ORIGINAL ARTICLE

SPHERE BASED ASSESSMENT OF WATER ACCESS, QUANTITY, PERCEIVED QUALITY AND SANITATION IN INTERNALLY DISPLACED PEOPLE OF PAKISTAN

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ABSTRACT

Background: SPHERE standards and indicators are used worldwide to determine the quality of support services for displaced persons. This study was undertaken to assess relevant relief efforts on global standards regarding internally displaced person's access to water.

Methodology: This descriptive cross-sectional study with systematic random sampling of 123 sample size was done from January to May 2010 at Jalozai camp, Nowshera, Pakistan. A structured questionnaire was designed based on the SPHERE handbook. The detailed interviews with household and field observations were done.

Results: The water supply was regular to 110(94%) and within acceptable distance. Twenty-four (21%) households had sufficient quantity of water while 106(90%) lacked water storage facilities. Majority of internally displaced persons perceived the available water as drinkable 99(85%), yet erosion and/or standing water in the shelter area and community water sources 13(29%) was compromising physical access to water and also posed a potential threat of contamination.

Conclusion: While water availability, its quantity and distance from the household are crucial in determining access to water, the secondary determinant factors like lack of water storage facilities at household level is also important. Therefore access should take into account both the primary and secondary determinants.

KEY WORDS: Water, Sanitation, Displaced persons.

INTRODUCTION

Provision of water is a basic necessity and essential human right for health, dignity, well being and survival.[1] In displaced populations due to their extreme vulnerability and reliance on external help, provision of drinking water is of particular significance.[1]

In catastrophic situations humanitarian assistance agencies have defined minimum standards for water and sanitation.[3] General comment 15 on the right to water, adopted in November 2002 by the Committee on Economic, Social and Cultural Rights, identifies that if source of water is at a distance of 1 kilometer 20 liters per person per day be collected. At this basic level along good hygiene and water treatment at home will reduce the likelihood of disease.[2] Community must be made aware to cover water containers properly otherwise risky storage may lead to health problems including outbreak of water borne diseases. Role of hygiene promoters in this respect cannot be ignored.[4]

The SPHERE standards designed for use in disaster response were launched by a group of humanitarian NGOs and the Red Cross and Red Crescent movement in 1997 in the form of SPHERE hand book. They defined minimum levels of standards which are qualitative in nature while the indicators may be qualitative or quantitative and provide a way of measuring the impact of a programme.[5]

This study aimed to assess water access, quantity and perceived drinkability and sanitation in internally displaced persons camp, based on SPHERE standards.

MATERIAL AND METHODS

This descriptive cross-sectional study was conducted from January to May 2010 at Jalozai camp Nowshera District, Pakistan. The camp area was distributed in 17 phases. Each phase was further subdivided into 8-12 sectors which were further categorized into 4-13 blocks. At the time of survey the population of Jalozai was 108,000 displaced persons. Eleven percent of phase 1

population was sampled (1118 families) on the basis of systematic random sampling (sample size 123).

The operational definitions were same as in SPHERE standards and indicators handbook. A structured questionnaire was designed based on SPHERE handbook and translated version was administered to the heads of the families. Observations were made of the community water sources and toilet facilities at 45 different points. The questionnaire was pilot tested and refined.

The camp administration was briefed about the study and authorization was acquired. Informed consent was requested from respondents, after explaining the purpose of the study and the confidentiality of the interviewees was maintained. The cultural norms and traditions were kept in consideration during interview.

Out of 123 families surveyed, 6 did not have the head of the family available, yielding a final sample size of 117 (Response Rate= 95.12%).

Descriptive statistics were calculated for data collected regarding various variables of the study using SPSS version 17.0.

RESULTS

The families surveyed, had arrived on average 15 months ago (median 16) in Jalozai camp, with the earliest arriving 24 months and latest arriving 2 months ago. The average household size was 6.3 persons per family (minimum 2 and maximum 13). The average household had 1 male, 1.2 female and 4.2 children according to our survey.

