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RESEARCH ARTICLE

Does Gender Divergence Matter? The Moderating Effect of Media Exposure on Adherence to COVID-19 Quarantine Protocol

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Abstract: This study aimed to find out if there are gender differences in how Filipinos adhere to the COVID-19 quarantine protocol. This research utilized the theory of planned behavior (TPB) as a framework. According to the TPB, the behavior to follow the COVID-19 protocol will be determined by one's attitude, subjective norms, controllability, and self-efficacy. Media was added as a moderating variable between these predictors and the behavior to follow the COVID-19 protocol. An online survey was conducted amongst 200 females and 200 males in Metro Manila. This research locale was chosen as it had the highest COVID-19 infection rate in the Philippines. The study results showed no statistical differences between gender in their compliance to quarantine protocol except for attitude and controllability. These two variables and media were significant to the adherence to the COVID-19 protocol. Further, the media moderated the relationship between attitude and adherence to the COVID-19 protocol. The results showed that media exposure, whether traditional or new, moderated the adherence to quarantine protocol in both groups. This study concludes that media can be used to encourage adherence to quarantine protocol for both genders. Thus, it is recommended that marketers design the same mass media campaign to follow the quarantine protocol for both genders.

Keywords: Gender, COVID-19, Theory of Planned Behavior

The World Health Organization (WHO, 2020) declared COVID-19 as a pandemic on March 11, 2020. To prevent the spread of COVID-19, the Philippine government declared areas in Luzon with COVID-19 infections to be placed under Enhanced Community Quarantine (ECQ) on March 16, 2020 (Prasetyo et al., 2020). This ECQ is known to be the longest lockdown in the world. Under the ECQ, Filipinos were told to

stay at home and go out only in case of emergencies such as the purchase of food and medicines. All modes of travel (air, sea, and ground) were suspended, whereas provincial borders were closed and entry bans were enforced. Only establishments that were selling essential products, such as food and medicines, were allowed to operate.

COVID-19 is a gendered crisis, with more men getting infected than women (Salva et al., 2020). There were also more male than female deaths (University of the Philippines Population Institute [UPPI] & Demographic Research and Development Foundation [DRDF], 2020). During the early part of the pandemic, there were twice as many male deaths as female deaths (UPPI & DRDF, 2020). The reason why men are more susceptible to COVID-19 can be due to their exposure outside of their homes (Garcia et al., 2020). As breadwinners, men are likely to spend more time away from home in most societies, exposing themselves to more infectious agents outside of their homes. The men that would likely be exposed would be those whose work entails domestic and foreign travel as they would be in contact with more people.

Although men go out of their homes as breadwinners, women tend to have less exposure to infectious agents outside their homes. However, their role as caregivers in their homes exposes them to those who may have COVID-19 (Garcia et al., 2020). Their work as caregivers at home is generally not monetarily compensated. Their services are rendered free for their families and relatives. Not only are women caregivers at home, but women account for 75% of the health professionals (medical doctors, nurses, midwives, dentists, pharmacists, etc.) in the Philippines (UPPI & DRDF, 2020). Sixty-five percent of those who are in the health profession are under 35 years of age. The Philippines produces a significant number of health professionals every year, but most of them migrate to other countries because of attractive salaries. In August 2020, there was a period when the health professionals called for the continuation of the lockdown because they were overwhelmed with fatigue and stress due to the deaths among their ranks.

An article on a Filipino family's experience with COVID-19 was narrated based on the feminist perspective of a single mother. This showed that the family despaired when the daughter studying in Germany contracted COVID-19 (Dicolen & Abagat, 2020). The article highlighted the mother's anguish in her inability to fulfill her caregiving role for a COVID-19 stricken daughter, but the support that the family received from relatives and friends made them readily recover. Through strong faith and a positive attitude, the mother and daughter reflected on their COVID-19 experience as a rare opportunity to be resilient (Dicolen & Abagat, 2020).

This Filipino family's story of resiliency is echoed in an immigrant family's coping experience of COVID-19 in another country. According to Datta et al. (2020), COVID-19 has affected the most vulnerable members of society, such as their family of immigrants. Throughout this COVID-19 experience, the family used frequent interaction, social distancing, and isolation. The story was told from the feminist versions of the mother and daughters. Resilience, aside from reconnection and resistance, was the family's message to cope with COVID-19 in a foreign country.

Studies have shown that women, who tend to be frailer than men, are more resilient than men (Gordon & Hubbard, 2020). According to Gordon and Hubbard (2020), women are more vulnerable to adverse health effects than men, but behavioral and social factors make them more resilient than men. Generally, women tend to have better attitudes than men in health care and, thus, tend to live longer than men (Lemaitre et al., 2020).

Not only is COVID-19 a gendered crisis with more men infected than women, but it also led to gendered encounters. Police officers and military personnel checked and monitored if residents complied with quarantine protocol in residential areas and checkpoints. This exacerbated the alleged militarization in Philippine society due to reports of "sex-for-pass" schemes (Colobong & Bautista, 2020; Tapscott, 2020). Under this scheme, it was alleged that police officers at checkpoints sexually abused women in exchange for quarantine passes (Colobong & Bautista, 2020).

The military personnel was not only at checkpoints to enforce quarantine protocol, but they were also utilized to ensure that citizens complied with wearing face masks and face shields, physical distancing, and observance of curfew. Those who were infected were advised to observe home quarantine or to isolate in hospitals. The active role of the Philippine military to enforce quarantine protocol is because the Armed Forces of the Philippines is an active member of the Inter-Agency Task Force for Emerging Infectious Disease created by Philippine President Rodrigo Duterte to minimize the spread of COVID-19 (Vallejo & Ong, 2020).

Although the military presence in checkpoints, barangays, and retail establishments was a constant reminder to Filipinos to follow the quarantine protocol, the Filipino households were experiencing economic

stress as the lockdown affected mobility and access to employment, particularly in the informal sector (UPPI & DRDF, 2020). No less than a Philippine Senator warned that the COVID-19 pandemic, which caused households to experience economic stress and physical proximity, may lead to a surge in domestic abuse. According to Senator Risa Hontiveros, Filipino women and children, who lived with their accusers, would be more vulnerable to violence (Colobong & Bautista, 2020). Data from the Philippine National Police showed a surge of cases of violence against women and children in May 2020 (Colobong & Bautista, 2020). According to Colobong and Bautista (2020), there was no particular instance that occurred during the pandemic, as some cases were allegedly perpetrated by the police.

