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Awareness on the Precautions to Be Taken During the Spread of Covid-19 Infection among Adolescents- A Survey

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Abstract

Aim And Introduction

COVID-19 is a mild to severe respiratory illness caused due to a coronavirus. It was first reported in Wuhan , China in December 2019. The symptoms are fever, cough and shortness of breath. Adolescents are the ones who are affected the most because they don't get the fun that they usually get.The main aim of this study is to evaluate the knowledge level of adolescents towards the precautionary measures that has to be taken during COVID-19 pandemic.

Materials And Methods

This is an online survey conducted among adolescents in the month of May 2020,through a questionnaire. The questionnaire consisted of 11 questions and was circulated among the participants. The sample size of the study was 100.The statistics done using SPSS software, chi square test was done to check the association and a p value of 0.05 was said to be statistically significant and the results were tabulated accordingly.

Results

100 percent of the participants were aware about the symptoms of COVID-19. 93% of the participants think that wearing a mask in public places prevents COVID-19 spread.99% of the participants strongly believe that lockdown is essential.

Conclusion

From the study, it is evident that adolescents were aware about the precautionary measures that had to be practiced till the pandemic comes to an end.

Keywords
COVID-19; SARS-COV-2; Adolescents; Prevention; 2019-nCOV.

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Introduction

Severe acute respiratory syndrome coronavirus 2 was first reported in Wuhan , China in late 2019. Coronavirus is a single stranded RNA virus. It belongs to the genus beta coronavirus and subfamily orthocoronavirinae(Wu, Chen and Chan, 2020). On March 11th ,2020 the world health organisation declared COVID-19 as a global pandemic as it had spread to 18 countries with 4 countries reporting human to human transmission (Cascella*et al.,* 2020). It was found out that the infection mainly spreads from person to person via respiratory droplets and physical contact. The medical incubation time of this virus was found to be 5 days (Licciardi*et al.,* 2020). The common symptoms that were reported are fever ,cough , chest tightness ,and breathlessness . The median time from first symptoms to acute respiratory distress syndrome occurs within 8 days (Singhal, 2020). For time being a drug known as hydroxychloroquine at a concentration of 10 micro milligrams was used to inhibit SARS-COV-2 ‘s viral replication (Zhou, Dai and Tong, 2020).Nanotechnology uses nanoparticles that are less than 100nm in dimension to diagnose and treat microorganisms like SARS-COV-2 (Wu *et al.*, 2019),(Ke*et al.*, 2019).

Due to closure of schools and colleges, students are facing physical and mental health problems. Particularly adolescents' lifestyle behaviours, such as physical activity and gaming have been drastically impacted due to COVID-19 pandemic. Reduced physical activity and prolonged sedentary behaviour are linked to both negative physical and mental health outcomes which leads to many problems such as: loss of muscular and cardiorespiratory fitness, weight gain, psychosocial problems and poor academic achievements (Xiang, Zhang and Kuwahara, 2020),(Shukri *et al.*, 2016). Due to lack of physical activity adolescents are also prone to metabolic diseases like diabetes and heart diseases (Ponnulakshmi*et al.*, 2019). These problems can be overcomed by eating good food, getting enough sleep and keeping your body and mind in proper balance.

Currently a very high researches are going on cancer biology(Ma *et al.*, 2019), elucidating the antiinflammatory potential (Chen *et al.*, 2019), synthesis of nanoparticles with herbal extracts for treating various cancer (Wang *et al.*, 2019), various other in vivo studies(Gan *et al.*, 2019), analysis of cytotoxic potentials of herbal extracts(Ramya, Vishnu Priya and Gayathri, 2018; Rengasamy*et al.*, 2018),(Menon, Priya and Gayathri, 2016) and role of natural herbs in curing various ailments including liver disorders(Priya, Jainu and Mohan, 2018).All these current researches are definitely going to be advantageous and benifit the human population globally to fight against diseases. Along with these researches, spreading awareness during a pandemic is also equally important. Now the percentage of people getting affected by COVID-19 is really high, so we wanted to do research on, evaluating the knowledge and to spread awareness on COVID-19 infection.Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Ariga*et al.*, 2018; Basha, Ganapathy and Venugopalan, 2018; Hannah *et al.*, 2018; Hussainy*et al.*, 2018; Jeevanandan and

