

Making Latrines User Friendly for Everyone

An Exploratory Research Study on the Discomfort faced by Pregnant Women, Elderly, Overweight, Sick and Disabled People when Using Squat Latrines



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TABLE OF CONTENTS

1.	SUMMARY	2
2.	INTRODUCTION.....	2
2.1	Background.....	2
2.2	Rationale	3
2.3	Scope.....	3
2.4	Objectives.....	3
3	METHODOLOGY.....	3
4	CHARACTERISTICS OF RESPONDENTS.....	4
5	FINDINGS	5
5.1	Scale of the problem.....	5
5.2	Types of problems faced	6
5.3	Suggestions from users for improving latrine designs.....	7
6	SUGGESTED DESIGN MODIFICATIONS	9
7	BROADENING NEWAH'S UNDERSTANDING OF DISABILITY.....	10
8	RECOMMENDATIONS.....	10
9	CONCLUSIONS	11
Annex A	Questionnaire Used in the Study	12
Annex B	Communities visited during the research	12
Annex C	Research Team	12
Annex D	Drawings of Design Options.....	13

1. SUMMARY

Due to the low sanitation coverage in Nepal, 47% according to the 2001 census, and the number of latrines to construct in order to meet the Millennium Development Goals, estimated at 14,000 per month for the next 12 years¹, the focus in the sanitation sector is on accelerating coverage. At the same time it is vital that all members of a community use the existing latrines. Even if one member of a community practices open defecation faecal matter spreads and the entire community is affected resulting in disease and possibly death.

This study sought to explore the problems experienced by pregnant women, elderly, overweight, sick and disabled people when using NEWAH supported latrines. The study found that most of these types of users experience physical discomfort when using the latrines. In addition some respondents reported psychological stress when using the latrines. In some cases the discomfort is so extreme that users revert to open defecation.

Engineers who design latrines are not sensitive to these issues. After consultation with these types of users a number of options have been designed to make using a latrine more comfortable, based on suggestions by the users themselves. These options include two types of commode to take the user's weight while using the latrine and two types of handles or bars for the user to support themselves when moving in and out of the squatting position. These options will be piloted and evaluated in the coming year and the findings shared with other sectoral organisations.

The study has raised awareness within NEWAH on disability issues. During this process of learning NEWAH has understood that addressing disability issues means more than simply providing physical access to water and sanitation facilities for disabled people. Disability needs to be viewed in terms of **inclusion** of disabled people in all aspects of water and sanitation projects. The challenge now facing NEWAH is how to introduce and integrate these issues throughout the organisation.

2. INTRODUCTION

2.1 Background

The 2001 census estimated national sanitation coverage in Nepal at 47%. This means that 53% of the population, 12 million people, practice open defecation. At the World Summit on Sustainable Development (2002) Nepal committed to the Millennium Development Goal (MDG) of halving the proportion of people without access to sanitation by 2015. The implications of this target in Nepal are that approximately *14,000 latrines need to be constructed every month for the next 12 years*².

It is clear that if this target is to be reached innovative approaches need to be developed to accelerate sanitation. At the same time existing latrines must continue to be used. Having a latrine but not using it does not lead to health benefits. A latrine provides the 'primary' barrier against the spread of faecal matter, the source of most diarrhoeal pathogens, in the environment³. This barrier is easily breached if some members of a community do not have a latrine or if people do not use the existing latrines. In Nepal diarrhoeal diseases result in 33,000 preventable deaths each year, of which 28,000 are children.

¹ WaterAid Nepal, 2004.

² *ibid.*

³ Guidance Manual on Water Supply and Sanitation Programmes, DFID, 1998

2.2 Rationale

Studies have indicated that often latrines are constructed but not subsequently used, or not used by all members of the household. In order to realize the maximum potential health impacts of improved sanitation it is vital that all members of a community use a hygienic latrine. Even if only one person continues to practice open defecation the health of the entire community is jeopardized. The question then arises, 'why do some people who have latrines not use them?'