Among the families we surveyed only 24 (21%) households had sufficient quantity of water available (15 liters per person per day) and 11 (10%) households had adequate water storage facilities.

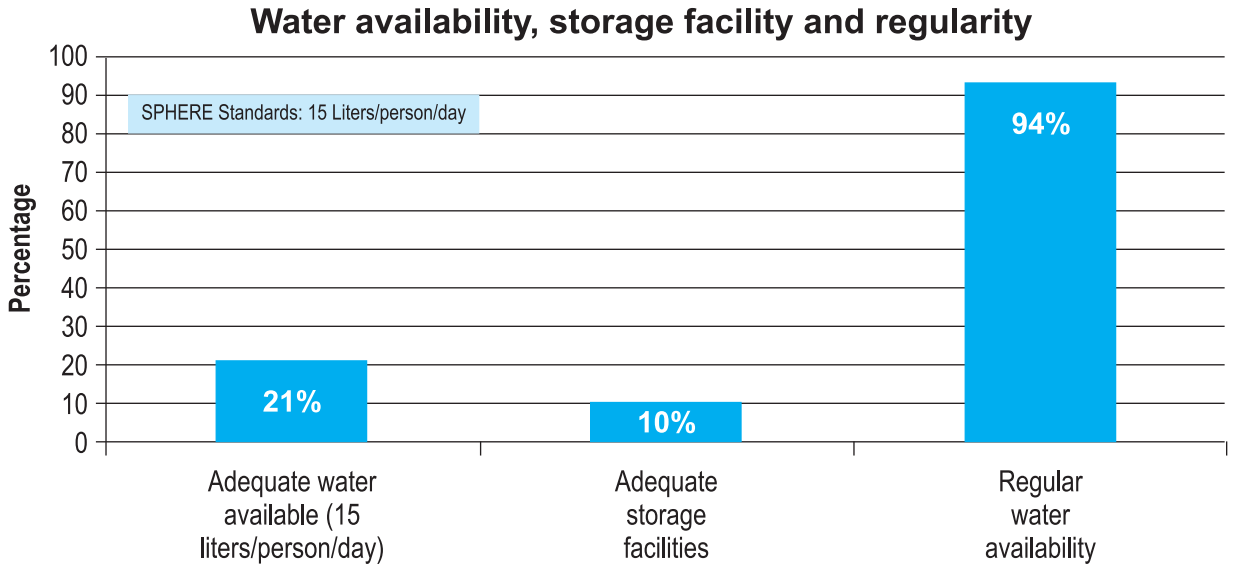

Fig. 1

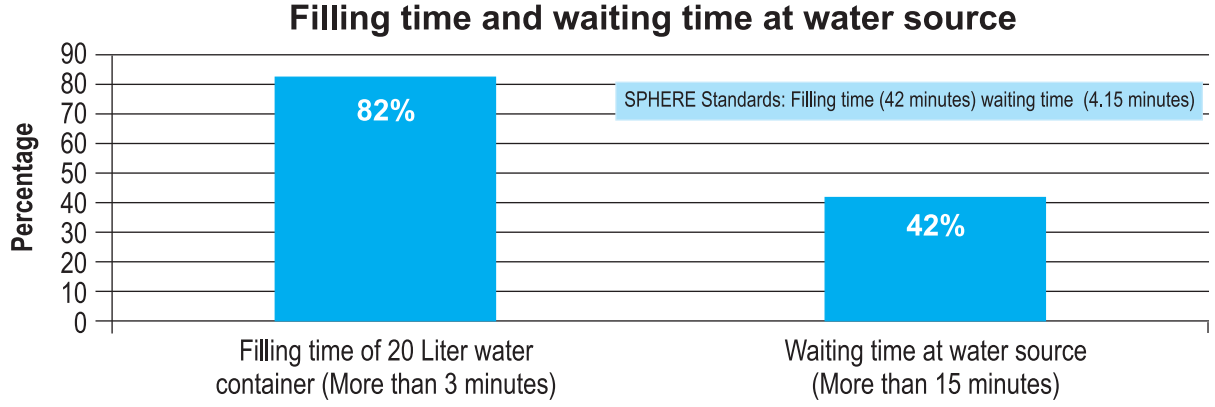

Fig. 2

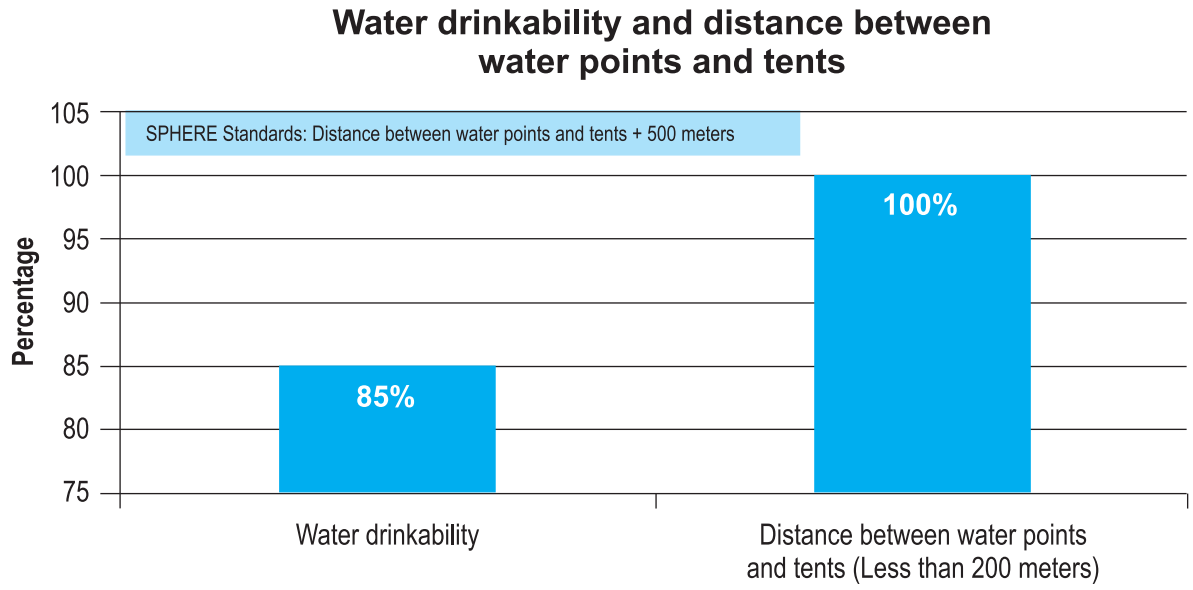

Fig. 3

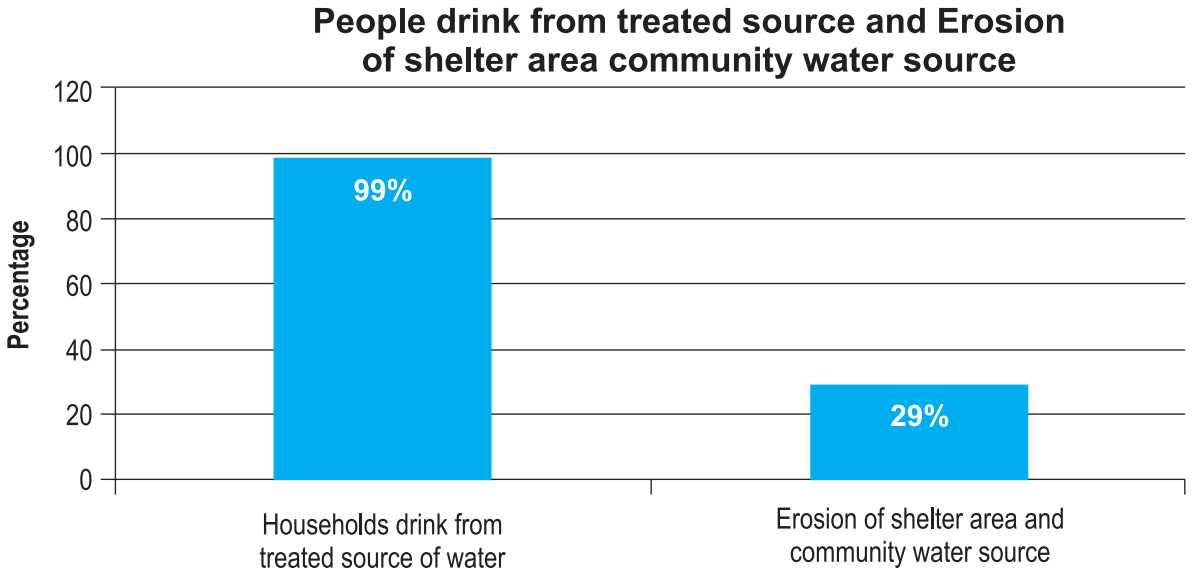

Fig. 4

SPHERE standard requires 20 liter container to fill in 3 minutes. We discovered in our survey that 96 (82%) families had to wait more than 3 minutes for a 20 liter container to fill. Forty-nine (42%) respondents had to wait more than 15 minutes in line at water points.

The distance between water point and tent area was less than 200 meters in 117 (100%) households. Water supply was found to be regular 117 (100%). Our survey shows that 110 (94%) families admitted that water is available regularly.

It was observed that 13 (29%) water points were found eroding shelter area and community water source compromising physical access to water. Ninety-nine (85%) families perceived the available water as drinkable.

DISCUSSION

Average water used for drinking cooking and personal hygiene in household: In the context of humanitarian disaster, to reduce the risk of epidemics and maintain health, affected population must have immediate access to water. Water quantity required for domestic, hygiene and drinking may vary according to needs, sanitation facilities, climate, norms, culture, religious practices and food they eat.