Despite military enforcement of quarantine protocol, COVID-19 infection continued to surge. The Philippines had the highest number of confirmed cases of COVID-19 in Southeast Asia on August 17, 2020 (UPPI & DRDF, 2020). Data from the Philippine Department of Health as of January 10, 2021, showed that the number of confirmed cases reached 485,797 (Department of Health, 2021). Of this number, 262,330 or 54% were males, while 223,467 or 46% were females. Of the total number of cases, the National Capital Region topped the list with 213,274 confirmed cases, or 44% (Department of Health, 2021).

Although COVID-19 brings to the fore gender issues such as gendered encounters, more male infections than female infections, violence against women and children in homes, females as caregivers in the homes, female dominance in the healthcare system, and female resiliency, there has been little research if gender divergence matter in COVID-19 quarantine protocol adherence. There is little literature in the Philippine setting that studies COVID-19 as a gendered crisis. Aside from contributing to the limited literature on COVID-19 as a gendered issue, this study contributes significantly on ways to prevent the surge of COVID-19. With the recent developments surrounding the pandemic, it is the opportune time for the government's policymakers to reshape policies to control the threat of the pandemic. Moreover, this initiative buttresses efforts by the different stakeholders in civil society, families, citizens, businesses, and media to minimize the spread of the virus. It is also an urgent time to find out if all forms of media can influence all stakeholders to adhere to quarantine

protocol for COVID-19 to mitigate the threat of the pandemic and, subsequently, to contain the virus.

Review of Related Literature

Minimum Quarantine Protocol of the Philippine Department of Health

The Philippine Department of Health has communicated the following COVID-19 health protocol in Filipino and English on their website, press conferences, press articles, among others. (Department of Health, 2020): (a) Wash hands or sanitize with rubbing alcohol frequently, (b) stay at home as much as you can, (c) wear masks, (d) isolate those who show symptoms of COVID-19 and report this to health authorities, (e) observe physical distancing, (f) observe coughing etiquette, (g) observe curfew hours, and (h) stay away from crowded places. Aside from face masks, the Philippine government mandated the use of full-face shields to prevent further the surge of COVID-19 (Department of Health, 2020).

A survey conducted amongst 2,400 Filipinos (18 years old and above) by Pulse Asia last November 23–December 2, 2020, exhibited that a big majority (71%) wash their hands frequently, and 66% used face masks (Magsambol, 2021). About 32% would stay at home if it were not necessary to go out, 20% used face shields, and 20% avoided crowded places (Magsambol, 2021). This national survey showed that even if 94% of the Filipinos surveyed were worried about being infected by COVID-19 across all classes and geographic areas, adherence to the COVID-19 quarantine protocol could still be improved (Magsambol, 2021). This survey suggests that there is a gap between Filipinos worrying about getting infected by COVID-19 and their actual behavior in adhering to COVID-19 quarantine protocol.

Ajzen's theory of planned behavior states that intention can predict actual behavior, but there are instances when there is a gap between intention and actual behavior. This study will use Ajzen's theory of planned behavior as its conceptual framework (Ajzen, 1985).

Gender Differences in Depression and Anxiety

The results of 1,879 online surveys gathered from March 28 to April 12, 2020, revealed that one-fourth of Filipino respondents reported moderate-to-severe

anxiety, and one-sixth reported moderate-to-severe depression and psychological impact (Tee et al., 2020). According to Tee et al. (2020), the female gender was significantly associated with the greater psychological impact of the pandemic and higher levels of stress, anxiety, and depression. These were the female students, who were 12–21 years old and single. These psychologically affected females experienced physical symptoms of COVID-19 and reported poor health status, unnecessary worries, concerns for family members, and discrimination.

Wang et al. (2020) validated this finding in a similar study in China that showed that the female gender was the most affected in terms of depression and anxiety. Of the 1,210 respondents from 194 cities in China, the female students, who showed physical symptoms of COVID-19, experienced higher levels of stress, anxiety, and depression (Wang et al., 2020).

Theory of Planned Behavior (TPB)

According to Ajzen (2006), actual behavior can be affected by one's (a) attitudes, (b) subjective norms, and (c) perceived behavioral control. A favorable attitude can lead one to perform the behavior to obtain the desired goal (Agarwal, 2014). This attitude can be affected by positive or negative beliefs about behavior. As an example, one's favorable attitude on quarantine protocol can lead one to adhere to the COVID-19 protocol. On the other hand, subjective norms refer to other persons, such as family and friends, who may influence a person to perform a behavior (Yang, 2015). Subjective norms are affected by normative beliefs.

Perceived behavioral control refers to the ease or difficulty of performing a behavior. It includes concepts of self-efficacy and controllability (Prabawanti et al., 2015).

TPB has been used as a popular framework to attest to the perceived effectiveness of the COVID-19 quarantine protocol (Chan et al., 2020; Godbersen et al., 2020; Prasetyo et al., 2020). However, among the criticisms of the theory is its exclusion of cultural dimension that varies from country to country. Pandey et al. (2020) compared the impact of culture in the context of cause-related marketing (CRM) between India and the Philippines. Further, they examined the impact of national differences in skepticism, perceived novelty, global connectedness, and long-term orientation on customer behavior towards CRM across India and the Philippines. The study concluded that the dynamics of the acceptance of CRM in India and the Philippines were unique (Pandey et al., 2020).

Wang, Chudzicka-Czupala et al. (2020) studied the physical and mental health of citizens in a country that encouraged the use of face masks (China) against the citizens of another country (Poland) that discouraged face masks during the start of COVID-19 pandemic. Of the 1,210 Chinese and 1,056 Polish respondents surveyed, the Polish respondents had higher levels of stress, anxiety, and depression (Wang, Chudzicka-Czupala, et al., 2020). The authors concluded that using face masks at the community level might lead to better physical and mental health (Wang, Chudzicka-Czupala, et al., 2020).

