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Media And Personal And Social Risk Perceptions: The Case Of Covid-19 Pandemic In Malaysia.

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ABSTRACT

Mass media have long been recognised as powerful forces shaping how we experience and perceive the world. This article aims to look at the role of media, including mass media and social media, in creating people's perception of the risk brought by the virus Covid-19. This paper also discusses the differing impacts of media on risk perceptions from personal and social levels. There are 400 respondents involved, which were taken through an online survey, using Survey Monkey Application. The study uses online questionnaires and the data collected were analysed using SPSS version 27. Specifically, this article contemplates answering two important hypotheses: (1) Gender has a significant effect on risk perceptions, and (2) Media exposure has a stronger effect on social risk perception than on personal risk perception. The results showed that media have a positive role in shaping the perception of the risk of Covid-19 among the respondents. The study outcomes suggest that media exposure has a more substantial effect on social risk perceptions than personal risk perceptions.

Keywords: Social Media; Personal Risk Perception; Social Risk Perception; Cultivation Analysis.

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INTRODUCTION

The outbreak of a new strain of Coronavirus widely known as Covid-19, in late December 2019 has created an unprecedented global health crisis. It is mysterious pneumonia characterised by fever, dry cough, fatigue, and occasional gastrointestinal symptoms that have profoundly impacted the way we perceive our world and our everyday lives. The initial outbreak was reported in the Huanan Seafood Wholesale Market, in Wuhan, Hubei, China (Huang et al., 2020). This 'unseen or invisible enemy' has been spreading like wildfires. Recent data show that it is affecting 210 countries and territories around the world. Based on the data updated on 26 January 2021 by the worldometer.info., the total world cases stand at 100,286,788 with 2,149,507 death (worldometer.info., 2021). Although data show that more than 72,313,657 thousand recovered cases, the fact remains that both new and death cases are steadily increasing every day. Malaysia reported its first three cases on 25 January 2020, all of whom were Chinese nationals who had visited the country (New Strait Times, 25 January 2020 and Borneo Post, 26 January 2021). As of 25 January 2021, Malaysia recorded a total of 186,849 new cases, a seven-fold jump within four months. The total death cases have also increased by over three-fold to 689 cases within the same period (Ministry of Health, Malaysia, 2020). Although there is a sign of a flattening curve of the virus in Malaysia up to early September 2020, the rate appeared to spike again during the political activities in conjunction with the 16th Sabah State Election (The Star, 2020). Starting from the end of October 2020, the cases showed a drastic increase, which frequently reached more than 1000 cases a day. The trend continues, and by January 2021, the daily cases spiked consistently to more than 2000 cases daily and sometimes can accumulate to more than 4000 new cases in a day.

Up to the mid-January 2021, two types of vaccines were authorised and recommended to prevent Covid-19, namely Pfizer-BioNTech and Moderna. However, Malaysia will only receive its first consignment of Pfizer vaccine at the end of February 2021. While waiting for the vaccine, prevention is the best measure to avoid infection or further spread of the virus. According to Guan, Chen & Zhong (2020), early protection, early identification, early diagnosis, and early isolation are crucial to combat Covid-19 outbreaks. Other preventive measures for individuals include the use of face masks, practice social distancing, regular hand washing and to avoid social crowd, hence the 'stay at home, stay safe' quarantine slogan promoted by governments around the world. In Malaysia, the Ministry of Health has been advising people to avoid '3C' areas, namely crowded place, confined space, and close conservation. The Ministry also urges the public to practice '3W', which is frequently washing their hands with water and soap; wearing face mask especially in public places or when they encounter people who are having fever and flu; practice caution by avoiding handshakes, staying at home, and seeking treatment if they are developing symptoms related to Covid-19 (Adib Povera and Esther Landau, 13 May 2020).

However, even with newly available vaccine and these preventive measures promoted by the Ministry of Health, people are still very stressful, fearful, and sometimes petrified with the virus. Their fear and anxiety are related to the job and financial situation, but it is more so related to the risk that this disease may be brought to them, which can often be overwhelming and could cause strong emotions. Unaddressed emotional stress could contribute to physical and mental health; hence it is pertinent to address the problem as early as possible.

The outbreak of Covid-19 has grabbed the attention of mass media and social media platforms. Although there is much useful information on these platforms, there are also many sources and sites that published non-credible information, resulting in misinformation and people face difficulty distinguishing between real and fake information. This information from various sources contributes to the increase of fear and anxiety about the risk of this disease among people irrespective of age, gender, and race (Reema Karasneh et al., 2020).

According to Cultivation Theory, proposed by George Gerbner (1994), the longer a person exposes to media, the higher the tendency that a person's mind and perception is affected by what he/she watches or exposes to.

Therefore, this study investigates the role of mass media and social media in contributing to the fear and anxiety about the risk of contracting the Covid-19 virus. Specifically, this study will examine issues based on two main hypotheses: (1) Gender has a significant effect on risk perception; and (2) Media have a more substantial effect on social risk perception than on personal risk perception.

