

## Awareness Regarding Hand Hygiene: A Survey Based Study

Sana Sarfaraz<sup>\*1</sup>, Huma Rizwan<sup>2</sup>, Safeena Siddique<sup>2</sup>, Kainat Firdous<sup>2</sup> and Summaiya Khan<sup>2</sup>

<sup>1</sup>Department of Pharmacology, Faculty of Pharmacy, Jinnah University for Women, Karachi, Karachi-74600, Pakistan

<sup>2</sup>Department of Pharmacy, Jinnah University for Women Karachi, Karachi-74600, Pakistan

\*Corresponding author e-mail: [sana.sarfraz@live.com](mailto:sana.sarfraz@live.com)

### ABSTRACT

**Background:** one of the major factors for preservation and prevention of spread of diseases is Hygiene. Hand hygiene refers to cleaning of hands with soap or water which removes extraneous matter as well as microorganisms from skin. Drying hands properly is also part of hand hygiene as pathogens flourish in wet media.

**Objective:** The purpose of present study was to evaluate awareness regarding hand hygiene in general population, association between infection and hand hygiene, methods adopted by general population for hand hygiene and reasons of noncompliance regarding hand hygiene.

**Method:** A cross-sectional study was conducted on general population in different age groups (15-50 years) from different universities, hospitals and public places in Karachi to determine their concept of hand hygiene and reasons of non compliance.

**Results:** Our results indicated that majority of population was aware about hand hygiene but wash hands only for specific purposes whereas infants and elderly are more prone to infections due to poor hygiene. Another factor is unavailability of clean water.

**Conclusion:** From above study we found we need to create awareness regarding importance of hand hygiene as factor that can prevent from spread of infections by educating general population (literate and illiterate) through media and seminars and try to take initiatives to make availability of clean water possible.

**Keywords:** Soap, Water, Drying hands, Microorganisms.

## INTRODUCTION

Hygiene is basically defined as branch of science which is involved in knowledge and practices related to promotion of health.<sup>1</sup> Spread of infections (bacterial and viral) can be prevented by following hygiene practices. Since cleaning processes (e.g hand washing, taking bath) removes dirt and soil as well as infectious microbes they are commonly used to achieve hygiene.<sup>2</sup> Hygiene not only plays a role in medical care but is also involved in our day to day life. It is also part of quality assurance test in manufacturing drugs, cosmetics, food and other products. There are various types of hygiene like dental hygiene, hand hygiene, body hygiene and occupational hygiene etc. Hygiene promotion is essential to control spread of infections. Infection is commonly defined as invasion of body tissue of host organisms by disease causing organisms, their increment by multiplication and reaction of host tissue to toxins produced by these organisms.<sup>3</sup> Infectious diseases are alternately referred to as communicable and transmissible diseases.<sup>4</sup>

There are variable routes of transmission of infectious diseases such as through saliva, through blood and body secretions<sup>5</sup>, skin and mucous membrane<sup>6</sup>, through air<sup>7</sup>, through direct or indirect contact with infected person<sup>8</sup> or through contaminated food and water.<sup>9</sup> Infections can also be spread when infected person sneezes or coughs out droplets of mucous. These droplets may be inhaled by another person directly or indirectly and cause infection in them.<sup>10</sup> The main sources of infection in home are other infected people, unclean water and pets. Besides that improper cleaning of house and improper washing of dishes can also provide medium for microorganisms to grow.

The act of cleaning hands with water or soap or liquids is generally referred to as

Hand hygiene.<sup>11</sup> The importance of washing hands is that it cleanses the hands of harmful chemicals and pathogens (bacteria and virus).<sup>12</sup> Hand hygiene is especially important for people working in medical field and restaurants or who cook and serve food to general public.<sup>13</sup> Cross contaminations in hospitals is very common and hand hygiene is considered one of most important factor that can prevent it.