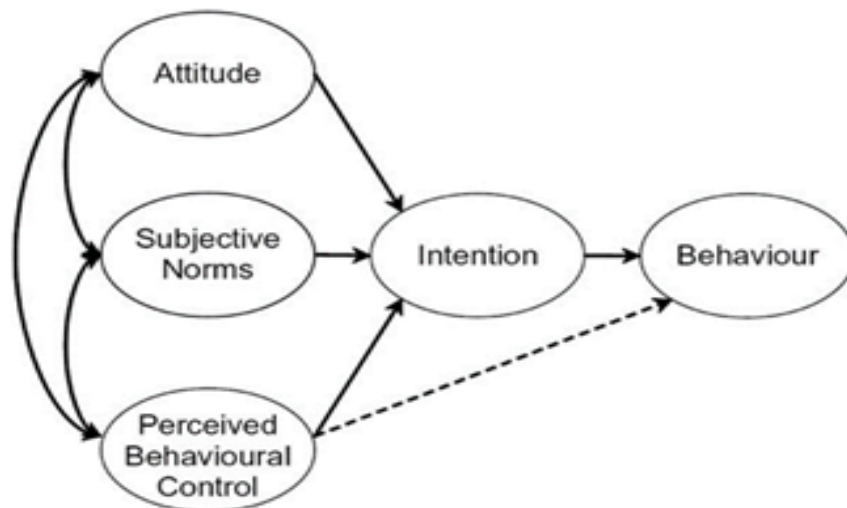


Figure 1. The Theory of Planned Behavior (Ajzen, 2006)

Despite the cultural limitations, the TPB has been an accepted framework in analyzing behavior towards adherence to COVID-19 protocol (Chan et al., 2020; Godbersen et al., 2020; Prasetyo et al., 2020).

Attitude and Adherence to Quarantine Protocol

Prasetyo et al. (2020) studied the factors that would affect the perceived effectiveness of COVID-19 prevention measures during an Enhanced Community Quarantine in Luzon, Philippines. It was apparent that attitude was a significant predictor of adherence to quarantine protocol (Chan et al., 2020). The research confirms that attitude towards adherence to quarantine protocol can influence a person to follow through with sticking to the quarantine protocol. A study using 663 German students showed that attitude predicted quarantine adherence (Godbersen et al., 2020). It can be hypothesized that a favorable attitude can lead to quarantine adherence.

Gordon and Hubbard (2020) also suggested that women tend to be more predisposed towards health care than men. Gendered studies on health behavior show that women tend to engage in protective health behavior instead of risky health behavior (Giaccardi et al., 2017). Men are more likely to engage in risky behavior, including drinking, driving without a license, smoking marijuana, and crimes. Men tend to live up to the image of masculinity through these risky behaviors. Any behavior that does not depict this masculine image is viewed as a sign of weakness. This attitude to engage in risky behavior, such as heavy drinking in front of peers, is understood to be part of the masculine image (Giaccardi et al., 2017). Society's continued tolerance of this behavior has perpetuated this masculine ideology.

This suggests that men will have a less favorable attitude towards behavior that may show their vulnerability to an outbreak, such as COVID-19. Observing quarantine protocol such as frequent handwashing, staying at home, observing a curfew, and other health measures may negatively affect their masculine ideology. Thus, it would appear that men are likely to be less supportive towards their adherence to quarantine protocol than females.

Okten et al. (2020) studied the gender differences in following quarantine procedures. Their study showed that females had a more positive attitude towards complying with quarantine protocol. They compared females and males in three studies. The three studies

showed that females showed more positive attitudes towards health behaviors preventing the spread of COVID 19. This leads us to the following hypotheses:

- H1. There is a positive relationship between attitude towards quarantine and adherence to quarantine protocol.
- H2. There is a significant difference between attitude and adherence to quarantine protocol when compared by gender.

Subjective Norm and Adherence to Quarantine Protocol

According to Chan et al. (2020), family and friends who advise a person to hold fast to quarantine protocol can influence a person to adhere to it. Family, friends, and significant others who can encourage a person to stick to quarantine protocol are part of subjective norms. Prasetyo et al. (2020) also pointed out that subjective norms can affect adherence to quarantine protocol. Pertl et al. (2020), who studied the use of sunscreen and sunbeds to prevent skin cancer, concluded that subjective norms affected the health behavior to prevent skin cancer. Webster et al. (2020) validated that subjective norms affected quarantine adherence. According to these authors, adherence to the COVID-19 quarantine protocol should be communicated as an altruistic behavior for the common good (Webster et al., 2020).

The study of Okten et al. (2020) showed that females complied with quarantine protocol because they are needed to care for their families. According to these authors, females reported that they felt responsible for others (Okten et al., 2020). This suggests that females are predisposed to adopt healthy behaviors to prevent COVID-19 infection because they believe that they have to be healthy and strong to take care of their families. This implies that females are more affected by subjective norms than men. This leads to the following hypotheses:

- H3. There is a positive relationship between subjective norms and adherence to quarantine protocol.
- H4. There is a significant difference between subjective norms and adherence to quarantine protocol when compared by gender.

Perceived Behavioral Control and Adherence to Quarantine Protocol

Perceived behavioral control has been an important predictor of adherence to quarantine protocol (Godbersen et al., 2020; Prasetyo et al., 2020). It refers to how easy or how difficult is the performance of the desired behavior. Pertl et al. (2010) classified perceived behavioral control into self-efficacy and controllability. According to Pertl et al. (2020), self-efficacy will be about how confident or easy one can perform the behavior, whereas controllability will be how much control one will have over behavior.

Self-Efficacy and Adherence to COVID-19 Protocol

Pertl et al. (2020) studied the effect of self-efficacy on intention to perform health-promotion behavior. Their study on skin cancer prevention showed that respondents with higher self-efficacy have a higher intention to use sunscreen.

Controllability and Adherence to COVID-19 Protocol

Pertl et al. (2020) examined the effect of controllability on intention to perform a desirable health behavior. They concluded that those with higher controllability predicted the intention to use sunbeds (Pertl et al., 2020).