In 2003 the WaterAid Asia Regional Manager posted a message on the WaterAid Exchange recounting recent meetings with groups of women who had expressed discomfort using WaterAid supported latrines. These discussions were followed by a chance meeting with a physiotherapist who confirmed that many women have difficulty using squat latrines but that awareness of this problem is low due to the sensitivity surrounding sanitation issues and women's reluctance to share their experiences.

NEWAH has been developing a Gender and Poverty approach to water and sanitation projects and has a keen interest in ensuring that women participate fully in all project processes and benefit equally from project interventions. As part of the GAP approach project staff consult with women on the design of water points and some modifications have been made as a result - introduction of clothes hangers, raised walls for placing water containers, orientation of water points facing away from roads for privacy.

NEWAH realized that it had not consulted with women on the design of latrines and that this was an important issue both from a gender perspective and from the perspective of ensuring that women use the latrines.

2.3 Scope

The initial scope of the study was to explore the difficulties faced by **women** in using latrines. During data collection it became evident that it is not only women that face difficulties in using latrines. Some **elderly** people, **overweight** people, **sick** people and **disabled** people also face difficulties. The scope of the study was therefore broadened to include these types of users.

2.4 Objectives

The study had the following objectives:

- To explore the difficulties faced by women, elderly, overweight, sick and disabled people in using latrines; and
- To find out the views of these types of users for improving latrine designs to make them more comfortable to use.

3 METHODOLOGY

NEWAH is conducting a Looking Back Study of its older projects to find out their current status. Data collection is carried out by teams of two enumerators. The data collection for this exploratory study was integrated with the Looking Back Study. A simple questionnaire was developed (see Annex A) and enumerators carried out data collection on regular Looking Back Study visits. Respondents were people who had constructed a NEWAH latrine. Respondents were identified by the enumerators as and when they met suitable people in the communities. Respondents were selected who were:

- Pregnant
- Disabled
- Overweight
- Sick
- Elderly (above 50 yrs)
- Normal/ healthy people

Data collection was carried out from December 2003 to March 2004 in 15 communities in the Western region of Nepal (see Annex B for a list of communities) and a total of 46 respondents were interviewed.

4 CHARACTERISTICS OF RESPONDENTS

Table 1: Types of respondents interviewed

Type of users	Respondents					
	Female		Male		Total	
	No.	%	No.	%	No.	%
Elderly	13	72%	5	28%	18	39%
Normal/healthy	12	100%	0	0%	12	26%
Pregnant	8	100%	0	0%	8	17%
Overweight	3	75%	1	25%	4	9%
Sick	2	67%	1	33%	3	7%
Disabled	1	100%	0	0%	1	2%
Total	39	85%	7	15%	46	100%

Forty six respondents were interviewed, 39 females and 7 males. 39% of the respondents were elderly (over 50 years of age), 17% pregnant, 9% overweight, 7% sick (suffering from gout), 2% disabled and 26% were normal/healthy.

Disabled girl being carried to the jungle for open defecation, Chitawan



Table 2: Age of respondents interviewed

Type of person	No.	Age		
		Min	Max	Average
Disabled	1	14	14	14
Pregnant	8	18	40	26
Normal	12	19	50	34
Overweight	4	26	60	48
Elderly	18	52	96	67
Sick	3	63	75	70

The average age of the elderly people interviewed was 67 years and the average age of the pregnant women interviewed was 26 years.

All respondents use squat latrines supported by NEWAH.

Typical NEWAH supported latrine



5 FINDINGS

5.1 Scale of the problem

Out of the 34 physically challenged people interviewed 28 (82%) reported facing a problem when using the latrine.

- All pregnant women reported facing problems.
- 72% of elderly people reported facing problems.
- Three quarters of overweight people reported facing problems.

- Both the sick person and the one disabled person interviewed reported facing problems.

58% of the normal/healthy people interviewed also reported facing problems using the latrines, although their problems appear less serious (see Table 4 below).

