

BEYOND RAISING AWARENESS: PROMOTING HANDWASHING IN NEPAL AMID COVID 19 CRISIS*

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This report proposes a simple framework for policy actions to effectively promote handwashing in Nepal amid the COVID 19 pandemic. Raising awareness about proper handwashing is the cheapest, easiest and most important way to prevent the spread of the coronavirus, but it is far from sufficient in Nepal. Nepali population can be categorized into three groups based on handwashing practices. Close to half of the population in Nepal already have a fixed location for handwashing as well as soap and water. Raising awareness through media outlets will be most effective for this group. More than 30 percent have a handwashing location but without soap or water. SMS alerts coupled with media campaigns may be necessary as 20 percent of this group do not use radio, TV, newspaper or Internet but more than 95 percent of them own a mobile phone. Providing or subsidizing soaps may also be necessary. The remaining 20 percent do not have a dedicated place for handwashing, water, or soap. This group, who tend to be poorer and harder to reach by media outlets, needs the greatest policy intervention as they face more difficulties to practice handwashing but can still become the nexus of the viral infection as half of them live in urban areas. Besides the immediate benefits of preventing coronavirus infections, promoting regular handwashing can have many benefits including reduction in acute respiratory infections, diarrhea, substantial reduction in neonatal infections, and overall improved socio-economic outcomes in the long run. Policy interventions should consider these benefits of improving handwashing practices in this disadvantaged group.^{1,2}

Handwashing is the cheapest, easiest and most important way to prevent the spread of the COVID 19 (UNICEF, 2020; UNICEF and WHO, 2019). The World Health Organization (WHO) recommends cleaning hands regularly with an alcohol-based rub or washing hands with soap and water as these kill viruses that may be in our hands (World Health Organization, 2020). Proper handwashing also has significant positive externality in that it can prevent the spread of coronavirus to others and save many from the infection. Thus, raising awareness about proper and regular handwashing is one

of the most important measures to slow down the spread of the coronavirus.

But billions of people across the world face challenges when it comes to practicing handwashing properly and regularly as suggested by the health experts (The Economist, 2020). First, a large share of the population, especially in the developing countries still lack access to a proper handwashing facility. A cross country comparison of economic development and handwashing practices shows a positive correlation; countries with lower Gross National Income (GNI) per capita are likely to have a lower

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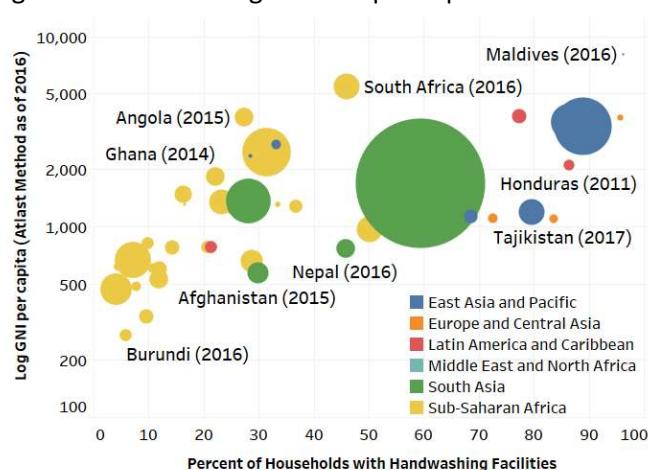
¹ We rely primarily on the 2016 Nepal Demographic Health Survey (NDHS) data as this is the latest data publicly available. Updates should be made once the data from the 2019 Multiple Indicators Cluster Survey becomes available.

² All figures are available for download at https://bit.ly/covid19JIT_beyondraisingawareness.

share of the population with proper handwashing facilities. As in many other developing countries, more

Second, people must be made aware not only when to wash hands but also how to do it properly. For example, UNICEF recommends a 5-step handwashing for 20 to 30 seconds with soap and water and a clean cloth or disposable towels to dry hands on 11 different settings such as after sneezing, coughing and before and after eating (UNICEF, 2020). This can easily mean handwashing more than 10 times a day per person and requires significant amount of water (Bhowmick, 2020). Educating the general public about proper handwashing is critical.

Figure 1: Handwashing and GNI per capita³



Size of the bubbles represents population.

Source: Demographic Health Surveys from 49 countries (various years), downloaded from Stats Compiler: <https://www.statcompiler.com/en/> and World Development Indicators. Population and GNI per capita as of 2016.