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Govindaraju, 2018; Kannan and Venugopalan, 2018; Kumar and Antony, 2018; Manohar and Sharma, 2018; Menon *et al.*, 2018; Nandakumar and Nasim, 2018; Nandhini, Babu and Mohanraj, 2018; Ravinthar and Jayalakshmi, 2018; Seppan*et al.*, 2018; Teja, Ramesh and Priya, 2018; Duraisamy*et al.*, 2019; Gheena and Ezhilarasan, 2019; Hema Shree *et al.*, 2019; Rajakeerthi and Ms, 2019; Rajendran *et al.*, 2019; Sekar*et al.*, 2019; Sharma *et al.*, 2019; Siddique *et al.*, 2019; Janani, Palanivelu and Sandhya, 2020; Johnson *et al.*, 2020; Jose, Ajitha and Subbaiyan, 2020).

Materials and method

Study Design

A survey was conducted among adolescents to evaluate their knowledge, awareness and perception to be taken to avoid COVID 19 infection.. The sample size of the study was 100. The participants did the survey voluntarily and no incentives were given to them. Ethical approval and informed consent from the participants were obtained. The study was conducted in the month of may, 2020.

Survey Instrument

The survey instrument which was a questionnaire was prepared after extensive review of the existing literature. The questionnaire was reviewed and amendments were made to improve clarity of the questions to eliminate ambiguous responses. The questionnaire consisted a total of 12 questions. The questionnaire was shared to adolescents using online survey platform.

Data Analysis

Only completed surveys were taken for analysis and the incompleted surveys were eliminated. The statistical test used is descriptive statistics. All the responses obtained were tabulated and reliability of the data was checked. The statistics done using SPSS software, chi square test was done to check the association and a p value of 0.05 was said to be statistically significant.

Results

Survey population was sufficient enough to reach a conclusion regarding the knowledge of adolescents about the precautionary measures that had to be taken during COVID-19 pandemic. This survey was conducted among adolescents who belong to the 18 age group. Out of 100 responses given 35 % were male and 65% were female. 100% of the participants were aware that COVID-19 is a mild to severe respiratory illness caused by a coronavirus. 100% participants were aware that coughing, sneezing, diarrhoea and breathlessness are the common symptoms of COVID-19. 48 out of 65 female participants and 20 out of 35 male participants have not attended public gathering events.[figure 1]. 60 out of 65 female participants and 33 out of 35 male participants wore masks in public places in order to protect themselves from

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COVID-19 infection. [figure 2]. 97% of the participants think that the best way to protect themselves from COVID-19 is by frequently washing their hands [figure 3]. 46 out of 65 female participants and 21 out of 35 male participants do not meet their friends during lockdown.[figure 4]. 97% of the participants maintain 1 meter distance when they go out to purchase their favouritestuff[figure: 5]. 53 out of 67 female participants and 28 out of 35 male participants were aware about the incubation period of COVID-19 virus.[figure:6]. 66% of the participants stated that alcohol based hand rub is proved to be effective against deadly microorganisms, 15% of the participants stated that handwash has proved to be effective against deadly microorganisms, 15% of the participants stated that soap was proved to be effective against deadly microorganisms, whereas the remaining 4% of the participants stated that hand sanitiser was proved to be effective against deadly microorganisms [figure:7]. 99% of the participants were willing to advise their elders regarding the precautionary measures that have to be followed during COVID-19 spread [figure:8]. 99% of the participants think that lockdown is essential in order to control COVID-19 spread[figure:9].