The Center for Disease Control and Prevention has stated “Hand washing is one of the most effective measures for preventing spread of pathogens.” A lot of work has been done regarding hand hygiene in healthcare settings, its importance, complications, reasons of non-compliance and measures to overcome them.<sup>14</sup> The UN estimates hand washing alone could save more than a million lives a year from diarrhoeal diseases and prevent respiratory infections.

Since a lot of work has been conducted on concept of hand hygiene in health care environment, The purpose of present study was to evaluate awareness regarding hand hygiene in general population, their concepts regarding importance of hand hygiene to control infection and to create measures for increasing awareness regarding hand hygiene to overcome noncompliance so spread of infections can be reduced and healthy lifestyle maintained.

## MATERIALS AND METHOD

It is a survey based study (Age= 15-50, N=200) in which data has been collected from various famous public locations of karachi including literate and illiterate people of upper, middle and lower class. The survey conducted through questionnaires that contain 11 questions, these questions designed in such a manner

that reflects not only awareness regarding hygiene but also the infectious diseases commonly occurring in household due to improper hygiene. The answers recorded as open ended. It is primary data as it has been collected directly from the effected individuals.

## RESULTS AND DISCUSSION

Hand washing is so routine and basic that it is often taken for granted.<sup>15</sup> Hands are also the most likely way in which infections or microorganisms might spread between patients, so simply washing your hands is the most effective method of preventing the transmission of infections.<sup>16</sup> Figure 1 shows awareness regarding hand hygiene. Our results show that majority of population is aware of concept of hand hygiene while very few people are unaware of hand hygiene.

Figure 2 show trends of hand washing habits in the population, the results show variations in trend of hand washing. Before taking meal is the highest trend observed among the population while washing hand before preparing meal is the second highest figure observed. Moderately people are used to washing their hands after touching sick people and after touching animals. The least observed trend of washing hands is after sneezing while some of the population is in habit of washing their hands in all of the above conditions. It is a known fact that Droplet infection is very common i.e spread of infection by scattering of large drops at high velocity from nose or mouth<sup>17</sup> and when hands remain unwashed after sneezing can be a vital source of infection.

Figure 3 shows common infections caused due to lapses in hand hygiene such as influenza, diarrhea, mumps or skin diseases. Our results show that the most common infection seen in population is influenza while minority population suffers from skin

diseases. Influenza is basically a community based infection and proper hygiene is included as preventive measures for stopping spread of disease.<sup>18</sup>

Figure 4 shows awareness regarding importance of hand hygiene for control of infections. Our results show that majority of population were aware of the importance of hand hygiene for control of infections. Figure 5 shows awareness regarding proper hand washing techniques. Our results show that majority of population were aware of proper hand washing techniques while some population in minority needed to be aware regarding proper hand washing techniques.

Figure 6 shows the use of soap for hand washing. Large number of people were aware that use of soap is necessary for hand washing, not only after using bathroom & before eating but also for other purposes.

Figure 7 shows infections are more common in elderly people and children due to weak immunity, due to lapses in hand hygiene or due to both. Our results showed people were aware that elderly and children are more prone to infections as compared to other groups. Figure 8 shows the difference in rate of sickness of hand washers and non hand washers. Our results show that the rate of illness was usually high in non hand washers as compared to hand washers. Mostly non-Hand Washers fall ill very frequently, that is always or once or twice in a month. While hand Washers fall ill rarely or once every 6 months or even less than that.

Figure 9 shows reasons of low Hand hygiene compliance such as no access to clean water, not taken seriously or lack of awareness. According to our results, majority of people considered that the main reason is lack of awareness. But on the other hand large numbers of people think that the reason is no access to clean water.

