm	—contaminated food (1)	• washing hands with soap or ash before handling food and after defecation (1)
	—contaminated hands (1)	• wearing slippers (2)
		• use of protected water sources (1,3)
Skin & Eye infections		
(1) Scabies	—personal contact (1,2)	• good personal hygiene (1,2)
(2) Trachoma	—flies (2)	• clean clothes & bedding (1)
		• keep flies away from eyes (2)
Insect related diseases		
(1) Malaria	—Mosquito (1,2)	• remove water stagnation by proper disposal of waste water (1,2)
(2) Filariasis		

*The numbers in brackets correspond to the numbers given to the diseases

APPENDIX II

IMMUNIZATION SCHEDULE

Beneficiaries	Age	Vaccine (2)	No. of doses (1)
Infants	6 wks-12 months	DPT **	3
		OPV **	3
	Birth-12 months	BCG **	1
	9-12 months	Measles	1
Children	16-24 months	DPT	1 (booster)
		OPV	1 (booster)
	5-6 years	DT	1*
		Typhoid	2*
	10 years	TT	1*
		Typhoid	1*
	16 years	TT	1*
		Typhoid	1*
Pregnant women	16-36 week	TT	2

* Booster. Give two doses if not vaccinated previously

**Should be given as early as possible

Source : The immunization programme in India, Government of India, Ministry of Health and Family Welfare, New Delhi 1988

NOTE : (1) Interval between doses should not be less than one month
(2) DPT-Diphtheria, Pertussis (whooping cough) and Tetanus
BCG-Bacillus-Calmette Guerin (Tuberculosis vaccine)
DT-Diphtheria, tetanus
TT-Tetanus toxoid
OPV-Oral Polio Vaccine (Polio Vaccine)

List of UNICEF Publications on the promotion of sanitation

S. No.	Title	Type	Language
1.	Promotion of sanitation in Primary School	Booklet	English
2.	Promotion of Sanitation in Anganwadis	Booklet	English
3.	School Sanitation	Booklet	English, Hindi, Telugu, Oriya, Marathi, Kanada and Bengali
4.	Anganwadi Sanitation	Booklet	English, Hindi, Telugu, Oriya, Bengali, Marathi and Urdu
5.	Use and Maintenance of Waterseal Latrine	Booklet	English, Hindi, Telugu, Tamil, Oriya, Marathi, Bengali, Gujarati, Kanada, Malayalam and Urdu.
6.	**Towards Better Health Series**		
	i) Waterseal Latrine (for Potential beneficiary)	Pamphlet	English
	ii) Waterseal Latrine (Technical Details)	Booklet	English
	iii) Smokeless Chulha	Booklet	English
	iv) Sanitation and Diseases	Flashcards	English, Hindi, Telugu, Tamil, Oriya, Marathi,
	v) Waste Water and Cattle Dung/Garbage Disposal	,,	Bengali, Gujarati, Kanada, Malayalam, and Urdu
	vi) Disposal of Human Excreta Sanitary Latrine	,,	,,
	vii) Personal Hygiene	,,	,,
	viii) Vector Control	,,	,,
	ix) Home Sanitation	,,	,,

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