[5] In our survey 24 (21%) household were having adequate water according to SPHERE

standards. 10 (11%) household reported to have sufficient water storage facilities. Literature review shows that sufficient quantity of water of low quality is better than very little water of high quality [6]. Once a satisfactory supply has been established, reserve and storage facility of at least one day requirement should be provided.[6] We conclude based on our survey that the low access to water in this survey can be attributed to lacking proper storage facilities in most households.

Compared to the SPHERE standard of 1640.41 feet (500 meter),[5] all the households in our survey were at a distance of less than 200 feet (60.96 m) from water points. Therefore, this parameter was found within SPHERE Standards.

Excessive queuing are indicators of insufficient water availability.[5] Literature shows that if waiting time at water source is increased, then people will return to their old contaminated quicker sources.[6] In our study, 49 (42%) families reported the waiting time to be greater than 15 minutes, which is the maximum acceptable queuing time based on SPHERE standards.[5]

Based on SPHERE standard of a maximum acceptable filling time of 3 minutes for a 20 liter container, we found very few households within this limit (18%, n=21).

Sufficient amount of water should be available to clean water and food containers regularly. 110 (94%) families reported that water is available regularly.

In the context of natural disaster, water borne and communicable disease can become a menace to health. Disaster affected population will only recognize the contamination of water when its taste or clarity is affected and in many cases they will take the chance and drink it anyway. The zones within the refugee camp with inadequate water showed higher number of cholera cases.[7] We found in our survey that water drinkability was good however; nearby environmental sanitation and relevant facilities were not on required standards. Therefore there is an ample chance that water quality may not be sustained and risk of water borne and communicable diseases is likely.

CONCLUSION

While water availability, its quantity and distance from the household are crucial in determining access to water, the secondary determinant factors like lack of water storage facilities at household level is also important. Therefore access should take into account both the primary and secondary determinants. Lack of capacity to utilize the available water may make the apparent access meaningless.

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