Sanitation-Related Quality of Life Establishes Substantial Benefits of Sanitation Beyond Traditional Health Focus

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Abstract

Many programs only evaluate the benefits of water, sanitation, and hygiene (WASH) across indicators like reductions in diarrhea, stunting, and wasting. However, extensive literature shows there are broad benefits of WASH including time and cost savings, impacts on livelihoods, and privacy, safety, and dignity. However, tools for capturing these benefits in a rigorous, quantitative, easy-to-deploy-in-programming manner are lacking.

To adapt the Sanitation-Related Quality of Life (SanQoL) measure, originally developed for urban areas, to several rural settings in Zambia, we conducted a series of qualitative interviews to understand the unique challenges of sanitation in rural settings with special attention to gender, physical disability, and vulnerability in general. We also deployed a quantitative survey across 25 villages in five districts (n=365).

Open defecation (OD) was rare even in relatively poor, rural areas in Zambia (7%), and most sanitation was unimproved (87%). Despite some studies suggesting that some people prefer OD, there were few practicing OD who reported high SanQoL scores, with a mean score (on a scale from 0 to 1) of 0.57 for OD versus 0.75 for having any kind of toilet (even unimproved) (p=.037). Avoiding disgust and having privacy were ranked as the two most important out of six attributes, and health was ranked last. Improved sanitation did not seem to increase SanQoL, though scores were higher for private household (0.68) versus shared latrines (0.77).

We identified significant differences between drivers of SanQoL and standard monitoring indicators in the sector, implying that it is crucial to understand people's preferences to better promote and measure the impact of sanitation.

Background

WASH services are essential for child well-being, but WASH is frequently de-prioritized, and choices between programmatic approaches are difficult due to challenges in measuring its impact. Recent trials have called into question the direct child health benefits of 'basic' (Millennium Development Goals-level) WASH. However, World Vision and many others in the sector currently only assess the benefits of WASH across three indicators: reductions in diarrhea, stunting, and wasting.

Sanitation-Related Quality of Life (SanQoL) was developed in urban Maputo, Mozambique where it was identified that the broader benefits of an urban sanitation intervention can be quantitatively measured and valued.[i] Grounded in qualitative research using Sen's (1980) capability approach, [ii] and refined using psychometric analytic methods, a five-item measure of SanQoL was developed and validated. The measure captures the degree of achievement of five sanitation-related capabilities: privacy, safety, health risk, shame, and disgust. Rescaling responses with user-

derived weights results in SanQoL index values ranging from zero to one. These index values can be used to weight quality-adjusted service years (QASY), a novel outcome measure for comparing sanitation programmes in economic evaluations. The properties of the QASY have been demonstrated in an exploratory cost-effectiveness analysis of an urban sanitation intervention. Policymakers may be willing to invest in users' quality of life once it is measured and valued in this way, despite uncertainty about infectious disease-related health impacts.

It is possible that the most important attributes of SanQoL could vary by setting and culture for several reasons. First, the Maputo setting included various levels of shared toilet quality, but the kinds of toilets available and other factors like the presence of water might differ in a rural context. Second, the Maputo setting did not include OD, which is much more common in rural areas.[iii] It may also be easier to find a location for OD in rural areas, and OD has been preferred to toilet use in some settings,[iv] So, in rural areas there may be variation in the relative importance of SanQoL attributes and even the need to include additional attributes such as convenience that are less relevant in an urban setting.

Methodology

World Vision partnered with the Center for Infectious Disease Research in Zambia (CIDRZ) and the London School of Hygiene and Tropical Medicine (LSHTM) to conduct a mixed-methods study to adapt and validate the SanQoL measure in a rural setting and to use it to better understand household preferences for sanitation and test its utility as an outcome measure for sanitation programs. We began with semi-structured qualitative interviews, including cognitive interviews to validate the measure's constructs (n=30 interviews). Then we conducted about 15 household surveys in each of 25 villages in five districts of Eastern province. Preference rankings of the six SanQoL categories were used to assign weights to each category so that the overall measure was normalized to range between zero to one.