Table 3: Number of users experiencing or not experiencing problems when using latrines by type of latrine

Type of users	Respondents			Having a problem						No Problem					
	Female	Male	Total	Female		Male		Total		Female		Male		Total	
	No.	No.	No.	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Old person	13	5	18	9	69%	4	80%	13	72%	4	31%	1	20%	5	28%
Normal/healthy	12		12	7	58%			7	58%	5	42%			5	42%
Pregnant women	8		8	8	100%			8	100%		0%				
Overweight person	3	1	4	2	67%	1	100%	3	75%	1	33%			1	25%
Sick person	2	1	3	2	100%	1	100%	3	100%						
Disabled person	1		1	1	100%			1	100%						
Total	39	7	46	29	74%	6	86%	35	76%	10	26%	1	14%	11	24%

5.2 Types of problems faced

The main types of problems reported when using the latrines are summarized below:

Physical discomfort

- Difficult to crouch down and squat for long periods of time without support;
- Knees, waist, back, stomach start aching after a few minutes of using latrine;
- Legs get tired, swollen, numb and cramp up;
- Stomach gets pressed hard while crouching down;
- Cannot use for long time due to pain in nerves, stomach, and uterus;
- Difficult to breathe while squatting;
- Nerves get stretched if using latrine for a long time;
- Difficult to balance while squatting and getting up.

Psychological problems

- Feels like something inside the body will come out instead of urine (pregnant women);
- Fear of falling into the pit;
- Concern that temporary latrine sidewall may fall down/blow away while using latrine.

Problems with latrine design

- Foot rest is not well leveled so there is a danger of slipping and falling back;
- Problem at night due to long distance from house to latrine and no light;
- Difficult to lift heavy cement squat hole cover every time;
- The space inside the latrine is very small;
- In direct pit latrine irritation due to foul smell, flies etc..

The types of problems faced by each different type of users are present below.

Table 4: Types of problems faced by different types of users

Type of users	Types of problems experienced
Disabled	1. Difficult to crouch down and squat for long periods of time without support.
Sick	1. Difficult to balance themselves while squatting and getting up. 2. Knees, waist, back start aching after few minutes of using latrine. 3. Foot rest is not well levelled so there is a danger of slipping and falling on back. 4. In direct pit latrine irritation due to foul smell, flies etc.
Overweight	1. Uncomfortable to crouch down due to large stomach. 2. Foot rest is not well levelled so become unbalanced while squatting. 3. Ankles start paining, legs get numb, and body gets tired if squatting for long time. 4. Difficult to breathe while squatting. 5. In direct pit latrine, irritation due to foul smell, flies etc.
Pregnant	1. Stomach gets pressed hard while crouching down. 2. Cannot use for long time due to pain in nerves, stomach, and uterus. 3. Legs and hands get numb quickly. 4. Leg cramping. 5. Feels something inside the body will come out instead of urine. 6. Footrest is not well levelled so become unbalanced while squatting. 7. Scared to depend on footrest completely because it is quite temporarily constructed with bamboo, wood etc. 8. Legs get swollen after using toilet perhaps due to cold. 9. 9. Difficult to breathe while squatting.
Elderly	1. Danger of falling down into the pit. 2. Pain in knees, back and stomach. 3. Nerves get stretched if use latrine for long time. 4. Legs and hands get numb if squatting for long time. 5. In direct pit latrine foul smell, flies, insects cause irritation. 6. Problem at night problem due to long distance and no light. 7. Footrest is not well levelled so users become unbalanced while squatting. 8. Difficult to lift heavy cement squat hole cover every time. 9. Users feel they will fall on back due to unlevelled footrest. 10. Temporary sidewall is in danger of being blown away by wind.
Normal/Healthy	1. Problem of security due to lack of permanent sidewalls. 2. The space inside the latrine is very small. 3. Footrest is uncomfortable, temporary, and not well levelled. 4. Legs get tired soon. 5. Danger of falling inside the pit. 6. Footrest is not well levelled so danger of slipping and falling on back. 7. In direct pit latrine irritation due to foul smell, flies etc.

