

A review: Mobile phone a source of infections to community.

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Abstract

A mobile or cellular telephone is a long-range, portable electronic device for personal and familiar telecommunication. The use of mobile phones by every member of family may serve as a potential vehicle for the spread of pathogenic microorganisms. The excess used of such mobile become warmer to provide favorable environment for breeding of many microorganisms that are normally found on the skin and hands. The mobile phones are used routinely all day long and the same phones are used both inside and outside the hospital playing a possible role in spreading infections to the outside community. The probable way of infection is mobile phone to hands, hands to breast and breast to mouth of baby. The used of mobile phone is restricted and hand washing before breast feeding is strictly implemented. The outbreak of constipation, vomiting, diarrhea and dysentery is noticed but it is ignored to rise of problem due to mobile phones. Practice of disinfecting cell phones was lacking both in Health care professionals and community.

Keywords: Colonization, mobile phone, health hazard, diarrhea and dysentery.

Introduction

A mobile or cellular telephone is a long-range, portable electronic device for personal and familiar telecommunication. The vast majority of mobile phones are hand-held. In less than 4 years, mobile phones have gone from being maximum and cheap pieces of equipment used by everyone.

In many countries, mobile phones outnumber landline telephones since most adults and many children now have own mobile phones. At present, Asia has the fastest growth rate of cellular phone subscribers and users in the world. The use of mobile phones by every member of family may serve as a potential vehicle for the spread of pathogenic microorganisms.

Colonization by potentially pathogenic organisms on fomites i.e. various inanimate objects such as duster, marker, pen, pencil, chalk, pagers, computer, keyboards and mobile phones has been reported and implicated in transmission of pathogens [1]. In recent times there has been an increase in the use of mobile phones by academic and non-academic staff of educational institutions. Innovations in mobile phones have led to better strategic life with good communication [2]. Therefore the use of mobile phones in the course of a working day has made mobile phones potential agents of microbial transmission [3]. The increase use of mobile phones is seen as responsible for rise in community infection rates reported by ecological findings [4].

The objectives of the study are to study the use of mobile phones may serve as a potential vehicle for the spread of pathogenic microorganisms. The mobile phones acts as a source of microbial transmission is potentially considerable.

a. Mobile phone used by adult persons:

Mobile phones have one of the most indispensable accessories of professional and social life. It is becoming an important means of communication worldwide being easily accessible, economical and user friendly. The user is potentially increased day by day. Each and every house of community has their own device. The used of mobile phone is used tremendously from the age 1 year to senior citizen. With all achievement and benefits of mobile phone, it is easy to overlook health hazard. The outer surface of mobile screen is exposed to variety of user or handlers. The health and hygiene of user is influenced the microbial flora on it. Kind attention is that the 75% mobile user is android (touch screen) mobiles holders. Microbiologists say that the excess used of such mobile become warmer to provide

favorable environment for breeding of many microorganisms that are normally found on the skin and hands. A well-practiced infection control plan that encompasses hand hygiene, environmental decontamination, and surveillance contact isolates is effective for prevention of such pathogenic organisms [5]. The outbreak of constipation, vomiting, diarrhea and dysentery is noticed but it is ignored to rise of problem due to mobile phones.

b. Mobile phone used in hospital area:

The wide spread use of mobile phones among medical personnel in hospitals is a matter of controversy. The question of concern is how to use the mobile phones sensibly, getting their benefits and minimizing their risks. In an emergency, surgeons can seek urgent help from their superiors and colleagues, call for an opinion from the biomedical or electrical staff in case of any mechanical or instrument failure in the middle of the surgery [6]. If mobile phones are used carelessly in surgical words or intensive care units, they may act as a source of infection to patients while handling them, such as during dressing of surgical wounds [7]. Besides, there are no guidelines for disinfection of mobile phones that meet hospital standards. Moreover, the mobile phones are used routinely all day long and the same phones are used both inside and outside the hospital playing a possible role in spreading infections to the outside community. The use of cell phones often occurs in hospital halls, laboratories, and/or intensive care units when dealing with severe illnesses [8].

c. Mobile phone used by child:

The attraction of mobile used is tremendously increased due easy accessibility due to its cheap value and low price data plans (used of mobile internet). The mobile may play an important role in the entertainment of small kids. They are become adduct to mobile phone to saw various funny videos and games on it. The small child songs and stories are easily available on Google YouTube. The parental care is becomes risky to extreme used of mobile phones by such small kids. It is hazardous to their health due to pathogens present on it. The mobile is a vehicle of transmission of infection to smaller kids to adults. Unlimited used of mobile phone

is also biggest problem of lot of families. During each and every activity, mobile phones are present in their hands. The pediatric problem is rises due to vigorous used of mobile phone.

d. Mobile phone used by breast feeding mothers:

We found that the mobile phone is potential source of infection to breast feeder babies. The mobile phone is used by mother a probable source of infection to child. The hands act as a vehicle to transmit the infections. The probable way of infection is mobile phone to hands, hands to nipple and nipple to mouth of baby. The outbreak of vomiting, diarrhea and dysentery is noticed in the babies under the age of 6 months. The used of mobile phone is restricted and hand washing before breast feeding is strictly implemented.

e. Pathogenic microbes on mobile phones:

Normal commensals are commonly present on the cell phones of both health care professionals and community residents. The pathogenic bacteria are isolated such as *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Escherichia coli* and *Enterococci faecalis* [9]. Mobile phones may get contaminated by bacteria (such as *Escherichia coli*, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*), which cause hospital infections, and may serve as a vehicle for the spread of nosocomial pathogens. The mobile phones are potential carrier of many fungi such as *Aspergillus* species, *Alternaria* species, *Cladosporium* species and *Penicillium* species which can be potentially harmful causing minor infections to severe health hazards. If proper care and personal hygiene is not taken care of it could be vehicles for the transmission of biological weapons [8]. Ibrahim and its coworkers [10] are confirmed that different kinds of microbes are found on mobile phones. The research findings indicate that *Staphylococcus aureus*, *Pseudomonas* species, *Proteus* species, *Bacillus subtilis* and *Enterobacter aerogenes* are the main bacteria isolates frequently associated with mobile phones.

f. Disinfectants used for mobile phones:

Among the study subjects who disinfect their cell phones, majority disinfect once in three months or even

less frequently. The frequency seems to be better among health care professionals compared to community residents. The frequency of disinfecting cell phones seems to be better among health care professionals in the study done by Ramesh *et al.*, [11] in which, the health care professionals disinfect their cell phones once or twice a week. It signifies the necessity of a protocol for proper hygiene and disinfection of cell phones. This may minimize the contamination of cell phones. In a study by Arora *et al.*, [12] the use of 70% isopropyl alcohol wipes eliminates microbial contamination in 98% of cell phones. Practice of disinfecting cell phones was lacking both in Health care professionals and community residents. Water mixed dettol or savlon wetted cotton cloth is used to wipe the mobile phones which also reduces microbial flora.

Conclusion

The use of mobile phones by every member of family may serve as a potential vehicle for the spread of pathogenic microorganisms. Hand washing is not performed often enough and many people are used personal mobile phone in their working and daily activities. The mobile phones acts as a source of microbial transmission is potentially considerable. This lack of attention may be referred to little awareness about potential risks posed by mobile phones microbial contamination and their role as vehicle for transmission of infections. The use of 70% isopropyl alcohol wipes eliminates microbial contamination in cell phones.

Conflicts of interest: The authors stated that no conflicts of interest.

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