Discussion

COVID-19 pandemic has resulted in many quarantine and social isolation measures which were designed to keep individuals physically distanced from affected people. Although these initiatives are very much necessary to prevent the spread of COVID-19,this may also cause problems such as depression and loneliness among adolescents.

In the research done previously, it is revealed that Glioma is the prime cause of cancer allied mortality in adolescent people, but the current situation of isolation can cause increased loneliness and stress among adolescents. (Li *et al.*, 2020). Due to COVID-19 pandemic all the factories are shut down which automatically reduces the pollution level(Rengasamy*et al.*, 2016)(Mohan, Veeraraghavan and Jainu, 2015).In the research done previously, it is revealed that 45.4% of the participants think that wearing masks in public places prevents COVID-19 spread whereas in our study,93% of the participants think that wearing masks in public places prevents COVID-19 spread (Modi *et al.*, 2020). In the research done previously,it is revealed that 90% of the participants in US and UK think that washing hands and avoiding close contact with people who are sick were proved to be effective in preventing COVID-19 spread whereas in our study, 97% of the participants think that washing hands frequently helps in preventing COVID-19 spread (Geldsetzer, 2020). In the research done previously,it is revealed that 36.4% of the participants are aware that the incubation time of COVID-19 is 1-14 days whereas in our study, 81% of the participants are aware about the incubation period of COVID-19.(Bhagavathula*et al.*, 2020). In the research done previously, it is revealed that 3.6% of the participants have attended public gathering events whereas in our study 32% of the participants have attended public gathering events (Zhong *et al.*, 2020).

This survey has created an awareness among adolescents and made them understand the importance of undergoing COVID-19 testing at an earlier stage and also helps in creating awareness about the precautionary measures that has to be followed till the pandemic comes to an end.Our institution is passionate about high quality evidence based research and has

excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; VijayashreePriyadharsini, SmilineGirija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai*et al.*, 2019; Sridharan *et al.*, 2019; VijayashreePriyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)

Conclusion

Adolescents have a very good knowledge about the precautionary measures that have to be taken during COVID-19 spread. Most of the adolescents are following this lockdown seriously and are taking up all the precautionary measures that are possible to avoid infection.

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Authors contribution

DaniscaUthayasankar has done literature search,datacollection,analysis,manuscript writing. Dr.R.Gayathri helped in data verification,manuscript drafting. Dr.V.Vishnu Priya and Dr.S.Kavitha contributed to the title discussion.

Conflict of interest: None declared

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Figure Legends

Figure 1: Bar chart representing association between gender and the number of participants attending public gathering events. X axis represents gender and Y axis represents number of participants who responded 'yes' (Red) and 'no' (Blue). Females do not attend public gathering events compared to males, however, it is statistically not significant (Pearson's Chi square value = 2.917, df = 1,P value = 0.088(>0.05)).

Figure 2: Bar chart shows the association between gender and the number of participants wearing masks in public places. X axis represents gender and the Y axis represents the number of participants who responded 'yes'(Red) and 'no' (Blue). Since more females responded, the number of females wearing masks in public places were more than males, however it is statistically not significant (Pearson's Chi square value = 0.137, df = 1, p value = 0.712(>0.05)).

Figure 3: Represents the distribution of participants based on their opinion towards washing hands frequently is considered to be the best way to protect themselves from COVID-19 infection. Whereas a majority of 97% (red) of the study participants have said 'yes' and 3%(blue) of them said 'no'.

Figure 4: Bar chart shows the association between gender and the number of participants who meet their friends during lockdown. X axis represents gender and the Y axis represents the number of participants who responded 'yes' (Red) and 'no' (Blue). Females meet their friends during lockdown more than males, however, it is statistically not significant (Pearson's Chi square value = 1.193, df = 1,P value = 0.275(>0.05)).