The studies conducted by Okten et al. (2020) showed that it was easier for females rather than males to practice handwashing and social distancing. Further, it was easier for females to get information about health behaviors to prevent COVID-19 infection from medical practitioners, government agencies, and the media. Likewise, females showed more control in being able to adhere to social distancing and handwashing in spite of their caregiving roles (Okten et al., 2020). This leads to the following hypotheses:

- H5. There is a positive relationship between self-efficacy and adherence to quarantine protocol.
- H6. There is a significant difference between self-efficacy and adherence to quarantine protocol when compared by gender.

H7. There is a positive relationship between controllability and adherence to quarantine protocol.

H8. There is a significant difference between controllability and adherence to quarantine protocol when compared by gender.

Media and Adherence to Quarantine Protocol

The survey of German students showed that media coverage, whether traditional (television, newspapers, radio, etc.) or new media (internet, social media, etc.), positively affected the students' adherence to quarantine protocol (Godbersen et al., 2020). This suggests that supportive media can provide a timely and clear reason for the quarantine (Webster et al., 2020). This is further validated in the study of Plaisime et al. (2020) that showed that social media, particularly Facebook, is an effective tool to promote teens' health. Galle et al. (2020), who studied the knowledge and behavior of Italian undergraduate students towards COVID-19, further confirmed that mass media positively affected the students' adherence to quarantine protocol.

Wang et al. (2020a) discovered that disseminating health information through radio led to higher levels of anxiety and depression. They recommended the use of television (with the participation of celebrities) and the Internet (with visual graphics and videos) to encourage the public to adhere to health behavior to prevent the spread of COVID-19 (Wang et al., 2020b). This also suggests that media can influence the public to adhere to the COVID-19 protocol.

There have been debates that traditional media can promote risky health behaviors such as smoking (Park, 2019). Social media has also been pointed out as influencing young women's ardent desire to have slim and attractive figures at all costs (Iwanicka & Soroka, 2020). Social media was also found to have promoted men's risky health behavior such as substance abuse, physical injury, and sexually transmitted diseases (Giaccardi et al., 2017). Despite these studies, there is also enough literature that suggests that both traditional and new media can complement and equally promote adherence to health behaviors.

This suggests that media (traditional or new media) can promote adherence to health behaviors, such as the COVID-19 quarantine protocol. This leads to the following hypothesis:

- H9. There is a positive relationship between media and adherence to quarantine protocol.

Durkin et al. (2011) studied the role of traditional and contemporary media on smoking cessation among adults. The results showed that those who had favorable attitudes towards media campaigns promoting smoking cessation were likely to quit smoking (Durkin et al., 2011). This suggests that media can moderate the relationship between attitude and smoking cessation. Likewise, it is hypothesized that media can moderate the relationship between attitude towards quarantine protocol and quarantine adherence. Thus, we hypothesize:

- H10. Media moderates the relationship between attitude and adherence to quarantine protocol.

Okten et al. (2020) concluded that females tend to get information about COVID-19 protocol, especially social distancing, from various media sources, particularly social media. Females tend to do this because they want to be COVID-19 free for their families. The authors also recommended that improved compliance among males can be done if they are told that they need to be COVID-19 free for their families (Okten et al., 2020). This information campaign can be carried through different social media platforms, such as Facebook, Twitter, and Instagram. Therefore, the following hypothesis is made:

- H11. Media moderates the relationship between subjective norms and adherence to quarantine protocol.

Getting information from social media made it easier for females to practice social distancing, which is part of the quarantine protocol (Okten et al., 2020). Likewise, it was easier for adults to engage in smoking cessation because of the information from various media sources (Durkin et al., 2011). This suggests that media, which can be both traditional and new, can influence the perceived ease of engaging in healthy behavior, such as adherence to quarantine protocol. The following hypothesis is made:

- H12. Media moderates the relationship between self-efficacy and adherence to quarantine protocol.

Webster et al. (2020) concluded that improved adherence to quarantine protocol could be made with timely and clear information on why this is needed. This can be communicated through mass media and social media through detailed information on how much control the viewers have in adhering to this health behavior. This suggests that media can strengthen the relationship between controllability and adherence to quarantine protocol. The following hypothesis is made:

- H13. Media moderates the relationship between controllability and adherence to quarantine protocol.

Okten et al. (2020) concluded that adherence to quarantine protocol is a gendered decision, with more females adhering to social distancing, hand washing, and wearing of face masks. The authors observed that females are more in control of exhibiting this behavior than males (Okten et al., 2020). This leads to the following hypothesis:

- H14. There is a significant difference in the moderating effect of media between controllability and adherence to quarantine protocol when compared by gender.

Adherence to Quarantine Protocol

According to Webster et al. (2020), people vary in their adherence to quarantine protocol. Adherence to quarantine protocol can be a gendered decision. Qeadan et al. (2020) validated this observation in their studies on the protective measures that Americans are adopting to prevent the spread of COVID-19. According to these authors, demographic and economic factors affect adherence to quarantine protocol (Qeadan et al., 2020). Females are more likely to engage in protective behaviors, such as frequent handwashing and physical distancing, along with those who have higher incomes, better education, insurance, more than 60 years old, and those with asthma, hypertension, and diabetes. The authors also reported poor compliance behavior of some respondents who were interviewed (Qeadan et al., 2020). The growing anti-Asian xenophobia in the United States during COVID-19 pandemic has

also caused poor anti-COVID 19 health compliance of Asian Americans, especially those who are elderly, undocumented, speak limited English, and earn lower incomes (Le et al., 2020).

Okten et al. (2020) pointed out that females were more likely to visit medical doctors and follow their recommendations than males even before the break-out of COVID-19. These health behaviors were further reinforced during the COVID-19 pandemic when females showed adherence to social distancing, frequent handwashing, wearing of face masks, and staying at home (Okten et al., 2020).

The fact that females are likely to adhere to quarantine protocol is validated in the study of Talidong and Toquero (2020). The authors studied the coping mechanism of Philippine teachers in handling COVID-19 (Talidong & Toquero, 2020). Because the teaching profession is dominated by females in the Philippines, the study showed that teachers, who are mostly females, adhered to quarantine requirements (Talidong & Toquero, 2020).