MEDIA AND RISK PERCEPTION

Mass media have long been recognised as powerful forces shaping how we experience the world and ourselves. This recognition is accompanied by a growing volume of research, that closely follows the footsteps of technological transformations (e.g., radio, movies, television, the internet, mobiles) and the *zeitgeist* (e.g., cold war, 9/11, climate change) in an attempt to map mass media major impacts on how we perceive ourselves, both as individuals and citizens (Wu & Li, 2017). One of the thrusts in the Cultivation Theory is called 'mainstreaming'. Mainstreaming proposes that heavy viewers of television (or exposure to mass media) tend to develop a convergent outlook with the program they watched. For instance, heavy viewers of television espouse similar beliefs regarding crime rates in their neighbourhood regardless of the actual amount of crime occurring where they live (Gerbner et al., 1994).

According to Gerbner (1990:6), television viewing is usually assessed by multiple indicators of the amount of time respondents watch television on an 'avenge day.' Since the amount of viewing is used in relative terms, the determination of what constitutes 'light,' 'medium: and 'heavy' viewing is made on a sample-by-sample basis, using as close to an even three-way split of hours of daily television viewing as possible. What is important is that there should be significant relative differences in viewing levels, not the actual or specific amount of viewing. The heaviest viewers of any sample of respondents from the population on which cultivation can be tested. This study also uses a three-way split hour of daily viewing or involvement in various media platforms. Heavy viewer refers to those who watch or involve in media for more than 4 hours, medium viewer refers to 2-4 hours exposures in various media and light viewers are those who watch or involve in media for less than 2 hours a day. In addition to traditional media, various online social media become regular channels through which people access and exchange information. Among the online social media, social network sites (SNSs) are the fastest growing personal network channels that allow users to create public profiles and interact with one another, which involves sharing and discussing various topics with other network users (Lee & Ma, 2012). Interconnections between people in this platform enhance the process of information dissemination and amplify the influence of that information (Luarn, Yang & Chiu, 2014).

While there has been increasing attention to the role of social media during infectious disease outbreaks, relatively little is known about the underlying mechanisms by which social media use affects risk perception and preventive behaviours during such outbreaks (Sang-Hwa Oh, Seo Yoon Lee & Changhyun Han, 2020). Risk perception refers to a person's subjective judgment about the seriousness of the potential harm due to some situation related to natural hazards and threats to the environment or health (Douglas, 1986). Brewer et al. (2007) identified three dimensions of risk perception: perceived likelihood, susceptibility, and severity of a risk. Respectively, they refer to the perceived probability that one will be harmed by the hazard, constitutional vulnerability to a hazard, and the extent of harm a hazard would cause.

Even though the research conducted by Sang-Hwa, Seo Yoon & Changhyun (2020) addresses this gap, they approached their research by looking at the roles of self-relevant emotions and public risk perception as mediators to the effects of media use on preventive behaviour. Other research that looked at the role of media use on risk-related judgments includes the study by Coleman, (1993) and Lin & Lagoe (2013) and the study by Wu & Li (2017) on the haze issue in China. Media messages were important sources for people's risk perception of HIV/AIDS (Agha, 2003; Romer et al., 2009) and of using new technologies (Bastide et al., 1989). Repeated media coverage keeps people alert to risk (Wahlberg & Sjöberg, 2000). One study suggests that it is not just the seriousness of infectious diseases covered by media but also the frequency of media coverage that increases people's perceived severity of the disease (Young, King, Harper, & Humphreys, 2013). A study done by Gerhold (2020) indicated that women are more concerned about Covid-19 compared to men.

In the process of forming risk perception, individuals obtain information through mediated communication, either from mass media coverage or from interpersonal communication with friends, neighbours, and co-workers (Tyler, 1980). In this study, mass media exposure refers to access to media content from both traditional media and their affiliates on the Internet, such as newspapers and television and their Web and mobile applications. Interpersonal communication is represented by information access, sharing, and discussion through social media platforms. The latter is considered as interpersonal because the activity involves live discussion and exchanging and sharing of information and in some instances, the video chat is used in the interactions. It is argued that people may turn to interpersonal communication channels to make further judgments of the information they received from mass media. In this case, it appears that interpersonal communication or social media involvement, in this study, merit further investigations. Therefore, there is a need to examine the relationship between social media involvement and risk perception and to what degree media exposure and social media involvement differ in effects on risk perception (Mou & Lin, 2014; Yang, Chen, & Feng, 2016).

Although studies have confirmed the correlation between mass media exposure and risk perception of the real world, there were exceptions (Hughes, 1980). The impersonal impact hypothesis was proposed to explain the inconsistencies. The impersonal impact hypothesis has two components. First, it suggests that personal and social-level judgments about risk are separate, and media effects may occur on one level without the other level being influenced. Second, media effects occur primarily on the social level rather than the personal level (Tyler & Cook, 1984). Social risk perception refers to individuals'

estimation of the generalized level of loss or damage to society, while personal risk perception refers to a chance of loss or damage felt by individuals on themselves (Tyler & Cook, 1984).