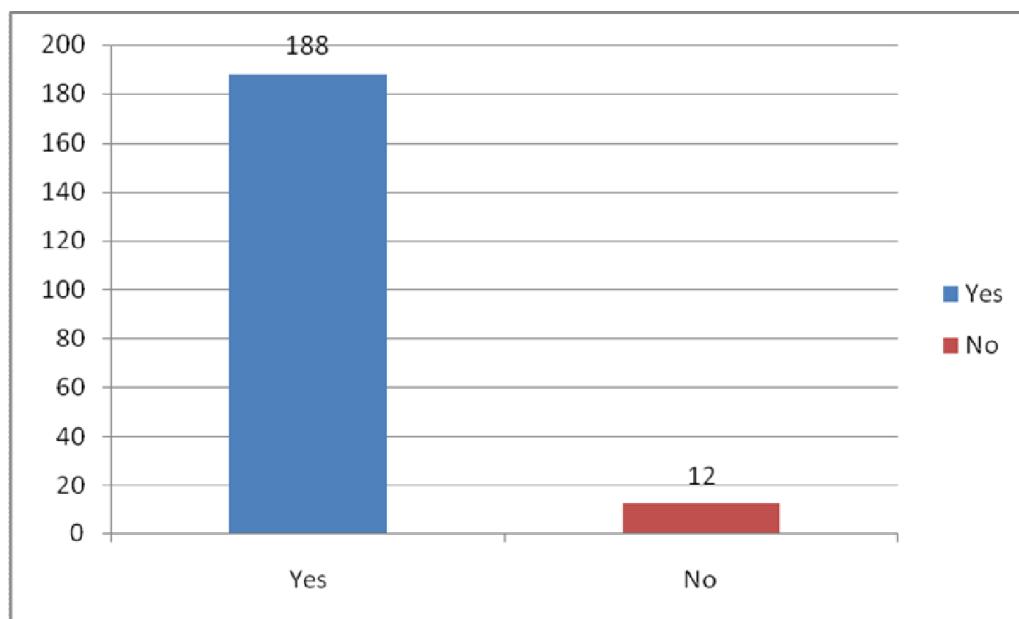
## CONCLUSION

From the above study we concluded that although people are aware about the concept of hand hygiene with respect to eating food and using bathroom, their awareness regarding hand hygiene as medium to stop spread of infection is minimum. Therefore awareness needs to be created by different mediums (educating seminars in schools, colleges and universities and television shows) so we can stop the rapid spread of different infections. Water should be boiled before usage so microorganism contamination can be reduced. Since it is said "Prevention is better than cure" so we should adopt hand hygiene in our life and prevent ourselves from risk of infections.

