A Study on the Knowledge, Attitudes, and Practices among Adult Filipinos on Wearing Proper Personal Protective Equipment in Metro Manila during the COVID-19 Pandemic

Shaina C. Co [1], Paula Emerald P. Davantes[1], Maria Patricia B. Estacio[1], Francesca Y. Galope[1], Kiel Mari C. Ilocario[1], Kathleen Alissa D. Jayme[1], Jestyn Asa A. Pabalate[1], Clarenz Sarit M. Concepcion[2]

[1]Student, Department of Medical Technology, University of Santo Tomas, Manila, Philippines.

[2]Instructor, Department of Medical Technology, University of Santo Tomas, Manila, Philippines.

Corresponding Author: kaigalope@gmail.com

Abstract: - As the coronavirus (COVID-19) pandemic continues to progress, one efficient means to prevent transmission is wearing the proper personal protective equipment (PPE). Through analyzing the patterns in behavior, people can deal with the consensus of COVID-19. This study aims to determine the knowledge, attitudes, and practices on using proper personal protective equipment (PPE) among adult Filipinos living in Metro Manila during the COVID-19 pandemic. This research specifically targets to describe the socio-demographic characteristics of adult Filipinos (18-60 years of age) in Metro Manila, to determine their knowledge, attitude and practices and to assess the association of the socio-demographic profile with the knowledge, attitude and practices of adult Filipinos in Metro Manila. The research was done by obtaining data through an online survey, which was distributed, to 400 adult Filipinos in Metro Manila. The tests used for this research include descriptive statistics, ANOVA, and Chi-square tests to analyze and summarize the data to determine the knowledge, attitudes, and practices of individuals in response to the COVID-19 pandemic. Out of the 11 questions for knowledge, the majority only got two questions incorrect indicating that the majority are well aware of the common ways that the virus can be transmitted. Likewise, most of the respondents had similar attitudes and practices towards the use of PPE. In conclusion, adult Filipinos living in Metro Manila during the COVID-19 pandemic possess knowledge about the use of PPE and their attitudes and practices towards its use varies depending on the circumstances surrounding it. The knowledge and attitude of adult Filipinos on using proper PPE is not significantly associated with their socio-demographic profile while their practices show significant association.

Key Words: — *COVID-19, personal protective equipment, knowledge, attitude, practices.*

I. INTRODUCTION

As the coronavirus (COVID-19) pandemic continues to progress, one efficient means to prevent transmission is wearing the proper personal protective equipment (PPE). With the current uncertainty of treatment, this poses a risk with how people need to be cautious within their environment (Gordon & Thomson, 2020).

Through analyzing the patterns in behavior, people can deal with the overall consensus of COVID-19. By evaluating the knowledge and awareness of Filipinos towards the wearing of various PPE, it will be more specific to the needs of the people (Ong & Vallejo, 2020).

The use of PPE, particularly the utilization of nose and mouth protection as a preventive measure against infectious diseases, has been present long throughout history. The earliest record of this was during the bubonic plague of the middle Ages. People wore beak-like masks filled with clove and cinnamon against miasma, a suspected causative agent of causing the illness. In the 1800s, scientific discoveries continued to emerge on

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bacteriology, antisepsis, and hygiene by Louis Pasteur, Joseph Lister, Carl Flugge, Theodor Billroth, and Johannes von Mikulicz. These gave rise to consciousness with sanitation and utilization of facemasks during medical procedures in the 1900s (Matuschek et al., 2020). As years passed, people developed highly functional facemasks to reach their maximum potential as protective equipment.

Although PPE is commonly seen in healthcare settings, it is also available for commercial use. Numerous Asian countries deem wearing masks to be a social practice that shows care and respect for others' health. Many consider latent sneezing or coughing to be rude. The sick wear them in courtesy of not affecting those around them while the healthy use them to minimize the risk of catching a disease (Burgess and Horii, 2012). In a local perspective, only individuals within the age range 18-60 years old were permitted to go out within the given curfew during the implemented quarantine in Metro Manila. Anyone below or above the said ages were to remain at home (Jalea, 2021).

The perception of Filipinos on wearing PPE and its effectiveness would impact their decision to comply with appropriate wearing protocols. Through their decision, it reflects the methods of how information is spread about the proper COVID-19 preventions. It also helps people become knowledgeable about interventions needed given the severity of the virus at a low-cost approach (Dietrich et al., 2020). Understanding the habits of Filipinos on wearing PPE can provide awareness of the appropriate procedure of wearing PPEs. According to the World Health Organization (WHO), it includes the proper PPE, donning, doffing, and disposing of it (WHO, 2020).

This quantitative research study will be necessary for understanding the behavior and possible areas for improvement on Filipinos' use of PPEs. The research may help create a plan of action on whether there should be corrections needed on the PPE usage and modifications on other areas can be further enforced.

