Hand-Washing and Public Health

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The importance of hand-washing in personal and public hygiene has evolved over the centuries. While the market with its countless number of soaps and hand-wash products for personal hygiene with the accompanying advertising has created a false sense of security, it is community hygiene implemented through public health measures that is really effective in the battle against disease.

Infectious diseases remain a serious public health threat and hand-washing has emerged as one of the components of a package of public health tools to be used in preventing them. To be effective, the different components, including water supply, personal hygiene, food security and sanitation have to function in coordination with one another. Cholera, typhoid and hepatitis A are some of the communicable diseases that are spread via the faecal–oral route. They occur when microorganisms enter the mouth through food, water and unhygienic toilet practices. Coignard et al (1998) observe that such infectious diseases are usually spread via hands.

Compared to techno-centric packages and “magic bullets,” fingers and hands are outliers as far as public health is concerned, despite the fact that they have been at the centre of some of the major milestones in the history of medical practice. For instance, the significance of hand-washing in patient care was first recognised in the early 19th century by Semmelweis, a physician and epidemiologist (Timmreck 1998). Through observation of clinical practice, he noted that medical students who assisted in childbirth often did so after performing autopsies on patients who had died from sepsis (of bacterial origin), as a result of which maternal mortality was high. After instituting a strict policy of hand-washing, death rates fell considerably. After observing the association between hand contamination and maternal mortality, Semmelweis realised that disease could be reduced significantly using this simple hygienic practice. Labarraque later provided evidence of the association between hand contamination and maternal mortality. Today, hand hygiene is considered to be a key measure in preventing the transmission of many communicable diseases. Important preventive strategies include hygiene education and appropriate hand-washing (Benenson 1995). According to the Centers for Disease Control (cdc) (1985) there are four different levels of compliance in hand-washing: washing both hands with soap and rubbing them together to produce lather for 15 seconds (full compliance or level four); washing both hands with soap for less than 15 seconds (partial compliance or level three); rinsing both hands with water but no soap (minimal compliance or level two); and neither washing nor rinsing (non-compliance or level one). The cdc admits that in the absence of well-controlled studies, absolute indications for the frequency of hand-washing are not known.

Public to Personal Hygiene

Hygiene, especially adult hygiene as part of health practice, has its root in the Greek tradition wherein the goddess Hygieia was worshipped as the provider and protector of health. Prior to the modern period, all advice on hygiene assumed that only the wealthier classes could or should be following hygiene measures and practices. Indian mythology related hygiene and cleanliness mainly to purity of mind rather than purity of body. It was only in the 18th century that ideas of hygiene started to reach the middle and lower class families as part of “well-mannered” behaviour. Theories of contagion began to consider dirt as the reason behind the spread of diseases, modified with the advent of the germ theory identifying germs as the cause of various contagious diseases (Rosen 1958). It was also acknowledged that along with personal hygiene, other public health measures such as clean water and sanitation played an important role, and measures were accordingly taken in Western Europe.

In the early 20th century, personal hygiene was focused on children and especially on bathing and hand-washing. In the first half of the century, attention was paid more to social hygiene than to mental and personal hygiene. From 1945 onwards however the focus shifted to personal hygiene with special emphasis on children. After the 1950s, hygiene was defined in a much narrower, individualised and clinical manner. Miner (1956) criticises the medical profession.
for creating such an obsession with personal hygiene.

Burke (1996) shows how the social construction of desire is created to find a market for personal hygiene commodities. According to his analysis with reference to Zimbabwe, both the development of capital and manufacturing during the colonial period and postcolonial advertisements made a strong impact in developing a sense among Zimbabweans that they are uncivilised. Commodification of hygiene was at its peak from the 1970s, and although Zimbabweans tried to resist these changes, the colonial practices left a remarkable imprint on the personal hygiene preferences and choices of the population.

It was in 2010 that the UN General Assembly recognised wash (Water, Sanitation and Hygiene), in which hand-washing is included as an integral component, as a human right. In 2012, the United Nations Children’s Fund (UNICEF) and the World Health Organization (WHO) together developed a post-2015 agenda and proposed targets including access to safe water, sanitation and hygiene at home and in schools, and ensuring the sustainability of all three components.

**Marketing Hand-Washing**

In the 1990s, hand hygiene was back with a commercial element, but this time it also focused on generating evidence through public health research. Evidence from studies conducted in different countries showed a reduction in the incidence of diarrhoeal diseases by 14% to 40% associated with hand-washing with soap. Most studies derided the use of traditional practices of hand-washing using soil, ash, etc, usually common in developing countries (Hoque et al 1995). Multinational companies used partial evidence as a mechanism to promote/market soaps and detergents while ways of improving traditional methods of hand-washing were not explored.

Stanwell-Smith (2003) observes that for our ancestors, hygiene had a broader meaning that affected a person’s whole life, including their personal habits, hygiene, clean air, exercise and the general regulation of their health. The present-day media depiction of hygiene places more emphasis on the excessive use of disinfectants to create a germ-free environment. Hygiene has thus adopted an undesirable modern and narrow connotation in which rather than community hygiene, emphasis is on personal hygiene. There has been an exceptional increase in the availability and use of antibacterial products in homes. The colonial public’s renewed interest in issues of cleanliness within the household unit is substantiated by the demand for such products, even though there is a paucity of definitive evidence regarding their impact on disease incidence or transmission (Larson et al 2001). In the hand hygiene market, new products such as hand-wash liquids have gained a considerable market share, with advertisements claiming that the bar soap might contain bacteria that could be transferred to the hands of another person who uses it after it has been used by someone else. However, Heinze and Yackovich (1988) in their clinical study show that little hazard exists in routine hand-washing with previously used soap bars, backing the frequent use of soap and water for hand-washing to prevent the spread of disease.