5.3 Suggestions from users for improving latrine designs

The main suggestions made by users for making the latrine designs more comfortable and user friendly can be summarized as:

Providing supports

- Supporting chair-like structure having hole in the seat for defecation and a back support;
- Supporting side handles which can help users while squatting down and getting up;
- Back support;
- Western type of commode.

Foot rests

- Distance between two foot rests needs to be closer so that users don't need to spread their legs wide;
- Higher and well levelled foot rest so that users can squat comfortably.

Other

- Permanent type of latrine i.e. water seal, ceramic pan, permanent walls.

The suggestions made by different types of users are presented in the table below:

Table 5: Suggestions made by users for improving the designs of latrines to make them more comfortable to use

Type of users	Suggestions from users
Disabled	1. Supporting chair-like structure with a hole in the centre and a support at the back.
Sick	1. Supporting side handles which can help users while squatting down and getting up; 2. Back support.
Overweight	1. Supporting side handles which can help users while squatting down and getting up; 2. Back support; 3. Higher and well levelled foot rest so that users can squat comfortably; 4. Western type of commode.
Pregnant	1. Distance between two footrests needs to be closer than before so that users don't need to spread their legs wide; 2. Supporting side handles which can help users while squatting down and getting up; 3. Back support; 4. Slightly higher and well levelled footrest so that users can squat comfortably; 5. Western type of commode.
Elderly	1. Supporting side handles like structure, which can help users while squatting down and getting up; 2. Back support; 3. Slightly higher and well levelled footrests; 4. Western type of commode; 5. Permanent type of latrine i.e. water sealed, ceramic pan, permanent walls.
Normal/healthy	1. Permanent type of latrine i.e. water sealed, ceramic pan, permanent walls.

6 SUGGESTED DESIGN MODIFICATIONS

Based on the user's suggestions NEWAH technical team have come up with a number of innovations to the design of latrines to make them more comfortable to use for pregnant women, elderly, overweight, sick and disabled people. Four different design options have been proposed as follows:

1. **A sitting chair** – this is a type of commode, a chair with a hole in the seat, which can be taken in and out of the latrine as and when needed and placed on over the latrine. The chair will have a back support. This option will be useful for users who are uncomfortable in a squatting position for any period of time and people who can not stand up.

Sitting chair type latrine made by a villager in Baglung



2. **A sitting stool** – this is similar to the sitting chair but its height is low, approximately 8 inches. Low supporting arms are provided for support while sitting on it. There is a hole at the center for defecation. This option is low cost and portable. People who are used to defecating in the squatting position but have difficulty supporting the weight of their bodies and people who cannot stand may use this option.

3. **Side handles** – these are made of either of wood or GI pipe and will be attached to the slab and allow users to balance, lower and lift themselves more easily when squatting. Pregnant woman and other people who need support while squatting down and standing up may choose this option.
4. **Front handle** - this is a bar (wooden or GI pipe) positioned in front of the pan and can be held by the user to balance, lower and lift oneself more easily when squatting. Pregnant woman and other people who need support while squatting down and standing up may choose this option.

Some respondents reported that the size and location of footrests need to be adjusted. All the projects visited in the study were implemented in the early and mid 1990's. Since then NEWAH has changed the design of the footrests to address these type of complaints.

Drawings of each option are attached at Annex D. In the table below the estimated costs of the propped design options are presented.

Table 6: Estimated cost of design options

Option No.	Design	Estimated Cost NRs
1	Sitting chair (wooden)	500
2	Sitting stool (wooden)	300
3	Side Handles (wooden or metal)	580
4	Front Handle (wooden or metal)	340

All the design options proposed are relatively inexpensive and can be made from locally available materials by local people.