Nepali population can be classified into three categories of handwashing practices (Figure 2) using data from the 2016 NDHS. First, 47 percent of households in Nepal have a fixed location for handwashing with soap and water available (**Group 1**). Second, another 35 percent have a handwashing location but without soap or water (**Group 2**) and finally, 19 percent have neither of them (**Group 3**).⁴

³ Results from 49 countries and more than 200 surveys are summarized in the dashboard. See footnote 1.

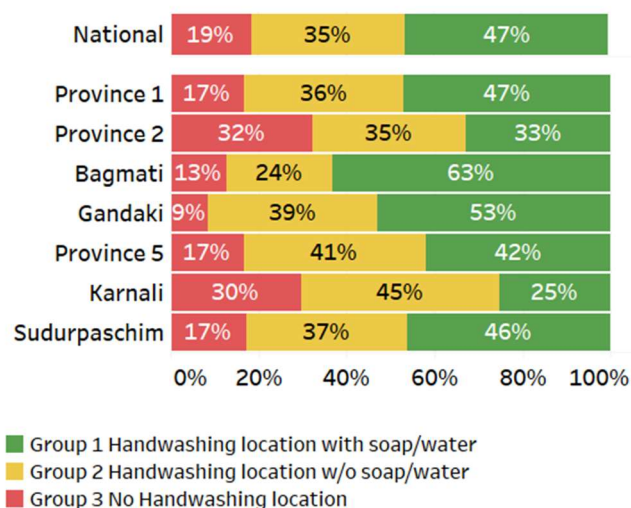
⁴ Less than 1 percent of the households have water and soap available but without a fixed handwashing location. For brevity, these households are excluded from this analysis.

⁵ According to the 2011 Population and Housing Census, population of province 2 is only marginally smaller than

than half of the Nepali population does not have handwashing facilities (Figure 1).

Province 2 and Karnali province stand out as they have the lowest shares of Group 1 and the highest shares of Group 3 households. In particular, Province 2 should be given higher priority as it has the highest population density in Nepal⁵ as well as the largest number of Group 3 households (Figure 5). Each group has diverse needs and characteristics and require different measures to promote handwashing.

Figure 2: Handwashing Practices in Nepal



Source: Nepal Demographic and Health Survey 2016

Group 1 will benefit the most from media campaigns to encourage regular and proper handwashing. Households in this group not only already have access to handwashing facilities, they also are connected to major media outlets. According to the 2016 NDHS (Figure 3),⁶ 93 percent of women in this group access at least one of the four major media outlets — newspaper/magazine, TV, radio or the Internet, compared to 78 percent and 75 percent for Groups 2 and 3 respectively. As such, media campaigns to

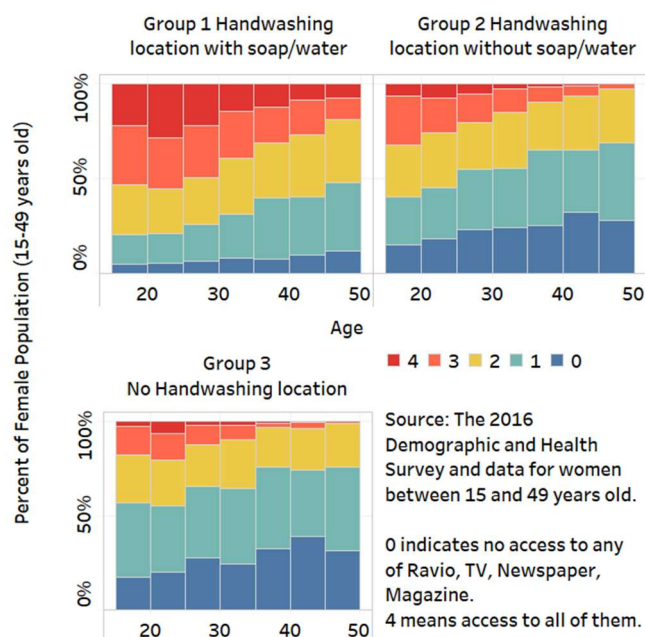
Bagmati but its total area is by far the smallest, less than half of the second smallest province: Sudurpaschim. See (Government of Nepal, 2019).

⁶ The 2016 NDHS collects data on media access for women and men between 15 and 49 years old, with larger sample sizes allocated for women. We focus on statistics for women as those for men exhibit similar trends.

encourage regular and proper handwashing should be a priority for Group 1 as they already have what is needed to practice handwashing in their residences.