This study aims to determine the knowledge, attitudes, and practices on using proper personal protective equipment (PPE) among adult Filipinos living in Metro Manila during the COVID-19 pandemic. Specifically, this study sought to answer the following objectives: (1) To describe the socio-demographic characteristics of adult Filipinos in Metro Manila (2) To determine the knowledge on using proper PPE of the adult Filipinos in Metro Manila (3) To determine the attitude on using proper PPE of the adult Filipinos in Metro Manila (4) To determine the practices on using proper PPE of the adult Filipinos in Metro Manila (5) To assess the association of the socio-demographic profile with the knowledge, attitude and practices of adult Filipinos in Metro Manila.

1.1 Significance of the Study

This study aims to further investigate the strengths and weaknesses in Filipinos' habits of wearing personal protective equipment. Analyzing the population of Metro Manila's knowledge, attitudes, and practices can help give an insight on specific aspects that can be improved in raising awareness. These points of improvement can then eventually prevent further spread of diseases once the population is aware of the importance and effectiveness of wearing specific personal protective equipment amidst the COVID-19 pandemic.

II. METHODOLOGY

2.1 Research Design

This research used a descriptive quantitative design that involved analyzing data from a population at a specific time to observe a particular variable. Online questionnaires were used for data collection. Afterwards descriptive statistics, ANOVA, and Chi-square test were used to analyze and summarize the data to determine the knowledge, attitudes, and practices of individuals in response to the COVID-19 pandemic.

2.2 Subjects and Study Site

The researchers utilized purposive sampling to choose the respective adult Filipinos residing in Metro Manila. The respondents that met the said criteria have answered the survey regarding their knowledge, attitudes, and practices with regards to the use of PPE in the COVID-19 pandemic. This sampling technique was used online to decide the target individuals who are to respond to the survey.

A total of 400 participants, calculated with the formula of Slovin's formula, were selected as the respondents, with a 5% margin or error and a 95% confidence level. The research was conducted during the months of April to May. The questionnaire was placed in Google Forms and the link shared on Facebook, opened for the general public to answer. The

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questionnaire has an objective portion which addresses the knowledge of the participants. This objective portion has been adapted with permission from various studies entitled Knowledge, Attitude, and Practices of Healthcare Workers Regarding the Use of Face Mask to Limit the Spread of the New Coronavirus Disease (COVID-19) (Kumar et al., 2020), Consumers and COVID-19: Survey Results on Mask-Wearing Behaviors and Beliefs (Dietrich et al., 2020), and Knowledge, Attitudes and Practices (KAP) related to the Pandemic (H1N1) 2009 among Chinese General Population: a Telephone Survey (Lin et al., 2011). The survey also consists of a subjective portion to help analyze the participants' attitudes and practices. The expected participants for this research would have an age range of 18-60 years old.

2.3 Inclusion and Exclusion Criteria

The inclusion criteria for the 400 individuals chosen included being a Filipino who is currently living in the Philippines during the COVID-19 pandemic. The individual should also be within the age group of 18-60 years old. Additionally, the individuals should be residing in Metro Manila as this was the research locale. Consent forms should be agreed upon by the individual before proceeding to the survey questionnaire.

As for the exclusion criteria, individuals beyond the age group and those who were unable to go out of their homes were not included as the participants. Additionally, other exclusion criteria included the individuals who disagreed with the consent form, or those with no internet connection that was stable enough to answer the researchers' survey.

2.4 Data Measure/Instrumentation

The questionnaire used Google Forms as the tool to gather the data. The questionnaire consisted of four parts and had a total number of 33 questions. The first part included questions about the socio-demographic characteristics of the respondent. The other three parts assessed the knowledge, attitudes, and practices of adult Filipinos living in Metro Manila about wearing PPE during the COVID-19 pandemic. The majority of the questions provided in the questionnaire were all answered using a yes, no, or sometimes basis. Some questions required the respondents to choose the correct answer from the given choices based on their knowledge of the topic.

The socio-demographic characteristics gathered data relating to the respondents' age, gender, highest educational attainment, and economic status. This helped the researchers correlate their results to each socio-demographic characteristic's knowledge, attitudes, and practices in wearing PPE. The second part was about knowledge of the adult Filipinos on the proper use of PPEs, which included their familiarity with the PPE and their significance in the preventive measures of COVID-19 transmission. The third part was the attitudes of the adult Filipinos towards the use of PPE during the pandemic, which included their behavior, such as hostility and dependability, in various situations. The last part was the assessment of the practice of PPEs, which included their habits of wearing PPE and the circumstances regarding that.