7 BROADENING NEWAH'S UNDERSTANDING OF DISABILITY

When the scope of this study widened from women-friendly latrines to also include disability the focus was initially on improving disabled people's **access** to sanitation services. Discussions between NEWAH and Handicap International have led to a realization that when dealing with issues of disability, physical access to facilities is just a small, albeit important, part of a far wider issue. Disability should be viewed in terms of **inclusion** and opportunities should be created for disabled members of a community to be involved in and benefit from all parts of a project, from project design and implementation to improved service provision to operation and management. Much in the same way as NEWAH has developed a Gender and Poverty approach over a number of years, the issue of disability must be systematically introduced to all levels of the organization. Staff's understanding of disability issues needs to be developed before appropriate strategies and approaches are devised.

8 RECOMMENDATIONS

Based on the study findings the following recommendations are proposed:

1. This report be shared with other NEWAH regional offices and with other agencies working in the sector;
2. NEWAH Western Regional Office pilot the design options proposed in this report in a few projects in 2004/05 and evaluate the pilots;
3. A workshop be held after piloting the design options to share the study and pilot findings throughout the sector;

4. NEWAH hold a workshop with Handicap International to design a strategy for introducing and integrating disability issues throughout NEWAH.

9 CONCLUSIONS

Latrine designs are often made by male engineers who do not have to use the latrines. The designs are drawn up in offices far away from communities without any consultation with the broad range of end users and therefore designers are not aware of the difficulties faced by certain categories of users. The study has shown that most of the physically challenged people interviewed have some sort of problem in using NEWAH's existing latrine model. The result is that they face discomfort when defecating in the latrine and at certain times revert to open defecation where they can sit in a more comfortable position. Just as one rotten apple can spoil the rest similarly open defecation by a single person can destroy a healthy environment. Thus in order to achieve total sanitation in a community it is vital that everyone in a community has access to a latrine that they are **comfortable using**. Merely access to a latrine is not sufficient. Pregnant women and old people who do not use the latrines due to discomfort and revert to open defecation often have to walk to an isolated place along slippery paths to defecate in unhygienic areas. This puts these people who are already vulnerable due to their physical condition at a greater risk of falling over, being attacked by animals or people or catching an infection in an unhealthy open defecation area.

Based on respondent's suggestions NEWAH has designed 4 low-cost design options that will be piloted in the coming year and evaluated. The study has increased NEWAH's awareness of disability issues and the challenge now facing the organisation is how to introduce and integrate disability issues into all working practices.

Annex A Questionnaire Used in the Study

Personal details

Name

Sex

Address

Age

Information on physical status of respondent

Normal/healthy

Fat

Sick

Pregnant

Old

Q. 1 What problems do you have in using the latrine?

Q. 2 How would you like to modify the latrine design to make it more comfortable?

Annex B Communities visited during the research

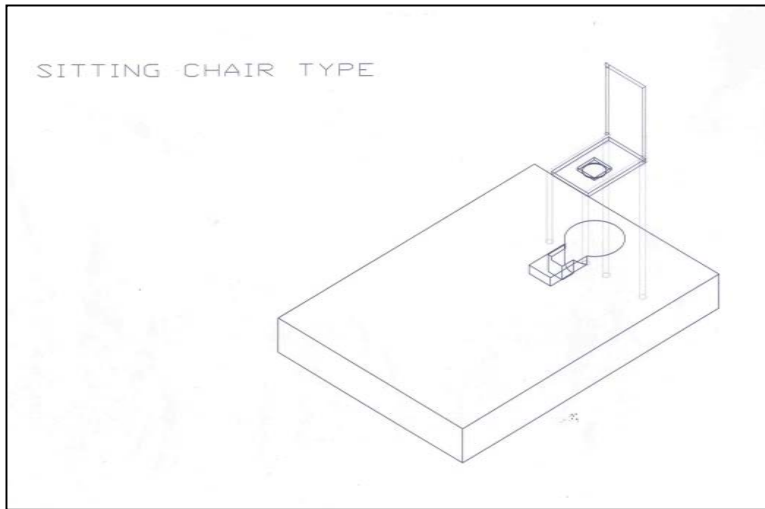
S.N.	Project Name	District	Project start date	Project end date
2	Mallaj	Parbat	1997	1998
12	Benigaun	Gorkha	1997	1998
1	Phadkedhunga	Parbat	1996	1997
10	Bangrebesi	Lamjung	1996	1997
7	Pallotari	Lamjung	1995	1996
8	Tabai	Lamjung	1995	1996
9	Simpani	Lamjung	1995	1996
6	RisingRani pikhari	Tanahun	1994	1995
3	Bhulbhule	Lamjung	1993	1994
4	Thakle	Lamjung	1993	1994
5	Khahare	Lamjung	1993	1994
11	Tarapu	Lamjung	1993	1994
13	Arjnchaupari	Syangja	1993	1994
14	Lamagaun	Lamjung	1992	1993
15	Gankhu	Gorkha	1991	1992

