Impact of corona virus disease outbreak on behaviours of Indian population

Gulappa Devagappanavar

School of Environmental Science, Public Health and Sanitation Management, Karnataka State Rural Development and Panchayat Raj University, Gadag, Karnataka, India; Email:gulappa.md07dmr@gmail.com

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General Note
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ABSTRACT

Background: Corona virus disease pandemic caused psychological, economic and social problems among the mankind in worldwide. Outbreak affected the Indian population through health, economy, agricultural production, business, and more importantly Indian social and cultural practices. This study was conducted to assess the behavioral change after the corona pandemic and impact of thermal screening on psychology of population. Methods: Across sectional study was conducted in the Gadag district headquarter and peri-urban area from 18th march 2020 to 13th April 2020 using semi-structured interview schedule. Convenient sampling technique method was adopted to obtain the data and data was analyzed using SPSS v20, expressed in frequency and percentage. Results: Out of 246 participants majority (67.8%) of them changed behaviors related to personal and environmental hygiene due to disease outbreak. 24% of them responded that disease outbreak disturbed their mental status. Majority (60.8%) of the participants opined that thermal screening impact on them to come out from psychological fear. Conclusion: Study concludes that due to corona virus disease pandemic, people changed their behavioral practices to break the spread of infection. Thermal screening relived their fear about disease.

Keywords: Behavioral change; Corona pandemic; Hygienic practices; Impact of Screening; psychological status
1. INTRODUCTION

Corona virus disease is an urgent and spreading threat to the whole world and mankind (Guan et al., 2020). Governments around the world are finally beginning to grasp the scale of the corona virus pandemic problem, among that behavior change is one of the most challenging event to second largest populated country like India (Rajagopalan, 2020). Risk Communication and Community Engagement is an essential component of health emergency preparedness and response (WHO, 2020a). When health systems are overwhelmed, both direct mortality from an outbreak and indirect mortality from vaccine-preventable and treatable conditions increase dramatically. Countries will need to make difficult decisions to balance the demands of responding directly to COVID-19, the easy method from health department is thermal screening to maintain the balance between demand and response (WHO, 2020b). Cleaning refers to the removal of dirt and impurities, and sanitation refers to complete removal of germs, from surfaces. Cleaning and disinfecting the high-touch surfaces daily in household common areas will decreases their number and therefore any risk of spreading infection (CDC, 2020a). In this study we have assessed the people behavioral practices before and after the pandemic and the impact of thermal screening on psychology of the population.

2. MATERIALS AND METHODS

Study Design

A cross sectional survey was conducted using convenient sampling technique for data collection. Data was collected at Government employees working places, Vegetable vendors data at APMC market, women’s and general population information was obtained from 18th March to 13th April 2020 by visiting their residence.

Study setting

Data was obtained in the field and office settings in the district headquarters and peri-urban areas of Gadag, Karnataka, India. To create health awareness among the population our University, public health department was conducted the screening activity along with awareness creation at Gadag town and its peri-urban area.

Participants

In this study we have included the government employees, vegetable vendors, women’s and general population. Data was obtained from those who given oral consent to participate in the study.

Variables

Socio demographic details such as age, gender, education, type of family, residence, employment. Behavioral practices related to personal hygiene, family hygiene, and environmental hygiene and personal protection. Psychological Variables like happy, fear, irritability and insomnia.
Data Sources
Primary data was obtained by administering the semi-structured interview schedule to the study participants.

Study size
246 participants were included in the study using convenient sampling technique method (figure 1).

Statistical methods
Data was entered into excel sheet and expressed in frequency, percentage using SPPS v20.

Ethical Clearance
Obtained from the Karnataka State Rural Development and Panchayat Raj University ethics committee Ref.no. KSRDPRU/IEC/MPH/2/2019-20

3. RESULTS
In the current study majority of the participants are belonged to 41-50 age group, male and completed the graduation. Semi-profession was their occupation, belonged to above poverty line and nuclear family. More than half of them are residing in urban area (Table 1).

Table 1 Socio-demographic details of study participants (n-246)

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristics</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30</td>
<td></td>
<td>37 (15.0)</td>
</tr>
<tr>
<td>31-40</td>
<td></td>
<td>43 (17.5)</td>
</tr>
<tr>
<td>41-50</td>
<td></td>
<td>107 (43.5)</td>
</tr>
<tr>
<td>51-60</td>
<td></td>
<td>51 (20.7)</td>
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<tr>
<td>61 &amp; Above</td>
<td></td>
<td>08 (03.3)</td>
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<tr>
<td>Gender</td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>196 (79.7)</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>50 (20.3)</td>
</tr>
<tr>
<td>Education</td>
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<td></td>
</tr>
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<td>Professional</td>
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<td>21 (08.5)</td>
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<tr>
<td>Graduate</td>
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<td>123 (50.0)</td>
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<tr>
<td>Diploma</td>
<td></td>
<td>28 (11.4)</td>
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<tr>
<td>High school</td>
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<td>23 (09.3)</td>
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<tr>
<td>Middle school</td>
<td></td>
<td>27 (11.0)</td>
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<tr>
<td>Primary school</td>
<td></td>
<td>24 (09.8)</td>
</tr>
<tr>
<td>Occupation</td>
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<td></td>
</tr>
<tr>
<td>Professional</td>
<td></td>
<td>09 (03.7)</td>
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<tr>
<td>Semi-profession</td>
<td></td>
<td>87 (35.4)</td>
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<td>Clerical / shop/ farm</td>
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<td>47(19.1)</td>
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<td>Skilled worker</td>
<td></td>
<td>33(13.4)</td>
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<tr>
<td>Semiskilled worker</td>
<td></td>
<td>34(13.8)</td>
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<tr>
<td>Unskilled worker</td>
<td></td>
<td>33 (13.4)</td>
</tr>
<tr>
<td>Unemployed</td>
<td></td>
<td>03 (01.2)</td>
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<tr>
<td>Family belongs to</td>
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<td></td>
</tr>
<tr>
<td>Below Poverty Line</td>
<td></td>
<td>77 (31.3)</td>
</tr>
<tr>
<td>Above Poverty Line</td>
<td></td>
<td>169 (68.7)</td>
</tr>
<tr>
<td>Type of family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear</td>
<td></td>
<td>194(78.9)</td>
</tr>
<tr>
<td>Joint</td>
<td></td>
<td>52(21.1)</td>
</tr>
<tr>
<td>Residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td>78 (31.7)</td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td>168 (68.3)</td>
</tr>
</tbody>
</table>
Figure 1 Response about personal hygiene