2.5 Data Gathering Procedure

The researchers used an online survey patterned after previous similar research. This method was the most ideal given the current situation since face-to-face interviews cannot be conducted due to the on-going pandemic and its restrictions. An online questionnaire was created through Google Forms and the link was publicized through means of a Facebook poster and shared with various people on the media platform. The questionnaire assessed the knowledge, attitudes, and practices of the respondents. Before giving the questionnaire, the researchers provided a letter of consent to the respondents. The letter assured the confidentiality of the responses and informed them of the research purpose. Once the researchers have collected the responses, they thoroughly analyzed the data by calculating the appropriate statistics and created graphs that summarize the trends in behavior and their knowledge on wearing PPEs during the COVID-19 pandemic. With this, the researchers designed a thorough way to improve PPE practices.

2.6 Ethical Consideration

The study was granted ethical approval by the University of Santo Tomas, Faculty of Pharmacy Research Ethics Committee. With an online platform, the researchers required informed consent from the participants. The researchers beforehand informed the participants of the purpose, methods, possible outcomes, and other requirements. The researchers respect the participants' decision if they would choose to decline from taking part in the survey. With this, the information that the participants agreed to give for the study was held with the utmost confidentiality. The study required information regarding their practices during COVID-19, which

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may be sensitive for some. Therefore, the researchers did not disclose any names in reports or publications, and solely use the data for research purposes. Access to the files was given only to the researchers, advisers, and ethics committee for verification of data. The data is password protected and securely kept in the data drive for only one year. Lastly, the researchers would like to report that there were no risks or adverse events that took place while gathering the data.

2.7 Data Analysis

After obtaining the necessary data needed for the research, the researchers sought advice from a professional statistician about the statistical analysis appropriate for the study and gave him the data to be quantitatively analyzed. The results were tallied and analyzed with descriptive statistics, and inferential statistics.

Frequency count was used to describe the attitude and practice of the adult Filipinos in using PPEs thus answering research objectives, 3 and 4.

Mean was used to describe the knowledge of the adult Filipinos in using PPEs thus answering research objective 2.

Independent t-test was used to determine if there is a significant difference between the knowledge of male and females in using PPE. While ANOVA: Single Factor was used to determine if there is a significant difference between the knowledge of adult Filipinos based on their economic status, age group, and educational background. Chi-square test was also used to determine the association between practice and attitude to sex, educational background, economic status, and age group. Independent t-test, ANOVA: Single Factor, and Chi-square test were all utilized to answer research objective 5.

III. RESULTS AND DISCUSSION

3.1 Existing knowledge on using PPE of the adult Filipinos in Metro Manila (Table 2)

The WHO warned that COVID-19 has the ability to spread mainly between people who are in close contact with each other, typically within 1 metre (WHO, 2020). Majority of the respondents were able to identify such actions that can put them or others at risk of COVID-19. Personal protective equipment (PPE) such as face masks serve as a barrier between the mouth and nose of the wearer and potential contaminants in the immediate environment. The WHO advised that the incorrect use and disposal of masks or PPEs may increase the rate of transmission and those wearing them are responsible for proper usage of such protective equipment (WHO, 2020). Most respondents were aware of the side of the mask that protects against airborne particles. A point of confusion among the respondents is the length of time one can use a single mask. Bacterial filtration efficiency is a measurement of a respirator material's resistance to penetration of bacteria or viruses. The Centers for Disease Control and Prevention (CDC) recommended that the most effective BFE for masks during the pandemic should be greater than or equal to 95% this includes PAPR, N95 masks and surgical masks (Forouzandeh et al., 2021). Majority of the respondents showed that they are knowledgeable on proper wearing of masks specifically on "what should it cover " and the purpose of the metal strip. The metal strip maximizes the fit of the mask to the user's nose making sure that there are little to no pathways that airborne particles can pass (Asadi, 2020). Respondents were also aware of the most effective types of mask that's to be used during the pandemic. N95 respirators are tight-fitting respirators that filter out at least 95% of particles in the air and when well fitted it is able to filter out bacteria and viruses making it the ideal mask to be worn, according to the CDC (Chughtai, 2020). Respondents showed awareness that cloth masks are not as effective as surgical masks. The filtration effectiveness of cloth masks is generally lower than that of medical masks and respirators; however, cloth masks may provide some protection if well designed and used correctly.

3.2 Attitudes of the adult Filipinos in Metro Manila towards the use of PPE (Table 3)

Majority of adult Filipinos in Metro Manila (90.5%) believe in the facemasks' effectiveness. Masks are cheap and cause little disruption in daily activities (Alao et al., 2020). Likewise, 362 of respondents (90.5%) feel comfortable when other people are wearing masks. Wearing facemasks serves as a PPE against potential contaminants in the immediate environment (Burgess, & Horrii, 2012). Most respondents (80%) are more likely to follow and uphold social distancing practices. It can be inferred that the bulk of Filipinos are most likely to follow social distancing due to the Philippines Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF-EID) implementing distancing of at least one meter last March 13, 2020 (Montemayor, 2020). Due to an increase in demand for facemasks, some people have