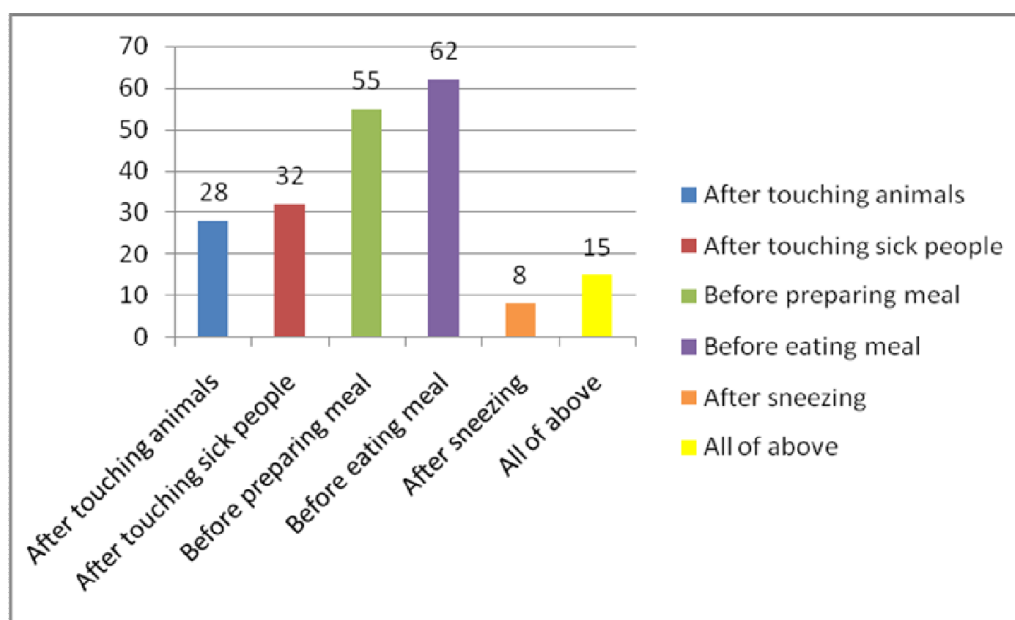
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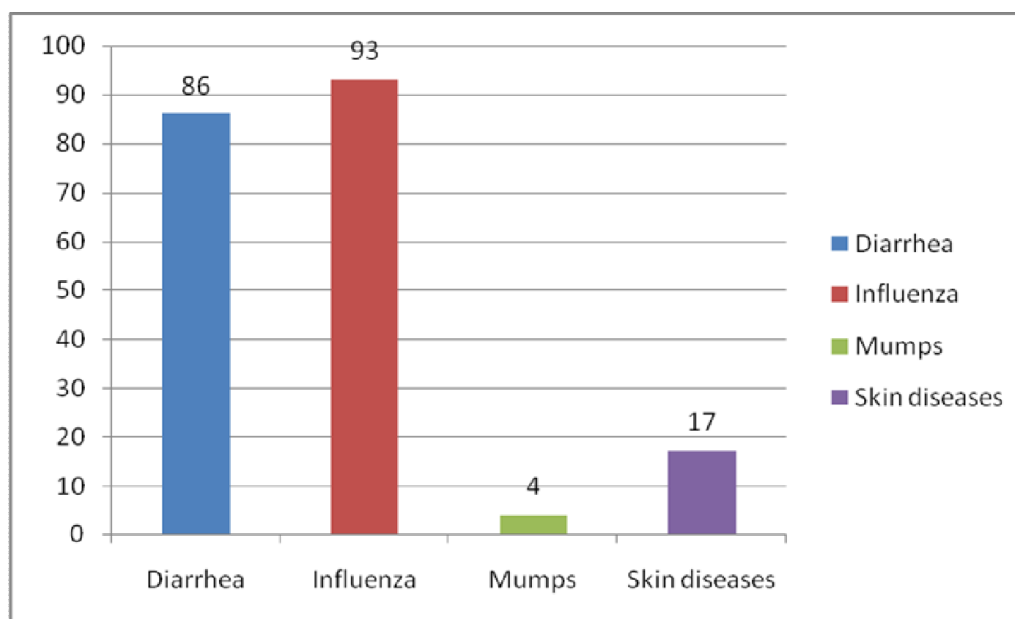
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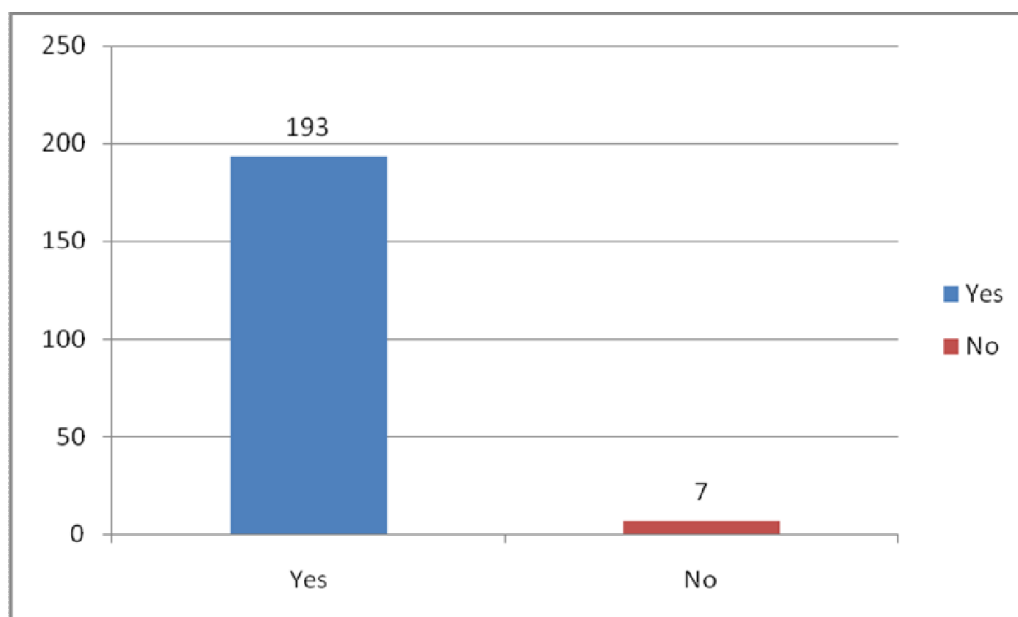
**Figure 1.** Awareness regarding hand hygiene



