Awareness on the Use of Hand Sanitizer and Face Mask in Disease Spread- A Survey among College Students

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Abstract

Hand sanitizers are helpful to decrease infections in the hand. Alcohol based hand sanitizers are used in common because alcohol is an antiseptic. Face mask has many layers which removes dust and microorganism which is present in the air. The benefit of hand sanitizer and face mask is to control the further spread of disease among people. Usage of hand sanitizer is one of the hygienic practices. Face masks protect us from disease spread and protect us from pollution Hand sanitizer has 60% of alcohol content which kills microorganisms. The aim of the study is to assess the awareness about hand sanitizers and face masks in this disease spread among college students. In previous studies usage of face mask and hand hygiene are high among adults. Hand sanitizers cannot be used by people having allergies because in some sanitizers they have 90% of alcohol content which causes allergies. Alcohol based sanitizers are accepted being used by about 95% of people. This study consists of 15 self structured questionnaires. The study was approved by the Institutional Review Board. The data was collected and evaluated in the SPSS and the statistical significance was analysed in chi-square. We conclude that many are aware about the usage of hand sanitizer and face mask controlling the disease spread.

Keywords: *Awareness; Hand sanitizer; Face mask; N95 mask; Pollution; COVID-19; Alcohol content; Social distancing.*

Introduction

Hand sanitizers are another way of hand wash which kills bacteria & viruses. Usage of hand sanitizer is one of the hygienic practices. Mask prevents many communicable diseases and prevents us from pollution. Hand sanitizer is mostly made in liquid gel. Hand sanitizer has 60% of alcohol content which kills microorganisms. Face mask has many layers which removes dust and bacteria which is present in the air. The benefit of hand sanitizer and facemask to all age group people as it controls the further spread of disease among people

Proper cleanliness reduces various diseases and controls food borne illness [1-2]. Surgical masks are used to avoid contact of liquid droplets from patients [3]. When one uses a mask, that mask should not be reused by others in case usage of the same mask spreads disease [4]. Hand sanitizers cannot be used by people having allergies because in some sanitizers they have 90% of alcohol content which causes allergies. Alcohol based sanitizers are accepted being used by about 95% of people [5.] . In previous studies usage of face mask and hand hygiene are high among adults [6]. Mask use and importance of hand sanitizer was clearly known by the youngsters [7]. Usage of Hand sanitizer at home may also be considered during a pandemic[8].

This research may be needed to create awareness among people. Hand sanitizers and face masks should

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be properly used to get rid from the spreading of disease. Nowadays diseases are spread commonly among elders and children. The aim of the study is to create awareness on the role of hand sanitizers and face mask in disease spread.

Materials & Methods

This study was a self structured questionnaire administered to 100 college students through online google forms link. The advantages of this study are easy to create and reach widely, gathering large data. The study was approved by the scientific review board, Saveetha dental college, Chennai. A statistical test was done using a software SPSS. Statistical test used descriptive analysis and frequency percentage. This study is a simple random sampling. This survey contains 15 self structured questions. These survey questions have been validated based on the general population's methodology. Pie charts were used to depict the results. The association between groups was assessed by Chi Square test where $p < 0.05$ was considered statistically significant. The study was approved by the Institutional Review Board, Saveetha Dental College.

Result & Discussion

Data collected were analysed using SPSS. 59% of people who had attended this survey were male and 41% were females.About 81% were aware about the importance of hand sanitizer and about 19% were not aware. About 86% were aware that hand sanitizers play an important role in preventing infection disease,14% were not aware. About 83% were aware that n95 face masks prevent COVID-19 and 17% were not aware. About 75% believe that face mask and hand sanitizer prevents microorganisms and 25% did not believe. About 75% were aware of the ingredients used in hand sanitizer and 25% were not aware. About 45% were not aware that America has the biggest production of hand sanitizer and 55% were aware. About 76% were aware that hand sanitizer prevents disease from person to person and 24% were not aware. 13% agreed that surgeons wear masks to protect themselves from water sprayer, about 41% agreed to prevent passage of germs. About 76% agreed that lifestyle was changed and there is a change in the usage protective aid. About 50% said that hand sanitizers were harmful and about 50% said that it is harmless. About 56% of people selected that hand sanitizer is better than hand washing. About 76% felt that it is safe to eat immediately after using hand sanitizer. About 86% were aware about how often we have to change the mask. About 83% are aware of the alcohol content in the hand sanitizer and about 17% are unaware (Figure 1).