Adherence to quarantine protocol in the Philippines carries a fear appeal (Biana & Joaquin, 2020). According to Biana and Joaquin (2020), a town crier in a truck goes around the communities to threaten residents that a fine of PhP5,000 (USD100) will be

imposed on residents who do not observe curfew hours. In another town, local officials signal the start of the curfew by sounding the alarm from a horror movie (Biana & Joaquin, 2020). The authors implied that collaborative efforts from different sectors of society might be an option, which can be further explored (Biana & Joaquin, 2020).

Definition of Variables

Table 1 defines the variables used in this study (Ajzen, 2006; Gabore, 2020; Prasetyo et al., 2020).

Conceptual Framework

Figure 2 shows the study's conceptual framework, which shows that attitude, subjective norms, and the perceived behavioral control concepts of self-efficacy and controllability will affect adherence to quarantine protocol. Because the TPB allows additional constructs to be added, this study includes media, which includes traditional and new media, as a moderating behavior between attitude, subjective norms, self-efficacy, and controllability.

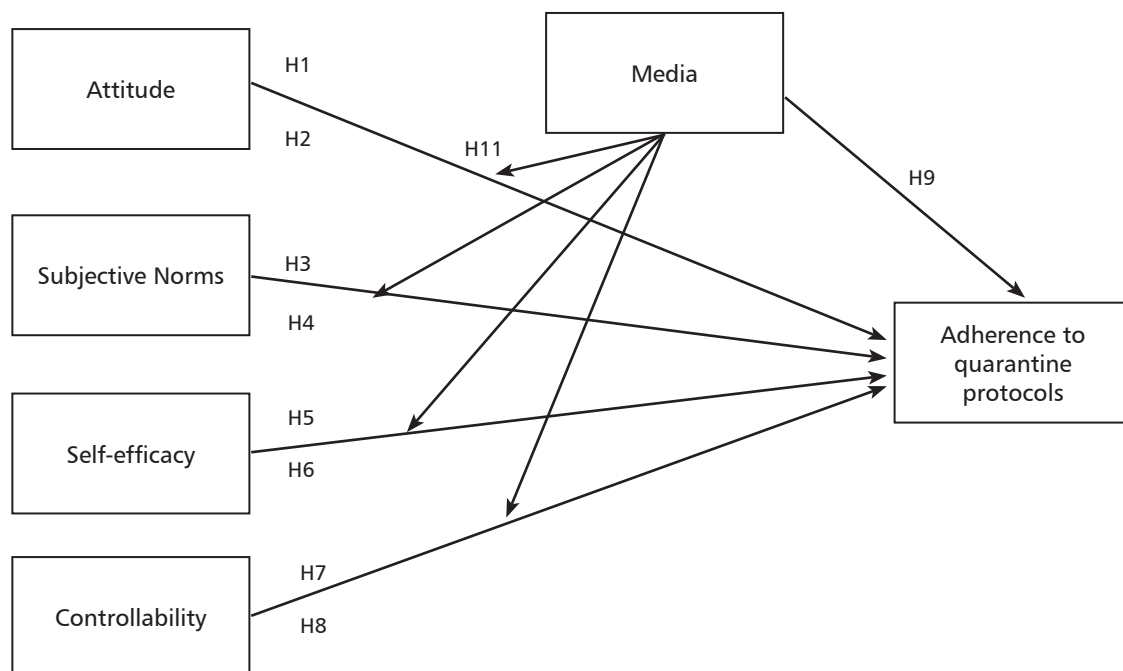


Figure 2. Conceptual Framework (Adapted from Ajzen, 2006)

Table 1*Definition of Variables Table Title Here*

Acronym	Variable	Definition
ADHERE	Adherence to quarantine protocol	Actual behavior of performing COVID-19 prevention measures
ATT	Attitude	Degree to which a person has favorable or unfavorable evaluation of a behavior
ATTXMEDIA	Media as a moderating variable between Attitude and Adherence to quarantine Protocol	Degree to which media can strengthen or weaken the relationship between Attitude and Adherence to a quarantine protocol
CNTRL	Controllability	Degree to which a person has control over a behavior
CNTRLXMEDIA	Media as a moderating variable between Controllability and Adherence to quarantine protocol	Degree to which media can strengthen or weaken the relationship between Controllability and Adherence to a quarantine protocol
MEDIA	Media	Refers to mass media that compose and disseminate stories of pandemics, issues, etc.
SE	Self-efficacy	Perceived ease or difficulty in performing a behavior
SEFFXMEDIA	Media as a moderating variable between Self-efficacy and Adherence to a quarantine protocol	Degree to which media can strengthen or weaken the relationship between Self-efficacy and Adherence to quarantine protocol
SUBJN	Subjective Norms	Degree to which people close to a person will approve or disapprove a behavior
SUBJXMEDIA	Media as a moderating variable between Subjective Norms and Adherence to quarantine protocol	Degree to which media can strengthen or weaken the relationship between Subjective norms and Adherence to quarantine protocol

Methodology

Self-administered surveys were pretested and modified before these were sent to respondents in Metro Manila, Philippines. These were sent last March 15-April 15, 2020, which were the dates that the Enhanced Community Quarantine was declared. Of the 400 respondents who answered the survey, 200 were males, and 200 were females. Metro Manila was chosen as the survey's locale as it had the highest COVID-19 infection in the Philippines (Department of Health, 2021).

The survey questionnaire had six sections that covered attitude, subjective norms, self-efficacy, controllability, media, and actual behavior (adherence to quarantine protocol). The media forms used in the

survey were television, Facebook, online newspapers, and Instagram. Each section had four questions to measure the respondents' perceptions. The respondents' perceptions were measured using a five-point scale (1 – strongly disagree, 2 – disagree, 3 – neutral, 4- agree, and 5- strongly agree).

SMART-PLS was used to analyze the respondents' data through structural equation modeling. Reliability tests were carried out to secure accuracy and consistency.

Results

This study uses measurements that should be tested for reliability and accuracy. Cronbach's alpha was used to ensure scale reliability and accuracy, as

it is the most widely used measure of scale reliability (Cronbach, 1951; Peterson, 1994). According to Peterson (1994), who published a study regarding the meta-analysis of Cronbach's alpha, an adequate Cronbach alpha value is at least 0.70. He added that at least 0.60 is still acceptable in social psychology research (Peterson, 1994). The constructs in Table 2 show internal consistency because they are all higher than the set target of >0.70.