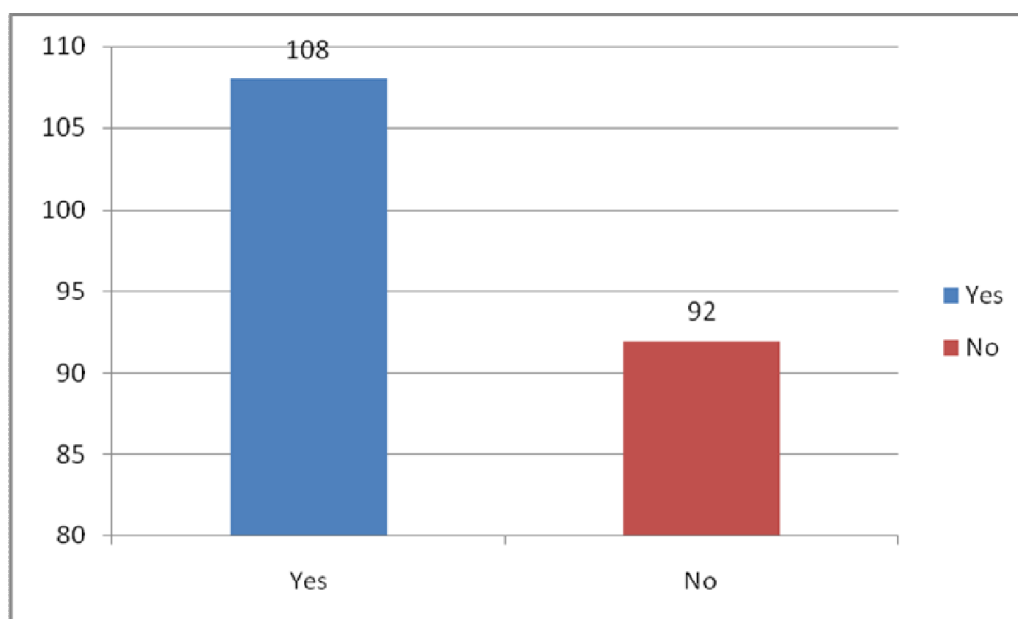
**Figure 2.** Trends of hand washing habits