We have seen the association between gender (X axis) and responses to awareness on the importance of hand sanitizer in overall hygiene (Figure 2), responses to awareness on effectiveness of the ingredients used in hand sanitizer (Figure 3), responses to awareness on Type of sanitizer which is more effective to protect against COVID-19 (Figure 4), responses to awareness on the sanitizers that it has no effect in spreading the disease from man to man (Figure 5) responses to awareness on harmfulness of hand sanitizer (Figure 6)

We have observed that association between gender and responses to awareness on effectiveness of the ingredients used in hand sanitizer was statistically significant ($p = 0.026$),association between gender and responses to awareness on sanitizers that it has no effect in spreading the disease from man to man was statistically significant ($p =0.048$) and association between gender and responses to awareness on harmfulness of hand sanitizers was statistically significant ($p=0.025$).The statistical associations between groups was assessed by Chi Square test where $p < 0.05$ was considered statistically significant.

Previous studies conclude that about 58.6% agreed that hand sanitizer prevents micro organism and 41.4% disagreed [9] and 60% of them were aware that hand sanitizer has 70% to 90% of alcohol content [10]. According to the previous literature 20% of people wear masks as its surgeons tradition about 96% surgeons accepted that they wear masks and 4% wont wear [11]. 90% aware about the alcohol content in hand sanitizer [12]. 85% said hand wash is best and 15% said using hand sanitizer is easier and better [13]. According to previous studies, hand sanitizer having more than 92% alcohol content is harmful to children [14]. Recent research on silico modelling [15]. Nanoparticles [16,17]. studies on natural products [18,19, 20, 21, 22, 23, 24, 25, 26, 27.] survey on childhood obesity [28],enzymatic studies had enriched my scientific knowledge and improved my passion for research [29]. In future this study will be useful and will create awareness

about prevention of spreading disease, hand hygiene and also protection from pollution.

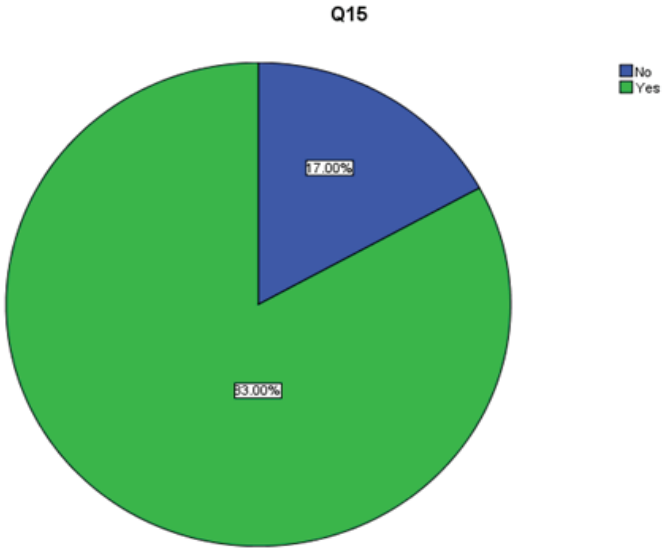

Figure 1: Pie chart represents percentage distribution of responses about awareness on alcohol content in sanitizers. About 83% Yes(green), 17% No (blue). 83% of the participants were aware that sanitizer has alcohol content.