The assessment of discriminant validity is needed in research to prevent multicollinearity issues involving latent variables (Henseler et al., 2014). The Fornell and Larcker criterion was utilized to test constructs' discriminant validity. This criterion compares the

square root of the AVE values with the latent variable correlations (Henseler et al., 2014). The results, shown in Table 3, revealed that the square root of each construct's AVE is greater than its highest correlation with any other construct. This implies that all the variables used in this research are statistically different from one another.

Table 4 summarizes the significant paths. The significant paths are attitude to adherence to quarantine protocol, controllability to adherence to quarantine protocol and media to adherence to quarantine protocol. The significant relationship between attitude to adherence to quarantine protocol highlights the importance of developing the right attitude of the

Table 2

Cronbach Alpha, Composite Reliability and Average Variance Extracted for the Constructs

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ADHERE	0.948	0.950	0.960	0.829
ATT	0.951	0.958	0.965	0.874
ATTXMEDIA	1.000	1.000	1.000	1.000
CNTRL	0.952	0.953	0.962	0.807
CNTRLXMEDIA	1.000	1.000	1.000	1.000
MEDIA	0.737	0.756	0.832	0.555
SE	0.951	0.959	0.965	0.872
SEFFXMEDIA	1.000	1.000	1.000	1.000
SUBJN	0.961	0.962	0.972	0.896
SUBJXMEDIA	1.000	1.000	1.000	1.000

Table 3

Discriminant Validity Using Fornell-Larcker Criterion

	ADHERE	ATT	ATTXMED	CNTRL	CNTRLXM	MEDIA	SE	SEFFXME	SUBJN	SUBJXME
ADHERE	0.910	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ATT	0.788	0.935	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ATTXMED	-0.694	-0.705	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CNTRL	0.851	0.728	-0.649	0.898	0.000	0.000	0.000	0.000	0.000	0.000
CNTRLXM	-0.715	-0.667	0.932	-0.640	1.000	0.000	0.000	0.000	0.000	0.000
MEDIA	0.575	0.543	-0.449	0.478	-0.415	0.745	0.000	0.000	0.000	0.000
SE	0.724	0.711	-0.545	0.762	-0.542	0.471	0.934	0.000	0.000	0.000
SEFFXME	-0.675	-0.644	0.921	-0.624	0.926	-0.372	-0.546	1.000	0.000	0.000
SUBJIN	0.688	0.790	-0.580	0.696	-0.565	0.496	0.760	-0.602	0.947	0.000
SUBJXME	0.651	0.641	0.923	0.608	0.900	0.397	0.563	0.940	0.644	1.000

people to convince them to follow the quarantine guidelines.

Table 4 also shows that media moderated the relationship between controllability and adherence to quarantine protocol. This suggests that media can influence the relationship between controllability and adherence to quarantine protocol.

Hypotheses

H1: There is a positive relationship between attitude towards quarantine and adherence to quarantine protocol. With $p < 0.001$, this hypothesis is supported (Table 5). The result validates existing studies that show that attitude is a predictor of actual behavior (Chan et al., 2020; Godbersen et al., 2020; Prasetyo et al., 2020). It also strengthens the use of the TPB to analyze health-promoting behaviors such as adherence to quarantine protocol (Ajzen, 1985).

H2: There is a significant difference between attitude and adherence to quarantine protocol when compared by gender. With $p = 0.933$, this is not supported (Table 5). This does not validate existing studies that show that females tend to follow the quarantine protocol than males because they believe that they have to be healthy to take care of their families (Okten et al., 2020).

H3: There is a positive relationship between subjective norms and adherence to quarantine protocol.

With $p = 0.398$, this is not supported (Table 5). The result does not support existing studies that show that one can influence family and friends to adhere to the COVID-19 quarantine protocol (Chan et al., 2020; Pert et al., 2020; Prasetyo, 2020; Webster et al., 2020). Perhaps, this is because the respondents adhered to the COVID-19 quarantine protocol not because of pressure from family and friends but because of their desire to stay alive (Suplico-Jeong et al., 2020).

H4: There is a significant difference between subjective norms and adherence to quarantine protocol when compared by gender. With $p = 0.565$, this is not supported (Table 5). This suggests that both genders may be intrinsically motivated to follow the quarantine protocol to stay alive (Suplico-Jeong et al., 2020).

H5: There is a positive relationship between self-efficacy and adherence to quarantine protocol. With $p = 0.319$, this is not supported (Table 5). This implies that respondents did not feel that it was easy to adhere to COVID-19 protocols. This does not support existing studies that show that the higher the self-efficacy, the higher will be the intention to perform a health-promoting behavior (Pert et al., 2020).

H6: There is a significant difference between self-efficacy and adherence to quarantine protocol when compared by gender. With $p = 0.838$, this is not supported (Table 5). This does not validate existing studies that show that it was easier for females rather

Table 4

Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
ATT → ADHERE	0.270	0.266	0.075	3.590	0.000
ATTXMEDIA → ADHERE	0.117	0.125	0.080	1.466	0.143
CNTRL → ADHERE	0.490	0.489	0.057	8.576	0.000
CNTRLXMEDIA → ADHERE	-0.175	-0.168	0.063	2.775	0.006
MEDIA → ADHERE	0.147	0.145	0.039	3.740	0.000
SE → ADHERE	0.059	0.066	0.059	0.996	0.319
SEFFXMEDIA → ADHERE	-0.058	-0.063	0.086	0.669	0.503
SUBJN → ADHERE	-0.066	-0.067	0.079	0.845	0.398
SUBJXMEDIA → ADHERE	0.026	0.013	0.079	0.327	0.744

than males to adhere to COVID-19 protocol such as handwashing and social distancing (Okten et al., 2020).

H7: There is a positive relationship between controllability and adherence to quarantine protocol. With $p < .001$, this is supported (Table 5). This validates existing studies that concluded that the higher the controllability, the higher the intention to adhere to health-promoting behavior (Pert et al., 2020).