Figure 5: Represents the distribution of participants based on their opinion towards maintaining 1 metre distance while purchasing their favouritestuff,where to this a majority of 97%(red) of participants said 'yes' and 3% (blue) of them said 'no'

Figure 6: Bar chart shows the association between gender and the number of participants who were aware about the incubation period of COVID-19. X axis represents gender and the Y axis represents the number of participants who responded 'yes' (Red) and 'no' (Blue). Since more females responded, the number of females who are aware were more than males, however it is statistically not significant (Pearson's Chi square value = 0.035, df = 1, P value = 0.852(>0.05)).

Figure 7: Represents the distribution of participants based on their opinion towards effectiveness against deadly microorganisms,where to this a majority of 66%(blue) of participants think that alcohol based hand rub is proved to be effective against deadly

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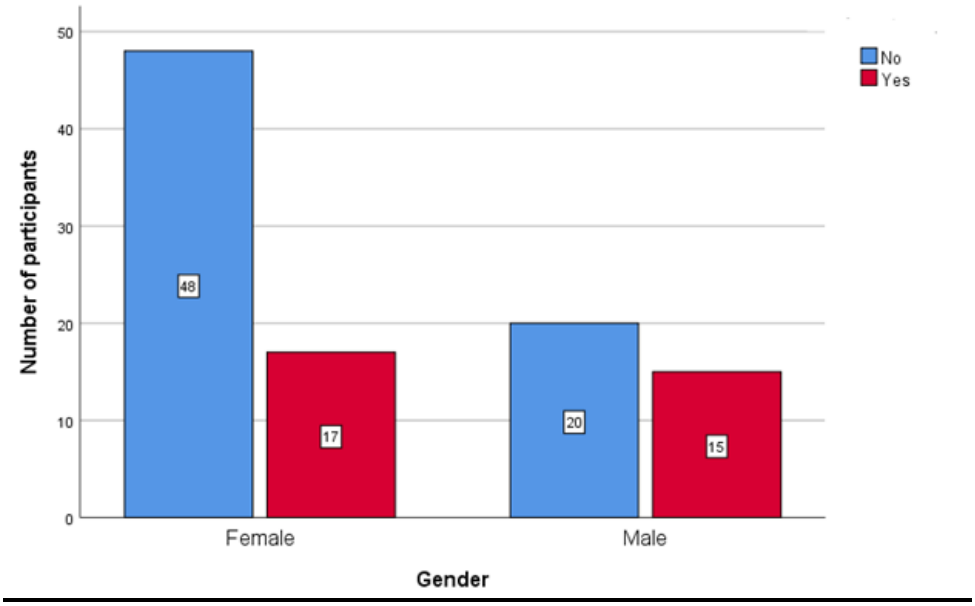
microorganisms,15% (green) of the participants think that hand wash is proved to be effective against deadly microorganisms,15% (orange) of the participants think that soap is proved to be effective against deadly microorganisms and 4%(red) of the participants think that hand sanitiser is proved to be effective against deadly microorganisms.

Figure 8: Represents the distribution of participants based on their opinion towards advising elders regarding the precautionary measures that has to be followed during COVID-19 pandemic. where to this a majority of 99%(red) of participants said 'yes' and 1% (blue) of them said 'no'.

Figure 9:Represents the distribution of participants based on their opinion towards lockdown. where a majority of 99%(red) of participants said 'yes' and 1% (blue) of them said 'no'.