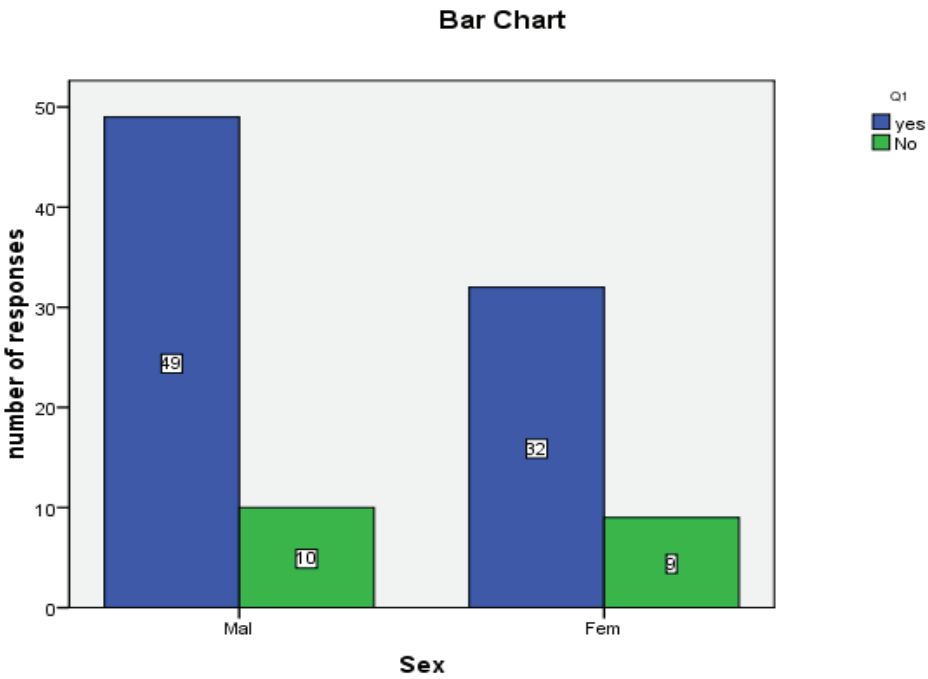

Figure 2: Bar graph represents the association of gender (X-axis) and responses to the importance of hand sanitizer in overall hygiene (Y-axis). Majority of the participants reported yes. Out of the 81 positive responses, 49 males reported yes and 32 females reported yes. Blue colour denotes yes and green colour denotes no. Majority of males were aware about the importance of hand sanitizer (49%). Level of awareness among males and females was similar, though analysis between the association of gender and responses to the importance of hand sanitizer in overall hygiene was statistically not significant. Chi square value - 0.393. p value - 0.531. (>0.05 statistically not significant).