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resorted to the use of cloth facemasks. Aside from the insufficient supply, it is also cheaper and more accessible for people to use as a protection (Matuschek et al., 2020). Furthermore, 326 of the respondents (81.5%) had spent more money on PPEs than normal during this pandemic. Majority of the respondents (83.25%) attend social gatherings while wearing proper Personal Protective Equipment. This is as mandated by the IATF-EID Memorandum Resolution No. 18 (IATF-EID, 2020) which requires use of facemasks and face shields in public. This is evidenced by the researchers' data presenting the bulk of adult Filipinos in Metro Manila adhering to the guidelines of wearing PPEs in public. Only a minority of Filipinos show deviant behavior of attending social gatherings without PPE, with a definite yes (10%), and sometimes (6.25%).

3.3 Current practices of the adult Filipinos in Metro Manila towards the use of PPE (Table 4)

PPE serves as a barrier for COVID-19 transmission. With this situation, the lowest probability for outward transmission between a healthy individual and a possible carrier is if both are wearing PPE (WHO, 2020). In the Philippine context, there has been an improvement in abiding by the rules of wearing PPE in public (Jennings, 2021). Cases of COVID-19 were rapidly increasing in June of 2020; however, citizens have become more cautious and willing to wear masks. Although face shields fail to protect against small particles from entering the body (Dizik, 2020), they are recommended to prevent an individual from touching their eyes, nose and mouth which can help in controlling the virus (Sleat & Wain, 2020). The "Tugon ng Masa" survey by OCTA Research also revealed that 83% of their respondents wear face shields when going out in public. In comparison to facemasks, there are only a selective number of people who always wear face shields at only 61% (Baclig, 2021). Moreover, the WHO warned that severe and mounting disruption to the global supply of PPE is caused by rising demand, panic buying, hoarding or misuse present in the public (WHO, 2020). Other causes for the shortage include lack of raw materials and machines, geographic concentration of manufacturers, export bans, transport constraints profiteering and quarantine measures (Park et al., 2020). Majority of respondents (57%) have reported that they have not experienced any PPE shortages. However, it is important to note that 31.5% of respondents are experiencing shortages when it comes to PPEs and for 11.5% respondents they on occasion have struggled to procure the PPEs needed. According

to the IATF-EID resolution no. 18 series of 2020 (IATF-EID, 2020), face masks and face shields are mandatory for places under ECQ making the population of respondents unable to go and attend to matters outside their residential area. In an urbanized city like Metro Manila, concentrations of ambient air pollutants levels continuously rise. This increases the risk of acute and chronic respiratory problems (Laumbach, et al., 2015; WHO, 2018). There are a total of 65% of the respondents who limit their exposure to air particles. However, 24.25% of respondents are more exposed to air particles due to their field of work, activities and location. There are alternative approaches to reduce exposure to air particles and one of these is with the proper use of facemasks and face shields. These personal interventions can mitigate health risks from air particles. A total of 128 respondents are prompted to wear PPEs in relation to their exposure with air particles. Meanwhile, 6 of the respondents (1.5%) do not feel the need to wear PPEs when exposed to air particles. 14 of the respondents (3.5%) sometimes wear PPEs when exposed to air particles. Personal action to reduce exposure to air particles are said to have varying degrees of effectiveness due to the difficulty in evaluating the effects of personal interventions (Laumbach, et al., 2015). Additionally, 252 of the respondents (63%) answered that it is not applicable because they avoid the exposure to air particles. Masks should completely cover the nose and mouth and fit snugly against the sides of the face without gaps in public settings. WHO prescribed the public to wear face shields that "completely cover the sides and length of the face" (Jazul, 2020). COVID-19 is transmitted by respiratory droplets; hence, masks function as a simple barrier to prevent transmission.

3.4 Association of sex to the knowledge regarding the use of PPE (Table 5.1)

Results revealed both male and female exhibited the same knowledge in using PPEs ($\bar{x}$ = 11.63, SD = 1.547, $\bar{x}$ = 11.96, SD = 1.657), P(259) = 0.05025 > 0.05. The finding suggests that knowledge of using PPEs is not significantly associated to sex. This is in contrast to a research of Pinchoff, et al. (2020) where women are more likely to be less knowledgeable on the main symptoms of COVID-19 and the preventive measures to be taken to avoid transmission of the disease.

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3.5 Association of economic status to the knowledge regarding the use of PPE (Table 5.3)

The results in Table 5.3 revealed that the knowledge of the respondents with an economic status from 40,000 up to 250,000 and above is not significantly different from each group, $F_{(4,397)} = 0.105843$, $p = 0.980447$. The findings suggest that knowledge of using PPEs is not significantly associated with economic status. In comparison to a study by Lau et. al. (2020), they found that Filipinos with lower income are knowledgeable and up to date about COVID-19 transmission but lack familiarity with measures of prevention. Overall, it can still be said that they were aware about the spread of COVID-19 with the majority of the respondents being informed about the proper methods (Lau et. al., 2020). There is a correlation between the knowledge of these low income households to their education and access to technology stating that those who have a means for communication are more likely to to be aware of both COVID-19 prevention and transmission. Similarly the research of Kumar et al. (2020) show that healthcare workers who are expected to be more knowledgeable have shown poor expertise on the use of PPE.