Group 2 will likely require additional measures to promote handwashing. In addition to lacking soap or water, this group also has poorer access to the media.

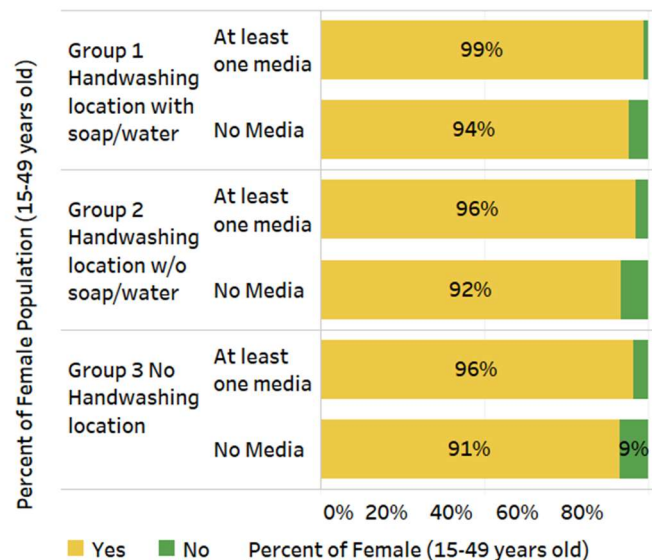
Figure 3: Access to media by Nepali women (Radio, TV, Newspaper/Magazine and Internet)



More than 22 percent of women in this group do not use any of the four major outlets (TV, radio, newspaper/magazine and Internet) at least once a week and another 31 percent access only one. Therefore, media awareness campaigns through traditional platforms wouldn't suffice. As more than 95 percent of women in Group 2 own a mobile phone (*Figure 4*), these awareness campaigns can be coupled with additional measures, for instance, SMS alerts and voice messages on the importance of handwashing and to direct them to a more comprehensive information source. It is also important to ensure these households have access to water and soap in the handwashing locations. Our

analysis shows that lack of soap might be a more pertinent issue in this group as 81 percent of the households have water in the handwashing location. Since soaps are relatively affordable, somewhere between 20 to 30 Nepali Rupees per piece in urban markets (WFP and GoN, 2020), providing or subsidizing soaps may be a feasible policy option that can be scaled.

Figure 4: Mobile phone ownership by Nepali women



Source: The 2016 Demographic and Health Survey and data collected on access to information for women between 15 and 49 years old.

Group 3 is where the greatest challenges lie and needs creative instruments. There is no short-term solution that can significantly improve handwashing practices in this group. Since they neither have a dedicated location for hand washing, nor water and soap, media campaigns or subsidies on soaps will have limited impacts. Furthermore, people in this group tend to be poorer than those in the other groups⁷ and awareness raising to call for behavioral changes by itself is likely ineffective. Yet they can still become the nexus of the viral infection as half of them live in urban areas. Although few options exist in the short run, it must start by directly providing basic facilities and securing water supply to enable handwashing,⁸

⁷ As measured by the wealth index in the NDHS 2016. Cross tabulation of handwashing groups and the wealth index is available in the dashboard. See footnote 1.

⁸ Providing or subsidizing hand sanitizers to clean hands could be a plausible alternative to handwashing in places without water or soap but doing this at scale is difficult. The supply of

Lack of short-term solutions should not deter policy actions for Group 3 because long-term benefits in promoting proper hand washing in this group could go far beyond the immediate response to contain the COVID-19 outbreak. Handwashing with soap prevents diarrhea and other intestinal infections that cause micronutrient deficiency, stunting, wasting, and premature death (The Global Handwashing Partnership, n.d.). Handwashing helps improve longevity and quality of life, ultimately contributing to many of the Sustainable Development Goals (UN-Water, n.d.). Failing to ensure proper handwashing in Group 3 means that people in this group, who are already disadvantaged in many ways, will be further left behind in terms of the preparedness for the ongoing COVID 19 pandemic as well as long-term health benefits and human capital accumulation. It is imperative to increase this group's access to water supply and their awareness about handwashing, both in the short and the long term.