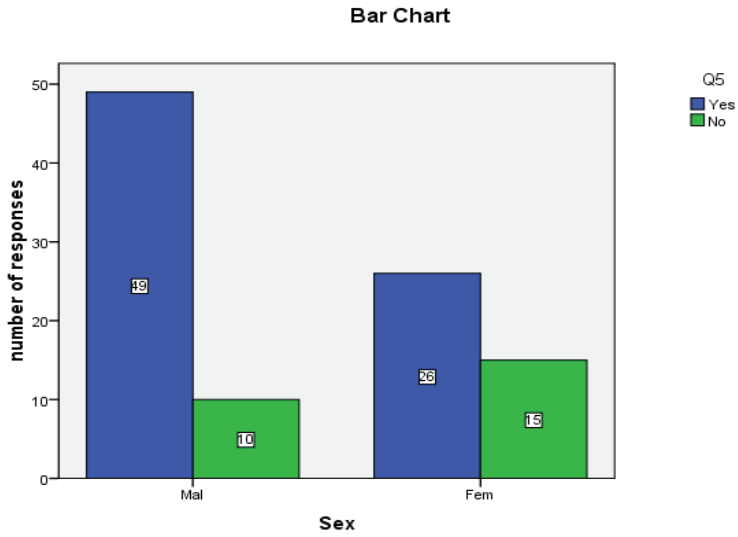

Figure 3: Bar chart represents the association of gender (X-axis) and responses to the effectiveness of the ingredients used in hand sanitizer (Y-axis). Majority of the participants reported yes. Out of the 75% of the population, 49% of male reported yes and 26% of females reported yes. Blue colour denotes yes and green colour denotes no. Majority of males (49%) perceived the effectiveness of the ingredients used in hand sanitizer. Level of awareness among males and females was similar. Chi square - 4.975. p value - 0.026. (<0.05 statistically significant).

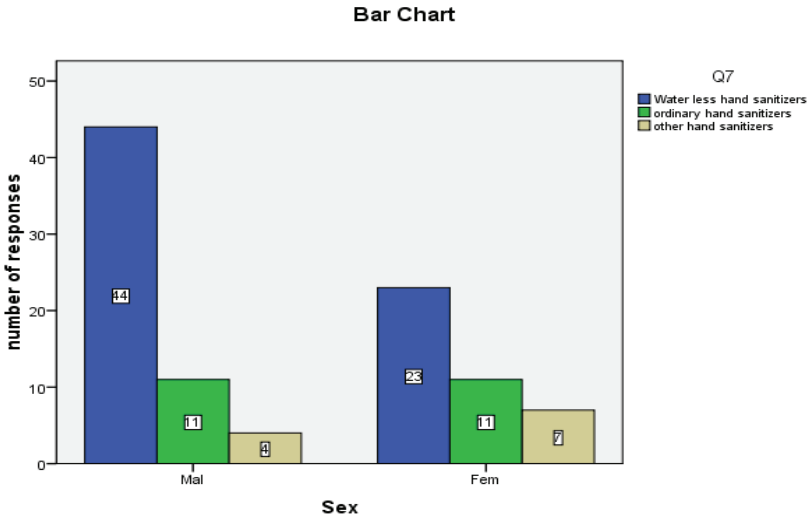

Figure 4: Bar graph represents the association of gender (X-axis) and responses to the Type of sanitizer which is more effective to protect against COVID-19 (Y-axis). Majority of the participants reported waterless hand sanitizer. Out of the 67% of the participants, 44% of males reported waterless hand sanitizer as an option and 23% of females reported waterless hand sanitizer as an option. Majority of the males (44%) were perceived about the type of sanitizer. Level of awareness among males and females was similar. Chi square value - 4.300. p value - 0.117. (>0.05 statistically not significant).