Due to corona pandemic one third of the participants of are started using sanitizer and few started showering every day and whenever they will came out from the outside. More than half of them were changed their habit into hand washing with soap before food and frequently (Figure 1).

Figure 2 Responses about Community and environmental hygiene

Findings reveled that before the pandemic only few were using the disinfecting agents to clean their houses and furniture's but due to pandemic nearly half of them have started using disinfectants. Because of corona virus disease nearly half of they made the habit of cleaning their home surroundings daily (Figure 2).

In the current study it was found out that most of the participants have started wearing face mask which they never used before. More than half of them adopted the habit of regular usage gloves and foot wear (Figure 3).
Corona disease outbreak made the negative impact on the psychology of the people. Participants replied that it was disturbed their mental status. Many people adopted different ways to come out from this psychological impact such as yoga and listening music (Figure 4).

We came out with very interesting findings that thermal screening made them happier and reduced the fear about the corona virus disease among participants (Figure 5).
4. DISCUSSION

Population characteristics
Current study was conducted in district headquarter and peri-urban area. Majority of the participants were belongs to middle age group, male and completed the graduation.

Personal hygiene
In the current study all most all participants were never use the sanitizer before but due to corona virus disease nearly one third of the participants have adopted the habit of regular usage of hand sanitizer to control the infection. Similar findings found in study conducted at Bangladesh (Biswas et al., 2019), United Kingdom (Munoz, Gloria Patricia, 2013), United States (Hilburn, Hammond, Fendler, & Groziak, 2003) and Centre for Disease Control also recommended to use sanitizer regularly to control the Covid-19 infection (CDC, 2020c).

Showering
We came out with an interesting findings many people adopted the habit that they will take showering every day and wherever they came out from outside. The same recommendation made by World Health Organization (WHO, 2009) and Government of India to control and prevent the infections (Government of India, 2020).

Hand washing
More than half of the study participants realized that hand hygiene is very important to control the infection so that they have started using soap for hand washing before food consumption and frequently. A similar opinion found in Korea to control H1N1 influenza (Park, Cheong, Son, Kim, & Ha, 2010) and in China (Liu et al., 2016).

Community and Environmental Hygiene
Nearly half of the participants have started using disinfecting agents to clean households. Similar recommendations found in the CDC report (CDC, 2020b) and study conducted at Liberia during Ebola disease outbreak (Czerniewska & White, 2020). Cleaning of surrounding environment around the household and furniture’s is also one of the effective control measures in the contagious infections, in our study nearly half of them are daily cleaning household surroundings and furniture’s in the outbreak time. A similar recommendation found in the World health Organization report corona virus disease infection prevention and control (WHO, 2020) and similar, interesting results found in Study conducted at United Kingdom (Dancer, 2014).
Usage of Personal Protective equipment’s

Nearly all most all participants are started usage of face mask to control infection. Similar recommendations found in the Covid-19 pandemic prevention and control commentary released by China (Feng et al., 2020) and same result found in study conducted at Australia on respiratory virus transmission (Macintyre et al., 2009). Only few of the study participants replied that they were started using hand gloves which they were not at use in the past. Same findings found in study conducted at Spain (Robinson et al., 2016) and in World Health Organization report (WHO, 2020c). Majority of the participants started using footwear whenever they will go outside. The similar recommendation found in the government of India report (Government of India, 2020).

Psychological status during pandemic

Due to covid-19 pandemic participants were mentally disturbed. A similar result found in study conducted at Australia (Taylor, Agho, Stevens, & Raphael, 2008) and in World Health Organization report about Covid-19 outbreak (WHO, 2020c). More than one third of the participants opined that television news is useful to know about the disease situation. A contradictory result found in study conducted at Canada on SARS outbreak that television was affected the students mental status as majority was got anxiety of acquiring SARS (Bergeron & Sanchez, 2005).

Impact of Thermal Screening

Before the thermal screening one third of participants have the fear in their mind about the disease but after the screening majority were happier that their body temperature level is under normal limits. The world health organization told that corona virus pandemic crisis causing the mental problems among the worldwide population (Nnebue, Adogu, Ifeadike, & Ironkwe, 2014).

5. CONCLUSION

Public health emergencies may affect the health, safety and well-being of both individuals and communities. This study showed that due to corona virus disease outbreak participants were changed their behaviors to cope up with the condition and to break the chain of infection. Some-times fear about the disease will also help to change their behavioral practices.

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Conflicts of Interest: The authors declare no conflict of interest.

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