3.6 Association of age to the knowledge regarding the use of PPE (Table 5.3)

The results revealed that the knowledge of the respondents with an age group from 18-24, 25-54 and 55-60 years old is not significantly different from each group, $F_{(2,397)} = 0.02444$, $p = 0.975856$. The findings suggest that knowledge of using PPEs is not significantly associated with age. This contrast to the research of Alao et al. (2020), wherein the findings concluded that the only predictors of PPE was age. It was observed that the low knowledge about PPE among healthcare workers is similar to a report by Wang et al. (2020), in the Hubei province of China. The younger age bracket of the respondents are more knowledgeable about PPE than the older age bracket. However, it was also reported in the study that there were unexpected corroborates in the inverse relationship of increasing years of experience and knowledge. The older age bracket of healthcare workers could have nonclinical responsibility, such as managerial duties, which may suggest the disparity observed among the age groups.

3.7 Association of educational background to the knowledge regarding the use of PPE (Table 5.3)

The results revealed that the knowledge of respondents based on their educational background is not significantly different from each group, $F_{(2,394)} = 0.84909$, $p = 0.4286$. The findings suggest that the knowledge of using PPEs is not significantly associated with educational background. This coincides with a study by Lau et al. (2020) where the knowledge of people with higher levels of education about the proper methods of prevention is not significantly different from those in lower levels. Additionally, research by Kumar et al. (2020) shows that even healthcare workers, who are most likely to have greater knowledge, scored moderate to poor on the topic of proper usage of personal protective equipment.

3.8 Association of sex to the attitudes regarding the use of PPE (Table 5.5)

The results revealed that the attitude of the respondents based on their sex is not significantly different from each group, $X^2 = 0.969^a$, $df = 2$, $p > 0.05$. The findings suggest that sex is not associated with the attitude of the respondents in regards to the use of PPE. In contrast, a research entitled "Gender differences in COVID-19 attitudes and behavior: Panel evidence from eight countries" (Galasso et al., 2020) concluded that among eight countries, females show more awareness and compliance to the rules set by the government. There are several factors to take into consideration, such as government rules and regulations varying from country to country, the severity of the pandemic, employment status of the respondents, past experience with COVID-19, and variables that may make the attitude consistent within male and females in the Philippine setting. Though, how such factors affect the consistency of attitudes amongst the sexes is beyond the scope of the research.

3.9 Association of economic status to the attitudes regarding the use of PPE (Table 5.5)

The results revealed that the attitude of the respondents based on their economic status is not significantly significantly associated with each group, $X^2 = 0.414^a$, $df = 8$, $p > 0.05$. The findings suggest that the economic status is not associated with the attitude of the respondents in regards to the use of PPE. In contrast, the study performed by Azlan, Hamzah, Sern, Ayub, & Mohamad (2020) showed a significant score for the attitude in terms of the respondents' occupation. These results were most likely due to the respondents working closely with the government to regulate the spread of the virus.

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3.10 Association of age to the attitude regarding the use of PPE (Table 5.5)

The results revealed that the attitude of the respondents based on their age group is not significantly associated with each group, $X^2 = 6.914^a$, df = 4, p > 0.05. The findings suggest that the age group is not associated with the attitude of the respondents in regards to the use of PPE. This is in contrast to the study by Dietrich et. al. (2020), wherein the use of PPE is dependent on the respondents' age and perceived mask efficacy. Older respondents are observed to be more adherent in mask wearing and perceive the use of masks as effective protection against coronavirus (Dietrich et al., 2020). It also does not agree with the study by Azlan et. al. (2020) which found that the wearing of face masks was found to be significantly associated with the age group. The findings presented that respondents between the ages of 18 and 49 showed higher percentages in wearing face masks when leaving the house, whereas those above the age of 50 were less likely to wear a face mask.

3.11 Association of educational background to the attitude regarding the use of PPE (Table 5.5)

The results revealed that the attitude of the respondents based on their educational background is not significantly associated with each group, $X^2 = 0.639^a$, df = 4, p>0.05. The findings suggest that the educational background is not associated with the attitude of the respondents in regards to the use of PPE. Contrary to a research by Wake (2020), factors including educational levels are associated with good attitudes regarding COVID-19 as individuals who had higher education or greater knowledge of the disease view preventive measures in a more positive light. Another research by Alves, et. al. (2020) reveals that students taking up bachelor's or master's degrees also display a positive attitude for precautionary measures against COVID.