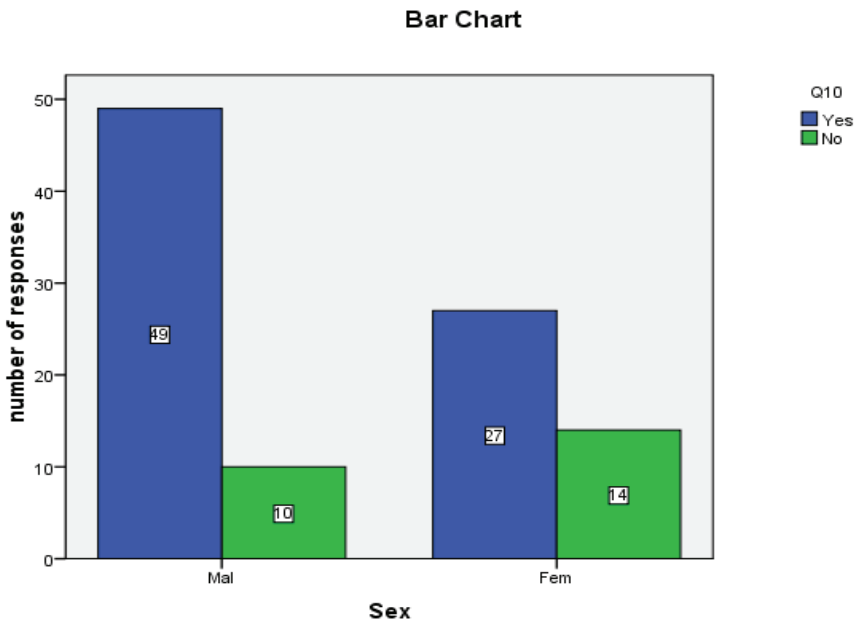

Figure 5: Bar graph represents the association of gender (X-axis) and the responses to the sanitizers that it has no effect in spreading the disease from man to man (Y-axis).Majority of the participants reported yes. Out of the 76% of the participants, 49% of males reported yes and 27% females reported no. Blue colour denotes yes and green colour denotes no. Chi square value - 3.922. p value - 0.048. (<0.05 statistically significant). Majority of males (49%) believed the use of sanitizer does not prevent the spread of disease. Level of awareness among males and females was similar.

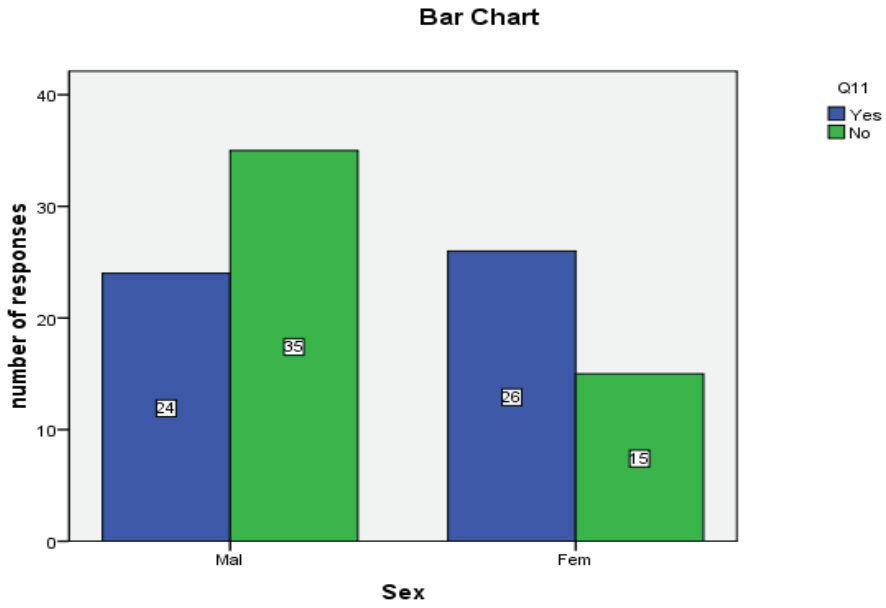

Figure 6: Bar graph represents the association of gender (X-axis) and responses of harmfulness of hand sanitizer (Y-axis). Majority of the participants about 50% of the participants, 35% males reported no and 15% females reported no. Blue colour denotes yes and green colour denotes no. Chi square value - 5.002. P value - 0.025. (<0.05 statistically significant). Majority of males believed that sanitizer does not harm the body (35).Level of awareness among males and females was similar.

Conclusion

We conclude that many college students are aware of the usage of hand sanitizer and face mask in the control of disease spread. Proper cleanliness reduces various diseases and controls food borne illness. Mask prevents many communicable diseases and prevents us from pollution. Hand sanitizer is mostly made in liquid gel. Many awareness camps, workshops may be conducted to educate the younger and older generation about the usage of face masks and hand sanitizer.

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Conflict of Interest : Nil

Source of Interest: Self

Ethical Clearance: It is taken from "Saveetha Institute Human Ethical Committee" (Ethical Approval Number- SDC/SIHEC/2020/DIASDATA/0619-0320)

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