Handwashing without water

There are many attempts to improve hand washing practices in places with no or irregular water supply such as setting up community handwashing stations in public places (Bhowmick, 2020). As most schools, workplaces, markets, transport stations where people gather regularly are likely to already have water supplies and sanitation facilities, public handwashing stations could be set up in these locations. In areas without running water, tippy taps⁹ provide a simple and safe way to make handwashing widely available (Charlton, 2020). While such initiatives may work well in sparsely populated rural villages, they may have an adverse impact in urban settings as they may come in conflict with social distancing orders. To tackle this, it would be helpful to create “social distancing cues” (e.g., a colored rock etched on the ground) just as in supermarkets to nudge people to maintain social distancing. Additionally, during monsoon season, setting

hand sanitizers is limited in general and they are significantly more expensive than soaps. To sustain it for a foreseeable future requires a large logistical operation and budget.

up a simple rainwater harvesting system could be an alternative source of water for handwashing and other purposes. Chlorination of rainwater is recommended to disinfect the water and mitigate water borne diseases.

There are other handwashing alternatives in the market and being developed in the labs. For example, “Super Towels” with antimicrobial treatment that use significantly less water compared to washing with soap (Torondel, Khan, Larsen, & White, 2019) are already out in the markets. Researchers at Harvard University are developing highly versatile antimicrobial platform using Engineered Water Nanostructures (EWNS) that provides water free ways to clean hands (Harvard School of Public Health, 2019). While these solutions have the potential to improve hand hygiene, handwashing still remains the most preferred method to tackle the spread of COVID-19.

While increasing access to a handwashing facility and increasing awareness of the importance of handwashing are essential, they do not naturally lead to the practice of handwashing. As thorough hand washing is still not a regular practice in many societies — both rich and poor — it is therefore important to create an enabling environment to change behavior and create a positive social norm to make handwashing a desirable thing to do (Gharib, 2020). Placing informational posters, brochures, flex banners and other behavioral cues for hand washing at strategic locations and near public handwashing stations would help to raise awareness and reinforce handwashing behaviors.

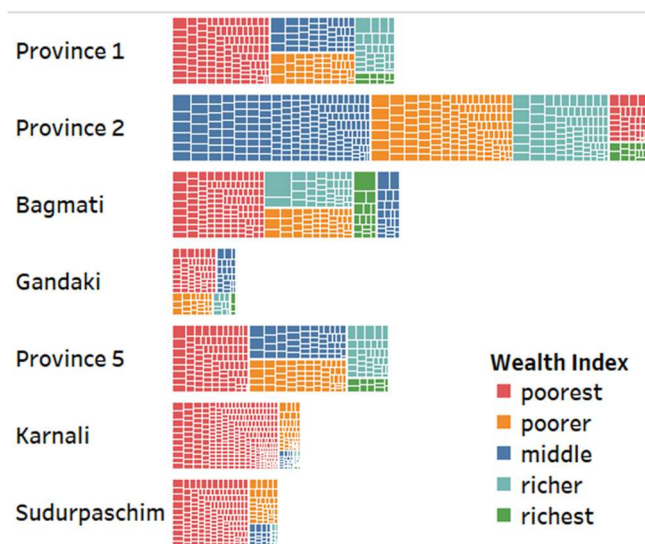
Locally disaggregated data

COVID-19 crisis highlights the importance of better data for designing evidence-based policies as well as responding effectively during times of emergencies. In Nepal, this highlights the need for recent data that are locally disaggregated to pin down what actions are needed where. For illustration, *Figure 5* shows

⁹ Tippy tap is a low-cost handwashing device built using a plastic container, ropes, and sticks, tipped using a foot lever.

distribution of Group 3 households across provinces and the wealth quintiles.

Figure 5: Households without Handwashing Location by Provinces and Wealth Quintiles



Source: Nepal Demographic and Health Survey 2016
Each tile represents a household in Group 3 and the size of the tile represents sampling weight.

In Karnali and Sudurpaschim, the wealth index can be a good proxy to target such households as more than 90 percent of Group 3 households are in the two bottom quintiles. This is not the case in Province 2 where top three quintiles explains 65 percent of Group 3 households. Other variables such as types of toilet facility, literacy and educational attainment are highly correlated with handwashing practices in Province 2. While the NDHS data allows us to understand the state of handwashing only at the province level, it is plausible that there are significant variations across local governments within provinces. This underscores the importance of locally disaggregated data to identify the target population for promoting proper handwashing. The upcoming national population and housing census of 2021 is an important opportunity to provide up to date and comprehensive understanding of socio-economic conditions across all seven provinces and 753 local governments.

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