3.12 Association of sex to the practice regarding the use of PPE (Table 5.7)

The results revealed that the practice of the respondents based on their sex is not significant, $X^2 = 5.656^a$, df = 3, p > 0.05. The findings suggest that sex is not associated with the respondents' level of practice in proper usage of PPEs. This result is in contrast to the research of Galasso et al. (2020) which concluded amongst eight countries surveyed, the highest compliance to COVID-19 rules and practices is observed

amongst the female population. It was found that the women in these countries observed practices such as washing hands more often, coughing into one's elbow, ending a greeting by shaking hands or hugging, avoiding crowded places, keeping physical distance from others, staying at home, and stopping visits to friends more strictly when compared to men (Glasso et al., 2020).

3.13 Association of economic status to the practice regarding the use of PPE (Table 5.7)

The results of this study revealed that the practice of the respondents based on their economic status exhibited highly not significant, $X^2 = 15.778^a$, df = 12, p >0.05. The findings suggest that the economic status is not associated with the respondents' level of practice in proper usage of PPEs. This offers a contrasting explanation of results in the study of Lau et al. (2020) except that their study focuses more on knowledge, attitudes, and practices toward COVID-19 itself rather than the use of PPE. In the results of their study, low-income individuals in the Philippines have poor practices in preventing spread of COVID-19. Shortage brought about by panic buying caused PPEs to become scarce in the Philippines, limiting the supply made available for people to wear (WHO, 2020). These practices are due to the respondents living in poverty and having minimum access to information and healthcare (Lau, et al., 2020).

3.14 Association of age to the practice regarding the use of PPE (Table 5.7)

The results revealed that the practice of the respondents based on their age group is significantly associated with each group, $X^2 = 54.154^a$, df = 6, p < 0.05. The findings suggest that the age is associated with the respondents' level of practice in proper usage of PPEs. This agrees with the study by Hossain et al. (2021) which assessed the knowledge, attitude, and practice of PPEs among health care workers (HCWs) presented that younger age was associated with good practice.

3.15 Association of educational background to the practice regarding the use of PPE (Table 5.7)

The results revealed that the practice of the respondents based on their educational background is significantly associated, $X^2 = 21.893^a$, df = 6, p < 0.05. The findings suggest that the educational background is associated with the respondents' level of practice in proper usage of PPEs.

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Many studies from across the world had similar results wherein those who cannot read nor write and have poor knowledge are associated with poor practice, while those with higher levels of education and have high knowledge about COVID practice precautionary measures more (Wake, 2020).

Table.1. Socio-demographic Profile of Adult Filipinos in Metro Manila

Variable	Frequency (N=400)	Percentage (%)
Sex		
Male	128	32%
Female	272	68%
Economic Status		
Under ₱ 40,000	80	20%
₱ 40,000 - ₱ 59, 999	51	12.75%
₱ 60,000 - ₱ 99,990	69	17.25%
₱ 100,000 - ₱ 249,000	104	26%
₱ 250, 000 and above	96	24%
Age		
18 - 24	297	74.25%
25 - 54	81	20.25%
55 - 60	22	5.5%
Educational Background		
Primary Education	13	3.25%
Secondary Education	133	33.25%
Tertiary Education	254	63.5%

Table.2. Knowledge of Adult Filipinos in Metro Manila on Using PPE

Knowledge	Frequency (N=400)	Percentage (%)

	Frequency (N=400)	Percentage (%)
Knowledge 1. **Can COVID-19 be transmitted (caught or spread) through:**		
A. Coughing and sneezing? (correct)	397	99.25
B. Face to face talking? (correct)	373	93.25
C. Handshakes or hugs? (correct)	346	86.5
D. Touching an item someone else touched? (correct)	316	79
E. Sharing and eating from the same dish? (correct)	351	87.75
Knowledge 2. **Which is the correct way of using surgical face masks to protect against COVID-19?**		
A. White side facing out	24	6
B. White side facing in (correct)	376	94
Knowledge 3. **How many layers are there in a surgical mask?**		
A. Two	40	10
B. Three (correct)	348	87
C. Four	12	3
Knowledge 4. **Can wearing a surgical mask protect you from COVID-19?**		
A. Yes (correct)	367	91.75
B. No	33	8.25
Knowledge 5. **Which layer acts as a filter media barrier?**		
A. First layer	100	25
B. Middle layer (correct)	277	69.25
C. Last layer	23	5.75