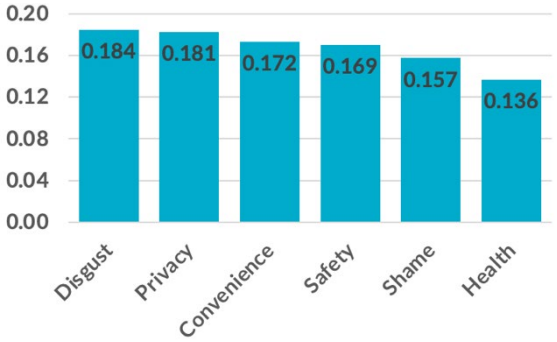

Figure 1: Results of ranking attributes of sanitation by contribution to SanQoL

Key Findings

Ranking Aspects of Sanitation

Most toilets were private household toilets (60%), while 24% were shared by more than one household, and 16% were public toilets accessible to anyone. Most respondents had an unimproved toilet (87%), meaning that there was not a slab that effectively separated human excreta from human contact. Only 9% had an improved toilet that had such a slab, and only 5% reported practicing OD the last time they defecated. Private household toilets were slightly more likely to be improved (11%) than shared (8%) or public (5%) toilets.

Respondents ranked (avoiding) disgust and having privacy as the two most important aspects of sanitation, followed by convenience and safety. Health was rated as the least important attribute among the six (Figure 1). Respondents assessed their own sanitation experiences based on whether they were always, sometimes, rarely, or never able to experience the desired attribute, such as "always being able to avoid disgust" or "sometimes being able to have privacy." Privacy (65%) and (avoiding) disgust (55%) were most likely to be lacking, while worrying about health was least likely to be experienced (32%).

SanQoL Scores by Sanitation Level

The average SanQoL score for unimproved sanitation (0.75) was significantly higher than for OD (0.57). However, there was no difference between unimproved and improved sanitation. Health and avoiding disgust showed the largest differences between OD and unimproved/improved sanitation.

Private household sanitation also had a higher score (0.77) than public sanitation (0.73) and shared household sanitation (0.68). The largest difference between public and private household sanitation was convenience, while the largest difference between shared and private household sanitation were health, avoiding disgust, and privacy.

Gendered Aspects of Sanitation Preferences

Higher levels of sanitation service were shown to substantially benefit women. First, women's reported satisfaction with their ability to practice menstrual hygiene management was much higher for an improved toilet (52%) than an unimproved one (35%), and both were drastically higher than for OD (12%). Second, though men and women had similar SanQoL scores for unimproved sanitation, women had higher scores than men for improved sanitation (0.80 vs 0.72).

Recommendations

Promoting improved sanitation should target avoiding disgust and having privacy, and should focus on much more than just improved slabs

There is consistent misalignment between what aspects of better sanitation are desired by users versus those assessed by global monitoring standards. While this does not discount the relevance of such monitoring, sanitation promotion efforts should think about the products to be promoted in a drastically different way. When moving above eliminating OD, product development and promotion should focus on reducing smell, ensuring privacy through the quality of the superstructure, and even the location of the toilet itself.

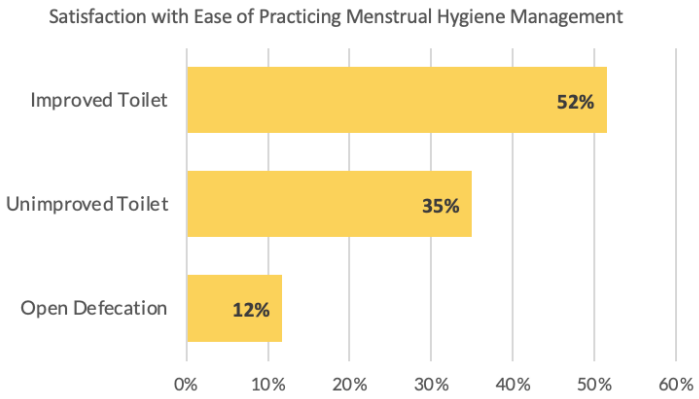

Figure 2: Respondents reporting being satisfied with the ease of practicing menstrual hygiene management by toilet type

Ending open defecation, even if just through unimproved sanitation, is a worthwhile goal

The increase in SanQoL associated with unimproved sanitation over OD is substantial. Given that the marginal cost of moving up to improved sanitation is often much more than moving from OD to unimproved sanitation, ending OD should be prioritized from a quality-of-life perspective even if the benefits for reducing infectious disease transmission are unclear.

Conclusion

Sanitation-Related Quality of Life has been demonstrated to be a good measure to assess user preferences for different levels of sanitation. It should be used to inform sanitation promotion approaches for both unimproved and improved sanitation, to measure the benefits of programs, and ultimately to decide how to maximize impact when selecting between multiple programmatic approaches.

References

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