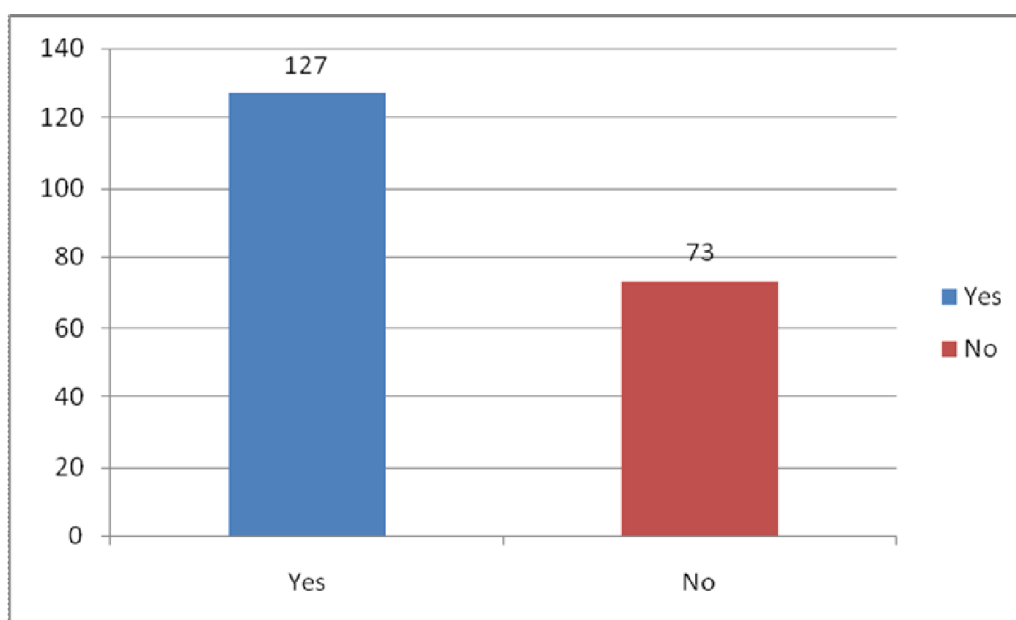
**Figure 3.** Common infections due to lapse in hand hygiene



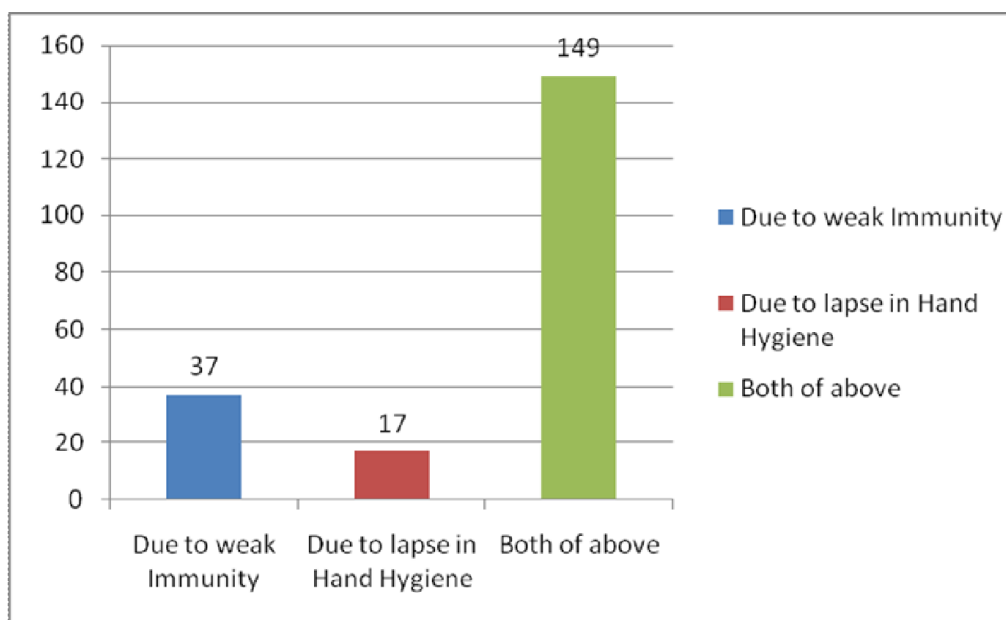
**Figure 4.** Hand hygiene important for control of infections