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Knowledge 6. Which type of masks actually protect against COVID-19?		
A. 95% BFE (Bacterial Filtration Efficiency) and PFE (Particulate Filtration Efficiency) (correct)	170	42.5
B. 97% BFE (Bacterial Filtration Efficiency) and PFE (Particulate Filtration Efficiency)	55	13.75
C. 91% BFE (Bacterial Filtration Efficiency) and PFE (Particulate Filtration Efficiency)	11	2.75
D. 99% BFE (Bacterial Filtration Efficiency) and PFE (Particulate Filtration Efficiency)	164	41
Knowledge 7. How long can you wear a surgical mask?		
A. 8 hours (correct)	179	44.75
B. 4 hours	194	48.5
C. 2 hours	20	5
D. 1 hour	7	1.75
Knowledge 8. For proper wearing, to which extent the surgical mask should cover?		
A. Nose only	1	0.25
B. Nose and mouth	34	8.5
C. Nose, mouth, and chin (correct)	365	91.25
Knowledge 9. What is the purpose of the metal strip on a surgical mask		
A. No purpose	0	0
B. To fit on the nose (correct)	399	99.75
C. To fit on the chin	1	0.25

Knowledge 10. What is the most effective face protective equipment?		
A. Cloth mask	2	0.5
B. Surgical mask/KN95 (correct)	363	90.75
C. Face shield	35	8.75
Knowledge 11. Is the cloth facial mask as effective as a regular surgical facial mask (if not available)?		
A. Yes	103	25.75
B. No (Correct)	297	74.25

Table 3. Attitudes of Adult Filipinos in Metro Manila on Using PPE

Attitudes	N	Yes	No	Sometimes
Attitude 1. Do you think that masks are effective for prevention of COVID-19?		362 (90.5%)	3 (0.75%)	35 (8.75%)
Attitude 2. Do you feel comfortable when others are wearing masks?	400	362 (90.5%)	4 (1%)	34 (8.5%)
Attitude 3. Does wearing a mask make you less likely to follow social-distancing guidelines?		25 (6.25%)	320 (80%)	55 (13.75%)
Attitude 4 Have you spent more money on Personal Protective Equipment than normal this pandemic?		326 (81.5%)	46 (11.5%)	28 (7%)

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Attitude 5. Have you attended a gathering without the use of Personal Protective Equipment?		40 (10%)	333 (83.25%)	25 (6.25%)

Table.4. Current Practices of Adult Filipinos in Metro Manila on Using PPE

Practices	N	Yes	No	Sometimes	Not Applicable
Practice 1. When going out in public, do you wear the following proper protective equipment (PPE): Face mask?		399 (99.75%)	0 (0%)	1 (0.25%)	
Practice 2. When going out in public, do you wear the following proper protective equipment (PPE): Faceshield?		348 (87%)	3 (0.75%)	49 (12.25%)	
Practice 3. Have you experienced any shortage with access to PPEs such as face masks or face shields?		126 (31.5%)	228 (57%)	46 (11.5%)	
Practice 4. Have you ever reused PPE because of a shortage?		104 (26%)	264 (66%)	32 (8%)	

Practice 5. Do you keep a distance from people with influenza-like symptoms (flu/colds)?	400	382 (95.5%)	3 (0.75%)	15 (3.75%)	
Practice 6. Are you more exposed to air particles based on your daily routines?		97 (24.25%)	260 (65%)	43 (10.75%)	
Practice 7. If yes or sometimes to the previous question, does this prompt you to wear face masks and face shields for protection?		128 (32%)	6 (1.5%)	14 (3.5%)	252 (63%)
Practice 8. If there is a need to talk to someone, will you remove your mask?		4 (1%)	363 (90.75%)	33 (8.25%)	0 (0%)

Table 5.1. Analysis on the Knowledge of Adult Filipino Male and Female in Using PPE

Sex	N	Mean	SD	df	P-Value	Interpretation
Male	128	11.63	1.547	259	0.05025	Not Significant
Female	272	11.96	1.657			

Note: 0.05 level of significance

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Table.5.2. Analysis on the Knowledge of Adult Filipinos in Using PPEs Based on the Economic Status, Age and Educational Background

Variable	N	Mean	Variance
Economic Status			
Under ₱ 40,000	78	11.79487	2.1911
₱ 40,000 - ₱ 49,000	53	11.92453	3.5327
₱ 60,000 - ₱ 99,999	69	11.91304	2.4629
₱ 100,000 - ₱ 249,999	104	11.91346	2.1575
₱ 250,0000 and over	98	11.82653	3.0521
Age			
18-24 years old	296	11.8378	2.4956
25-54 years old	81	11.8642	2.5688
55-60 years old	23	11.7826	3.1779
Educational Background			
Primary	12	11.4167	1.1742
Secondary	132	11.8106	3.0249
Tertiary	253	11.9407	2.1909

Table.5.3. ANOVA Single Factor on the Knowledge of Adult Filipinos in Using PPEs Based on the Economic Status, Age and Educational Background

Source of Variance	SS	df	MS	F	P-Value	F crit
Economic Status						
Between group	1.107135	4	0.276784	0.105843	0.980447	2.394418
Within group	1038.166	397	2.615029			
Total	1039.274	401				
Age						
Between group	0.12466	2	0.0623	0.02444	0.975856	3.01845
Within group	1011.6354	397	2.5482			
Total	1011.76	399				
Educational Background						
Between group	4.1433	2	2.0716	0.8491	0.4286	3.01862
Within group	961.2925	394	2.4398			
Total	965.4358	396				