Annex C Research Team

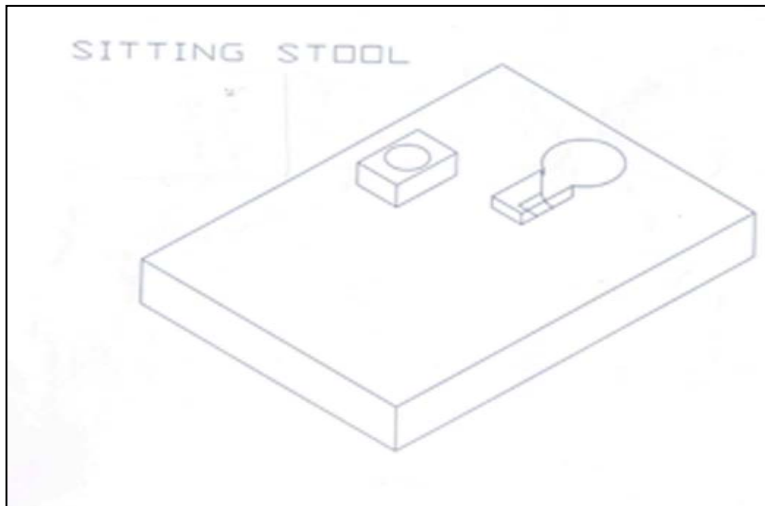
Name	Job Title	Responsibility
Manoj Rayamajhi	Regional Coordinator	Coordination, report write up
Radha Thakuri	Enumerator	Data Collection
Sawali Rai	Trainee engineer	Write up, analysis, drawings
James Wicken	Consultant	Design, report write up

Annex D Drawings of Design Options

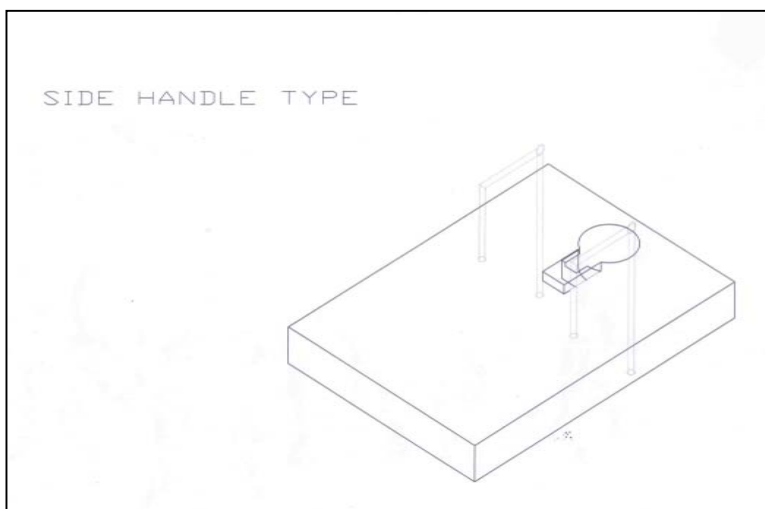
Option 1



Option 2



Option 3



Option 4