H8: There is a significant difference between

controllability and adherence to quarantine protocol when compared by gender. With $p = 0.945$, this is not supported (Table 5). The result does not support existing studies that show that females showed more control in being able to adhere to social distancing and handwashing (Okten et al., 2020).

H9: There is a positive relationship between media and adherence to quarantine protocol. With $p < 0.001$, this is supported (Table 5). The result supports existing studies that show that media positively affected adherence to quarantine protocol (Galle et al., 2020);

Table 5

Summary of Structural Model Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
ATT → ADHERE	0.270	0.266	0.075	3.590	0.000
ATTXMEDIA → ADHERE	0.117	0.125	0.080	1.466	0.143
CNTRL → ADHERE	0.490	0.489	0.057	8.576	0.000
CNTRLXMEDIA → ADHERE	-0.175	-0.168	0.063	2.775	0.006
MEDIA → ADHERE	0.147	0.145	0.039	3.740	0.000
SE → ADHERE	0.059	0.066	0.059	0.996	0.319
SEFFXMEDIA → ADHERE	-0.058	-0.063	0.086	0.669	0.503
SUBJN → ADHERE	-0.066	-0.067	0.079	0.845	0.398
SUBJXMEDIA → ADHERE	0.026	0.013	0.079	0.327	0.744
	Path Coefficients- diff (F - M)A	p-Value original 1-tailed (F vs M)	p-Value new (F vs M)		
ATT → ADHERE	-0.017	0.533	0.933		
ATTXMEDIA → ADHERE	-0.127	0.778	0.443		
CNTRL → ADHERE	-0.007	0.528	0.945		
CNTRLXMEDIA → ADHERE	-0.064	0.664	0.671		
MEDIA → ADHERE	0.042	0.296	0.591		
SE → ADHERE	-0.026	0.581	0.838		
SEFFXMEDIA → ADHERE	0.041	0.384	0.768		
SUBJN → ADHERE	0.117	0.282	0.565		
SUBJXMEDIA → ADHERE	0.265	0.095	0.190		

Giaccardi et al., 2017; Godbersen et al., 2020; Iwanicka & Soroka, 2020; Park, 2019; Plaisime et al., 2020; Webster et al., 2020).

H10: Media moderates the relationship between attitude and adherence to quarantine protocol. With $p=0.143$, this is not supported (Table 5). The result does not support existing studies that show that attitudes towards media can encourage adherence to health-promoting behavior (Durkin et al., 2011).

H11: Media moderates the relationship between subjective norms and adherence to quarantine protocol. With $p=0.744$ (Table 5), this is not supported. The result does not support existing studies that show that significant others will encourage persons to adhere to quarantine protocol (Okten et al., 2020).

H12: Media moderates the relationship between self-efficacy and adherence to quarantine protocol. With $p=0.503$, this is not supported (Table 5). This does not support existing studies that show that media can strengthen the relationship between self-efficacy and adherence to quarantine protocol (Durkin et al., 2011; Okten et al., 2020).

H13: Media moderates the relationship between controllability and adherence to quarantine protocol. With $p=0.006$ (Table 5), this is supported. This supports the studies of Webster et al. (2020) that pointed out that mass media, through detailed information, can encourage people to adhere to quarantine protocol.

H14: There is a significant difference with the moderating effect of media between controllability and adherence to quarantine protocol when compared by gender. With $p=0.671$ (Table 5), this is not supported. This does not support existing studies that show that adherence to COVID-19 protocol is a gendered decision (Okten et al., 2020).

Discussion

The results among female respondents show that the following are significant: (a) attitude to adherence to quarantine protocol, (b) controllability to adherence to quarantine protocol, and (c) media to adherence to quarantine protocol. Likewise, the results among male respondents also show that these three are significant. This suggests that favorable attitudes towards quarantine protocol from females and males can lead to quarantine adherence. This validates the existing literature that attitude can predict actual behavior (Ajzen, 2006; Chan et al., 2020; Godbersen et al., 2020; Prasetyo et al., 2020).

There is a significant difference between attitude and adherence to quarantine protocol based on gender. This suggests that females tend to have a more positive attitude towards adherence to quarantine protocol. This validates the studies of Godbersen et al. (2020), Gordon and Hubbard (2020), and Okten et al. (2020). Even before COVID-19, authors Okten et al. (2020) pointed out that females exhibited a more positive attitude towards healthy behavior, such as keeping their doctor's appointments, and this attitude towards healthy behavior was reinforced during the COVID-19 pandemic.

For Filipino female respondents, this positive attitude towards adherence to quarantine protocol was maintained despite the challenges of gendered encounters with the military and the pressing demands of being caregivers at homes (Colobong & Bautista, 2020). For those in the healthcare profession, the role of a caregiver at home and at work must have been a daunting task (UPPI & DRDF, 2020). Yet, the stories of female resilience prevailed during the COVID-19 pandemic (Dicolen & Abagat, 2020).

There is no significant relationship between subjective norms and adherence to quarantine protocol. Matias et al. (2020) pointed out that during a crisis such as the COVID-19 pandemic, self-preservation is paramount. According to them, people must help themselves during this time and, thus, the pressure from family, friends, and significant others may be secondary compared to self-preservation (Matias et al., 2020). In other words, the protection of COVID-19 quarantine measures has higher quality ratings than the willingness to fulfill the expectations of others (Godbersen et al., 2020). This is further supported by studies that show that Filipinos followed

quarantine protocol to stay alive (Suplico-Jeong et al., 2020).

Although self-efficacy as part of perceived behavioral control was not significant, controllability was significant to adherence to quarantine protocol. In other words, the perception of being in control predicted actual behavior much more than the perception of ease of performing the actual behavior.

The results show that there is a significant relationship between controllability and adherence to quarantine protocol based on gender. This suggests that female respondents perceived that they were more in control of performing health behaviors of frequent handwashing, wearing of face masks and face shields, social and physical distancing, staying at home, and so forth. This can also be because the traditional role of females is to keep the home safe and clean while the males, as breadwinners, have to go out and work (Garcia et al., 2020). If this is the case, females will be more in control of practicing health behaviors in the confines of their homes. This ingrained habit would make it also easier for females to practice healthy behaviors outside of their homes as part of their daily routine.