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Table 5.4. Analysis on the Attitudes of Adult Filipinos in Using PPEs Based on their Sex, Economic Status, Age and Educational Background

Variable	Yes	No	Some times	Total
Sex				
Male	363	226	51	640
Female	753	481	126	1360
Total:	1116	707	177	2000
Economic Status				
Under ₱ 40,000	223	142	35	400
₱ 40,000 - ₱ 49,000	144	90	21	255
₱ 60,000 - ₱ 99,999	191	122	32	345
₱ 100,000 - ₱ 249,999	293	181	46	520
₱ 250,0000 and over	264	173	43	480
Total:	1115	708	177	2000
Age				
18-24 years old	812	530	143	1485
25-54 years old	241	135	29	405
55-60 years old	62	43	5	110
Total:	1115	708	177	2000
Educational Background				
Primary	36	22	7	65
Secondary	376	233	56	665
Tertiary	703	453	114	1270
Total:	1115	708	177	2000

Table 5.5. Pearson Chi-Square on the Attitudes of Adult Filipinos in Using PPEs Based on their Sex, Economic Status, Age and Educational Background

Variable	Value	df	Asymp. Sig (2-sided)
Sex	0.969[a]	2	0.616
Economic Status	0.414[a]	8	1.000
Age	6.914[a]	4	0.141
Educational Background	0.639[a]	4	0.959

Table.5.6. Analysis on the Practices of Adult Filipinos in Using PPEs Based on their Sex, Economic Status, Age and Educational Background

Variable	Yes	No	Som etim es	Not Appli cable	Tota l
Sex					
Male	509	354	89	72	1024
Female	1079	773	144	180	2176
Total:	1588	1127	233	252	3200
Economic Status					
Under 40,000	320	223	57	40	640
40,000 - 49,000	201	130	41	36	408
60,000 - 99,999	275	191	35	51	552
100,000-249,999	414	300	53	65	832
250,000 and over	378	283	47	60	768
Total:	1588	1127	233	252	3200

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Age					
18-24 years old	1112	852	185	227	2376
25-54 years old	371	215	42	20	648
55-60 years old	105	60	6	5	176
Total:	1588	1127	233	252	3200
Educational Background					
Primary	55	37	7	5	104
Secondary	483	402	70	109	1064
Tertiary	1050	688	156	138	2032
Total:	1588	1127	233	252	3200

Table.5.7. Pearson Chi-Square on the Practices of Adult Filipinos in Using PPEs Based on their Sex, Economic Status, Age and Educational Background

Variable	Value	df	Asymp. Sig (2-sided)
Sex	5.656[a]	3	0.130
Economic Status	15.778[a]	12	0.202
Age	54.154[a]	6	0.000
Educational Background	21.893[a]	6	0.001

IV. CONCLUSION

Based on the results, the respondents have some knowledge and awareness about the use of PPE and varying attitudes and practices towards it. In conclusion, adult Filipinos living in Metro Manila during the COVID-19 pandemic possess knowledge about the use of PPE and their attitudes and practices towards its use vary depending on the circumstances surrounding it. Knowledge, attitude and practice is not significantly associated with the socio-demographic profile on using proper PPE among Filipinos ages 18-60 years old in Metro Manila. As such, this is an indication that the socio-demographic profile of the respondents does not correspond to the extent of their knowledge and their attitudes towards the proper use of PPEs amidst the pandemic. Economic status and sex does not show any significant association with the practice of Filipinos towards the COVID-19 pandemic, though age and educational attainment has association with their practices. Through this research, it can serve as a reference for the community, local government units, and future researchers in providing information, creating policies and developing more critical studies observing PPE usage of adult Filipinos in Metro Manila.

4.1 Recommendations

Due to limitations of the COVID-19 pandemic, this research was entirely conducted online through means of Google Forms. The researchers recommend that this study be held face-to-face so as to prevent respondents from searching up the answers or asking for help from others which would influence their response. If this study was to be held face-to-face, the researchers could have properly proctored and monitored the respondents in order to preserve the integrity of the results from the knowledge section. Moreover, with the research being under time restraint, the researchers used purposive sampling in finding respondents for the survey. If one were to conduct the research again, the researchers recommend that random cluster sampling may be done to have a more systematic and well represented respondents. Aside from this, having a longer data collection period may allow more respondents to answer the survey and thus leading to a more precise result. The researchers also observed that some respondents may be more knowledgeable about the topic due to their role in medical fields. For future studies, the researchers would suggest performing a separate study focusing on health workers to compare the results to those not in the medical field.

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4.2 Acknowledgements

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