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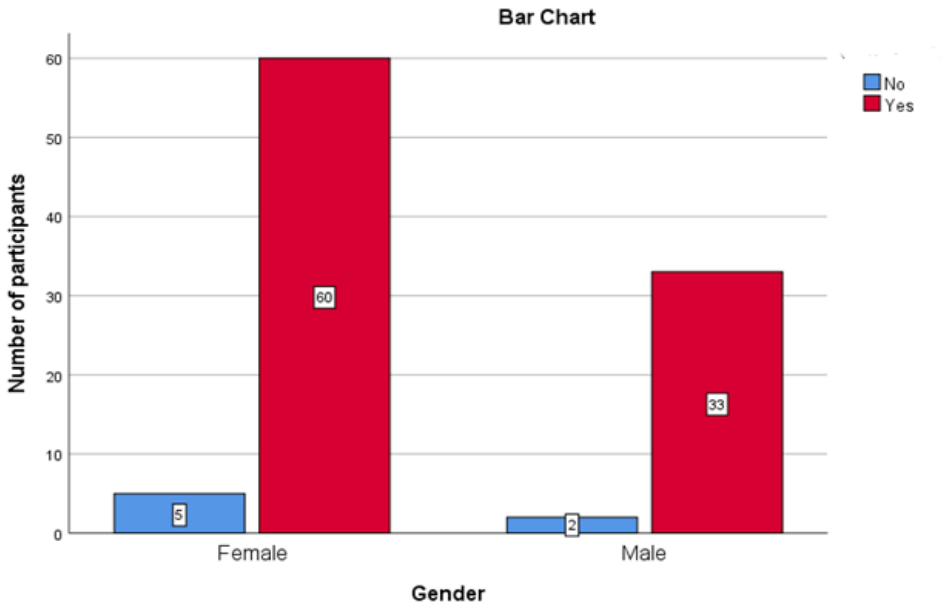

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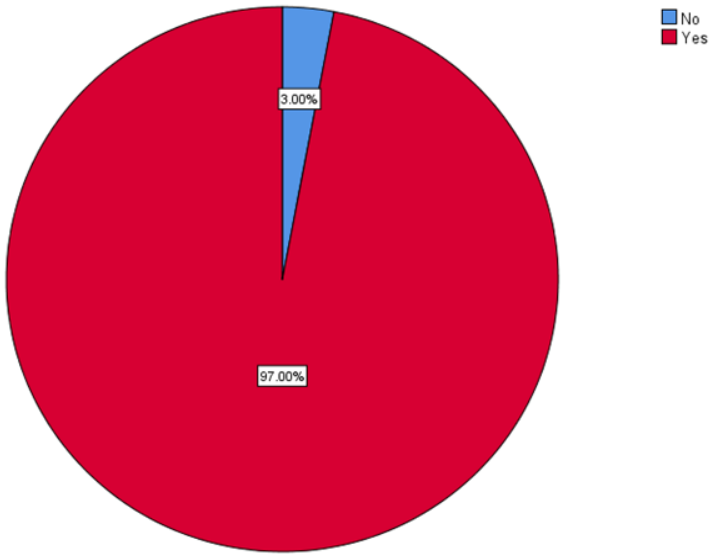

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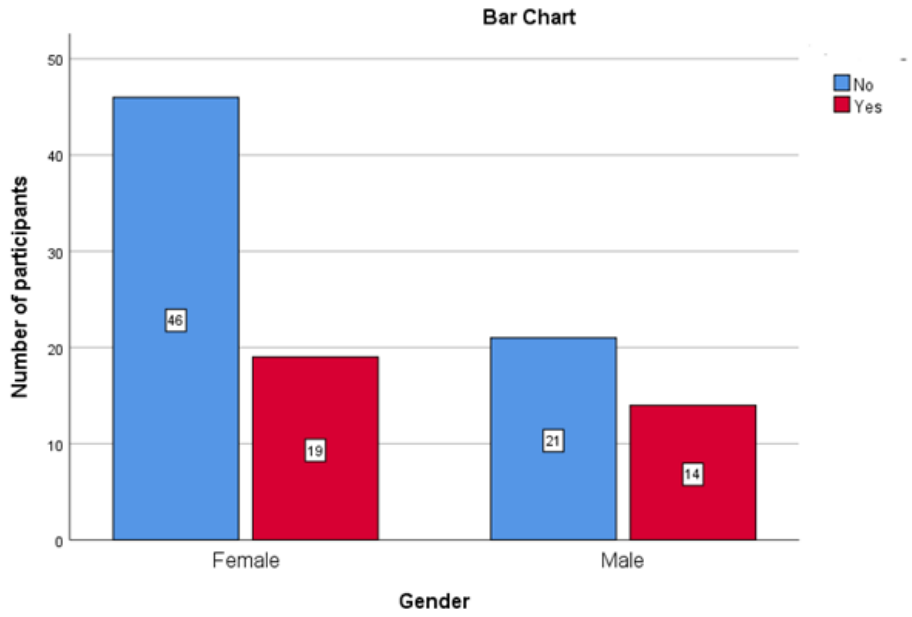