**Figure 5.** Awareness regarding proper hand washing technique

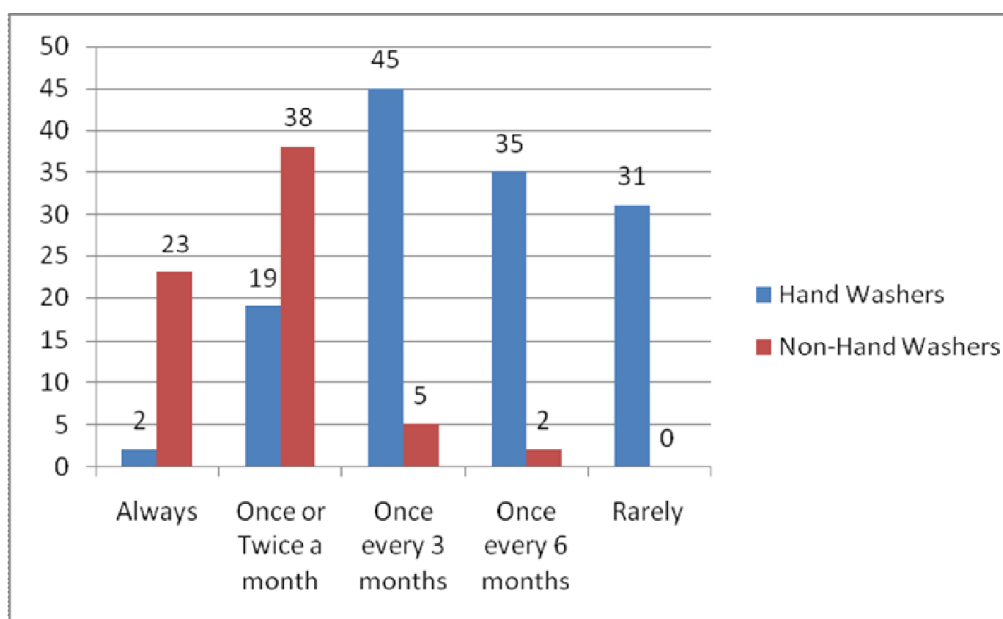


**Figure 6.** Hand washing using soap only after using bathroom and before eating

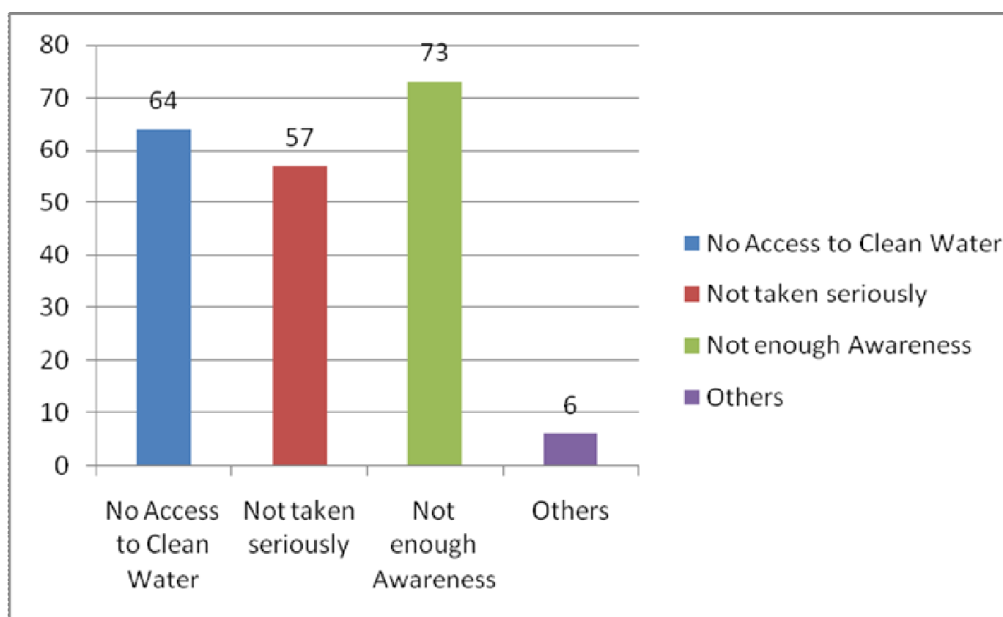


**Figure 7.** Reason infections more common in elderly and children





**Figure 8.** Rate of sickness



**Figure 9.** Reasons of low hand hygiene compliance