Media was significant in the adherence to quarantine protocol. This validates the importance of media in promoting health behaviors, such as adherence to quarantine protocol (Godbersen et al., 2020; Plaisime et al., 2020; Webster et al., 2020).

Media also moderated the relationship between controllability and adherence to quarantine protocol. This suggests that media can improve adherence to quarantine protocol for both females and males by communicating messages that will enhance the perceptions of being able to perform the behavior. According to Galle et al. (2020), mass media can efficiently communicate risk information to the public that will encourage them to adhere to quarantine protocol. The health information to prevent the spread of COVID-19 can be communicated through television and the Internet, as these do not increase the anxiety levels of the viewers (Wang et al., 2020).

The results show that there is a significant difference between (a) attitude and adherence to quarantine protocol and (b) controllability and adherence to quarantine protocol based on gender. These validate studies that males are more prone to risky health behaviors (Giaccardi et al., 2017). The masculinity ideology reveals that males are emotionally restrictive,

self-reliant, aggressive, invulnerable, bold, and risk-takers (Giaccardi et al., 2017). The masculinity ideology shows that males should be competitive, focus on earning incomes, and display power over females (Giaccardi et al., 2017). Media has contributed to this masculinity ideology in various formats. This suggests that taking care of one's health, such as adhering to COVID-19 protocol, may be viewed by some males as a sign of weakness. Media can be harnessed to send a message that adhering to COVID-19 protocol is not a sign of femininity and fear but a sign of altruistic behavior required from males for the greater good (Biana & Joquin, 2020).

Conclusion

Does gender divergence matter? Based on the study's results, gender divergence matters in terms of (a) attitude and (b) controllability towards adherence to COVID-19 quarantine protocol. However, the relationships between (a) subjective norms and quarantine adherence and (b) self-efficacy and quarantine adherence were not statistically significant based on gender. This suggests that gender divergence did not matter as far as these two variables were concerned.

Media moderated the relationship between controllability and adherence towards quarantine protocol. This suggests that media can be used to encourage adherence towards quarantine protocol through messages that lead to better attitudes and better control of the pandemic. Although there have been reports that mass media can promote risky health behaviors, mass media has the same influence to promote health-protecting behaviors (Park, 2019). Mass media viewers can be motivated to practice frequent handwashing, wearing of face masks and face shields, physical and social distancing, and other health measures. These mass media messages should be able to communicate to viewers that these are behaviors within their control. The types of media that can be used should include television and the Internet, as these do not increase the viewers' anxiety levels (Wang et al., 2020).

COVID-19 is a gendered issue with more male infections than female infections. The Philippine mass media can reach out to males to encourage them to adhere to quarantine protocol as they are more at

risk of catching and spreading this disease. Media messages can be crafted to dispel the illusion of male invulnerability and should be communicated in places where men frequent (Okten et al., 2020).

In the Philippines, COVID-19 has also led to gendered encounters. Reports of abuses of the military should be investigated aside from reports of abuse against women and children in the confines of their homes (Colobong & Bautista, 2020). Media can also be harnessed to convey the message that displaying power over women is not part of the masculine ideology (Giaccardi et al., 2017). These investigations will lead to a more gender-equal approach. It would be best to keep the home safe from abuses against women and children so as not to exacerbate the anxiety caused by COVID-19 (Talidong & Toquero, 2020).

Study's Limitations and Suggestions for Future Studies

The survey was sent out and administered between March 15 - April 15, 2020, which was the first government-imposed community quarantine in the Philippines. When the survey was done, ABS-CBN, which was one of the country's dominant TV network, was operational. It was shut down in May 2020 by the Philippine government (Gutierrez, 2020). This closure may have affected the respondents' exposure to media. Thus, measuring changes in the behavior of respondents over a longer time frame after the first survey can also be done, especially if media exposure is being studied as a moderating variable, is advised. These insights into the respondents' behavior can help government planners, especially the Department of Health and medical practitioners, formulate policies to contain the surge of COVID-19.

Because the framework for the study was based on TPB, there are also limitations in consideration of other factors such as cultural and economic influences and the timeframe between intention and behavior (Pandey et al., 2020; Sniehotta et al., 2014; Wang et al., 2020). Understanding and reconciling these limitations can offer other insights that can influence a person's intention to perform a behavior. This study measured actual behavior during the COVID-19 pandemic to leave no room for the gap between intent and actual behavior. Future studies can measure intent to perform the behavior and actual behavior.

Prior to the pandemic, a focus group discussion should have been conducted to probe deeper on gender differences between male and female respondents. Due to the strict implementation of Enhanced Community Quarantine, this was not possible. Future studies should consider a qualitative phase in the research in the form of a focus group discussion.

The results of this study cannot be generalized to the whole of the Philippines as the study was limited to Metro Manila residents only. Because Metro Manila consists of 16 urban cities and one municipality, future studies can cover other areas, such as select rural areas, to yield contrasts in behavior as well as insights. This will help government planners contain the surge of the disease, which can spread from urban to rural areas if not prevented.

This study did not take into consideration the number of family members living in various households. Because many families who are financially challenged live in the same household to pool whatever resources they may have, adherence to quarantine protocol, such as physical distancing and the purchase of face masks and face shields, may be limited, if not impossible (UPPI and DRDF, 2020). As COVID-19 exposed Filipino households to more economic vulnerabilities, it may not even be possible just to stay at home because breadwinners have to seek sources of income elsewhere, especially those who found themselves out of a job. Future studies can consider the living conditions of respondents, especially their economic vulnerabilities as well as coping mechanisms caused by the onslaught of the COVID-19 pandemic.

Based on Hofstede's cultural dimensions, the Philippines is classified as a masculine, collective, and hierarchical society (<https://www.hofstede-insights.com/country/the-philippines/>). Future studies can be undertaken in countries that are different in terms of these cultural dimensions. Cross-cultural differences in gender-related expectations between the Philippines and these countries can also be explored further.

Declaration of ownership:

This report is our original work.

Conflict of interest:

None.

Ethical clearance

This study was approved by our institution.

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