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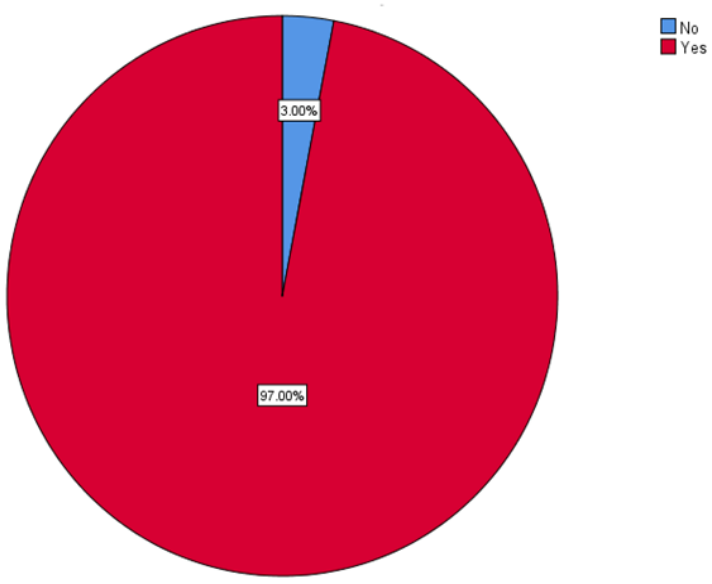

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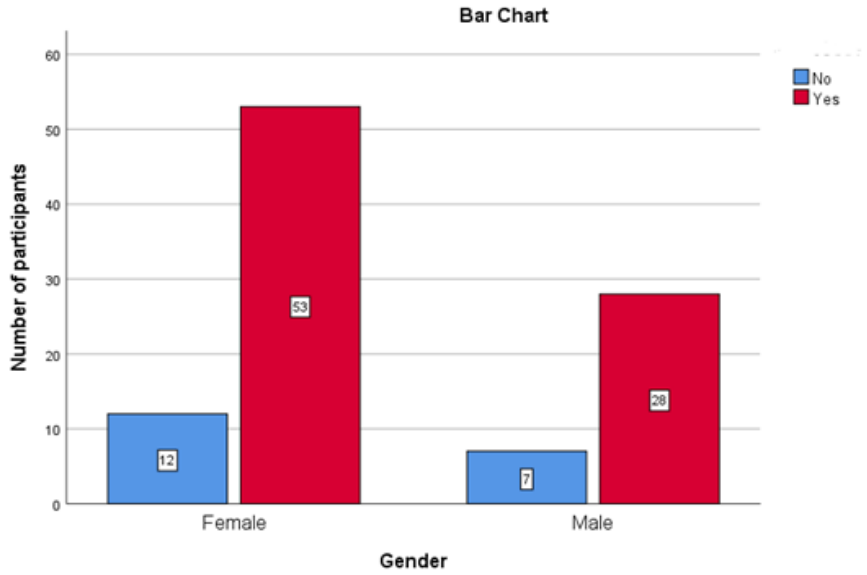