Surveillance systems and national statistics are generally biased towards disease outbreaks and tend to underestimate small clusters of infection. The risk involved in home/personal hygiene can only be studied with comprehensive in-depth observational studies. Investigating poor hygiene practices is also difficult because it is embarrassing and stigmatising, and people do not want to speak about it (Stanwell-Smith 2003). Studies have found that hand-washing habits are associated with education, water availability and access to media (Rabbi and Dev 2013). Some studies also show that washing with water alone brings down the diarrhoea infection rate (Luby et al 2011). However, clinical as well as social research in this area is limited. Not much research has been conducted to examine the short and long-term effects of hand-washing with soap/liquid soaps in preventing various communicable diseases (Larson et al 2003). In a clinical trial, Larson et al (2003) found that when hand-washing with soap was occasionally administered, there was very little measurable effect on the microbial count on the hands. Following a single wash, there was no significant reduction in the microbial count, but over a period of time a difference emerged in the microbial count before and after washing. There are also studies showing that post-wash microbial counts are actually higher than pre-wash counts (Widmer 2000). This happens as a result of the increased skin-shedding associated with washing and mechanical friction. This is one reason that in a healthcare setting, hand-washing with soap is done minimally, with alcohol hand rubs being recommended.

In India, the hand-washing agenda received massive publicity via the media when a global body known as the Public–Private Partnership for Hand-Washing with Soap (PPPHW) began in 2008 to celebrate 15 October as the Global Hand Washing Day. The PPPHW is a coalition of international stakeholders whose focus is on hand-washing and child health. Established in 2001, it engages in the universal promotion of the practice of proper hand-washing. Along with various international organisations and educational institutions, multinational companies that market personal hygiene products are also part of this initiative (www.globalhandwash.org).

Children have become a major target group of the present-day hand hygiene model, with hygiene literature as well as commercial advertisements targeting
them with an overemphasis on the role played by handwash agents in ensuring health and preventing various diseases.

Historically, personal hygiene was confined to bathing and cleaning oneself. With the increase in disposable income and lifestyle changes, excessive emphasis is placed on personal hygiene of which handwash is an important component. Multinational companies that have established their market share dominate India’s personal hygiene market. With the wide range of handwash products available in the market, there is intense competition among the companies and confusion among consumers. Due to the market potential, many cosmetic companies and fast-moving consumer goods companies have launched handwash products. The variety and range of products available include handwash, anti-odour handwash and moisturising handwash. Apart from germ destruction, leading brands also make certain claims as described in Table 1.

### Table 1: Brand Claims

<table>
<thead>
<tr>
<th>Brand Names</th>
<th>Claims</th>
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<tr>
<td>Fem</td>
<td>Fights germs; 14 times better protection from harmful germs</td>
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<tr>
<td>Chandrika</td>
<td>Gentle, moisturising germ protection</td>
</tr>
<tr>
<td>Care Mate</td>
<td>Tough on germs; germ-control</td>
</tr>
<tr>
<td>Savlon</td>
<td>Gentle protection; removes germs</td>
</tr>
<tr>
<td>Santoor</td>
<td>Gentle, moisturising germ protection</td>
</tr>
<tr>
<td>Lifebuoy</td>
<td>Balanced protection from germs; protection from germs, removes germs from skin surface</td>
</tr>
<tr>
<td>Dettol</td>
<td>10 times better protection against a wide range of germs; fights germs leaving hands soft and totally clean; recommended by the IMA</td>
</tr>
<tr>
<td>Palmolive</td>
<td>Removes germs</td>
</tr>
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Most of these claims are not clinically proven or substantiated with any base-referral data. For example, terms such as “germ removal” and “germ killing” are used interchangeably. Similarly, advertisements also claim without authentic clinical data that less than 10 seconds of hand-washing suffices for germ removal.

The handwash market is fast expanding. Studies and market surveys show that the industry is growing at the rate of 20% annually. According to a business survey conducted by a leading daily newspaper,

Specialist handwash products are still under-developed in India, for bathing bar soaps are often extended in their use for washing hands too. The total soap market is Rs 4,500 crore and though the size of the liquid-soap category meant just for hand wash is Rs 12 crore, it has the potential to touch Rs 100 crore in five years. In Malaysia, for instance, liquid soap is about 25% of the total soap business and in India, liquid soap penetration is a mere 3% (Business Line, 26 April 2014).

It is evident that personal hygiene and especially hand hygiene has become a huge business in India replacing cultural practices and cheaper options. Whether such market interventions have led to positive outcomes in terms of prevention of enteric diseases is contentious but could be assessed through empirical studies.

### Conclusions

Scientific and micro-level interventions are not sufficient to bring down the burden of infectious diseases. A social and physical environment riddled with poverty, inequities, unhygienic and insanitary conditions generates the risk of infectious diseases (Deodhar 2010). Hygiene has different levels: personal, domestic and community hygiene. The first two levels, which are predominantly a matter of personal choice and habits, are undoubtedly important. But unless the third level, that is, community hygiene, is ensured through various public health measures, the disease burden will continue to be heavy.

There is no doubt that personal cleanliness brings down the rate of infectious diseases. But the entry of the market into this domain has created a false sense of security that gets conditioned and reinforced by the onslaught of advertisements. We should not forget the lessons learnt from public health interventions in Western Europe that along with personal hygiene, general improvements in environmental conditions and components like clean water, sanitation and food security have brought down infant/child death/infection rates considerably. The obsession with hand hygiene also brings in the persisting influence of the market on personal health, overriding or marginalising the negative impact on ecology and the emergence of resistant germs.

### References


Center for Disease Control and Prevention (1985): “Guidelines for Handwashing and Hospital Environmental Control,” MMWR, 36(2S) (Supplement).


