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Perspective Article

Water Supply And Handling Technology

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INTRODUCTION

The Sustainable Development Goal (SDG) 6 of the United Nations (UN), which was adopted in 2015, declares that "equitable access to clean and affordable drinking water for everyone" is critical (UN, 2016). The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) declared in 2012 that the world has achieved Millennium Development Goal (MDG) 7C, which intended to reduce the number of people without access to safe drinking water by half. This assertion, however, obscures enormous regional inequalities in water access: First, the majority of progress toward better water access has happened in Asia, where access to improved water sources rose from around 70% in 2000 to 90% in 2015. Sub-Saharan Africa is still a long way from reaching equal access, with over half of the rural population lacking access to clean drinking water. Second, having access to an improved or well-managed water source does not guarantee that the population consumes safe drinking water. The water source may be unsafe; people may prefer unimproved, low-cost water sources; or the water may be re-contaminated between the source and the point of use (POU) in the home. Aid aimed towards the water sector aims to enhance water quality and public health, with a particular focus on lowering diarrhoea rates (Hutton et al., 2006). Most water supply initiatives in rural regions focus on public water infrastructure, such as water pumps and standpipes, to give people with affordable access to better drinking water sources. However, the research has questioned the usefulness of public water infrastructure in increasing drinking water quality and reducing diarrhoea incidence. Public taps and pumps significantly minimise water contamination with Escherichia (E.) coli bacteria at the source, according to studies based on microbiological evidence, although re-infection during transit and/or storage is common. Interventions in water management, such as I water treatment (such as filtration and chlorine treatment). This paper contributes to the literature on the effectiveness of water supply programmes by examining the impact of both public water supply and water handling containers based on the following related outcomes: objective and subjective water quality at the source and POU, POU water treatment, water transport and storage behaviour, and uptake of new, improved water points. We contribute to the research by assessing objective and subjective water quality metrics of improved water sources, both at the source and at the home level, as well as including **a behavioural dimension** that helps explain POU water contamination despite improvements in source water quality.

POINT WATER USE

Improved public water supply encourages people to use better water sources and improves water quality, as seen by a reduction in *E. coli* contamination at the source. However, it has no effect on the quality of POU water. Second, we discover that installing a better water point has a negative impact on hygienic water handling, since families reduce or discontinue water treatment measures before to consumption. We interpret this finding as a behavioural shift resulting from the objective and subjective improvement in water quality at the source, as well as the time, attention, and financial expenses of hygienic water management at the POU. Using both quasi-experimental and experimental household-level panel data, researchers investigated the influence of public water infrastructure and water handling technology on the water quality and water handling behaviour of families in rural Benin. We discovered that the installation of better village-level water sources causes families to lower their home water disinfection efforts, implying that enhanced public water infrastructure is seen as a substitute for improved water handling in order to receive safe drinking water. As a result, the quality of drinking water at the time of usage remains unchanged. Only by combining interventions that provide drinking water technology at the water source with household-level interventions and efforts to teach families how to maintain acceptable water quality can E. coli contamination at points of use be reduced.

Installing more water points alone may not result in the behavioural adjustments required to enhance the quality

of drinking water in households. Ahuja discusses the data from randomised assessments that supports this finding, as well as the problems of changing demand and behaviour in order to achieve excellent water quality. One such difficulty is that if chlorine products are not subsidised, households may be unable or unwilling to pay for convenient access to better water sources.

The behavioural element of water and sanitation project effectiveness. If households believe that clean water and sanitation are interchangeable, household-level initiatives may have unexpected consequences for the target population's hygiene behaviour. Although a causal association between behavioural risk compensation and water and sanitation may appear improbable, we show that compensation does occur during the water fetching process. Effectiveness of water supply programmes by examining the impact of both public water supply and water handling containers based on the following related outcomes: objective and subjective water quality at the source and POU, POU water treatment, water transport and storage behaviour, and uptake of new, improved water points. We contribute to the research by assessing objective and subjective water quality metrics of improved water sources, both at the source and at the home level, as well as including a behavioural dimension that helps explain POU water contamination despite improvements in source water quality. We employ a household-level panel data collection that includes E. coli testing at the home and water source levels.