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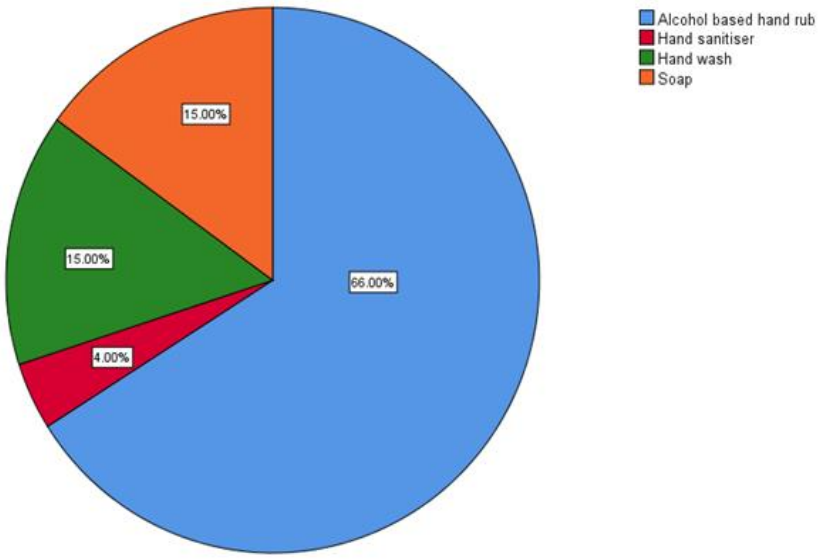

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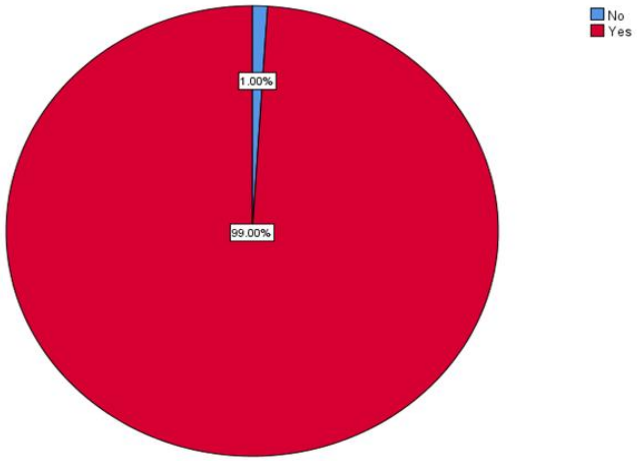

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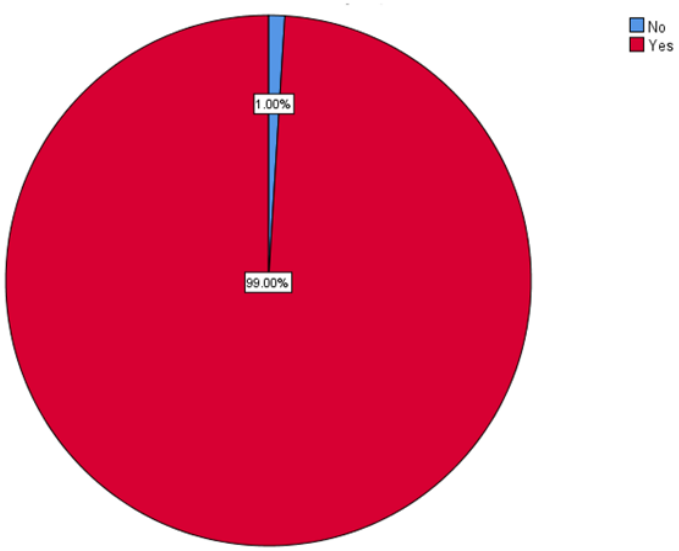

Figure 9: Represents the distribution of participants based on their opinion towards whether lockdown is essential, where to this a majority of 99%(red) of participants said ‘yes’ and 1% (blue) of them said ‘no’.