There are quite a few studies that looked at the relationships between media exposure and media involvement to social and personal risk perception. The outcomes of their studies appear to be not consistent. In the early 1980s, several studies found that time spent watching TV programs about crime and violence was unrelated to the fear of self-victimization (Hughes, 1980; Skogan & Maxfield, 1981; Tyler, 1980). While these studies found a minimal effect of TV programs on personal-level risk perception, they confirmed the effect of mass media exposure on social-level judgments about the crime rate (Skogan & Maxfield, 1981; Tyler, 1980). However, some other researchers (Dunwoody & Neuwirth, 1991; Tyler & Cook, 1984; Tyler, 1980) suggest that interpersonal communication as an informal social communication could influence personal risk perception. While some (Morton & Duck, 2001) have yielded a contradictory result. A study on home-based radon exposure found both interpersonal discussion and mass media exposure related to social-level judgments (Mazur & Hall, 1990). Another study about health risk demonstrated that interpersonal communication predicted a risk judgment on the societal dimension rather than on the personal dimension (Coleman, 1993). Therefore, when a risk such as Covid-19 threatens both the society and individuals, interpersonal communication could have a discrete role in the process, which remains to be resolved in the digital age, with various channels for interpersonal communication.

METHODOLOGY

This research employs a quantitative research strategy, using online questionnaires. Questionnaires were chosen for this research because they are a reliable and quick method to collect information from multiple respondents in an efficient and timely manner. An online questionnaire is suitable for this project, which is considered a large project because it covers wide and dispersed study locations throughout Malaysia, with several complex objectives, therefore, time is one of the major constraints (Greenfield, 2002; Silverman, 2004; Bell, 2005). The online method of collecting data also suitable in this period where the Covid-19 pandemic is still around. The population (n) is the Malaysian population. Random sampling was used for this study to ensure every population has an equal chance to become a respondent.

The questionnaire survey was posted on various social media platforms that include Facebook, WhatsApp, and Telegram in several groups started from 18 October 2020 and ended on 26 October 2020. A total of 406 responses were collected but after cleaning procedures, only 400 are suitable for analysis. The 400 samples are sufficient based on the sample size formula provided by Krejcie and Morgan (1970). Before the data were analysed, the reliability tests was performed.

Cronbach's Alpha, mean, and standard deviation values for social risk and personal risk are presented in Table 1. All the variables were measured using a five-point Likert scale anchored by 1 (strongly disagree or very unlikely) to 5 (strongly agree or very likely). The Cronbach's alpha values for both social risk and personal risk revealed significantly over 0.7**.** Results show that the mean scores for social risk and personal risk varied from 3.36 to 4.65, indicating that respondents had a moderate perception of both constructs. The standard deviation for these two constructs ranged from 0.435 to 0.751.

Table 1
Reliability Analysis, Mean and Standard Deviation for Variables in the Study

Construct	Cronbach's Alpha	Mean	Std. Deviation
Social Risk	0.818	4.653	0.435
Personal Risk	0.776	3.360	0.751

Several tests were used to analyse the data. The Independent Sample T-test was used to test the difference in the mean of social risk perception and personal risk perception scores for males and females. Meanwhile, a one-way between-groups analysis of variance (ANOVA) was used to explore the influence of media, mass media, and social media exposure on levels of social risk and personal risk. Regression analysis was used to predict the influence of media, mass media, and social media on risk perceptions.

ANALYSES AND FINDINGS

Profile of the respondents

Table 2 shows the demographic profile of the respondents. A total of 400 participants were included in the final sample. The analysis of the respondents' information reveals that more than half of the respondents were female (64.8%) with the remainder made up of males (35.3%). Approximately 60.8% of the respondents were in the age range of 20 to 29, 22.3% were aged in the age range of 20 to 29, 13.5% in the age range of below 20, 10.3% in the age range of 50 to 59, and the remaining 2% were over 60 years old. The ethnic background was predominantly Kadazan-Dusun, accounting for 34% of the samples, followed by the Chinese (21.3%) and Other Bumiputera (17.5%). As for education level, about 76% of the respondents have a tertiary education, 16.5% have a Secondary education, while the remaining 6.8% have earned either a master's or Ph.D. degree. Respondents were mostly from Sabah with 265 people (63.3%), followed by respondents from Peninsular Malaysia amounting to 85 people (20.5%) and Sarawak with 53 people (13.3%).

Table 2: Profile of Respondents

Demographic Variables	Categories	Frequency	Percentage
Gender	Male	141	35.3
	Female	259	64.8
Age	Below 20 years	54	13.5
	20-29 years old	243	60.8
	30-39 years old	16	4.0
	40-49 years old	38	9.5
	50-59 years old	41	10.3
	60 years and above	8	2.0
Education	Primary education	3	0.8
	Secondary education	66	16.5
	Tertiary education (university/college)	304	76.0
	Postgraduate (Master/Ph.D.)	27	6.8
Ethnicity	Other Bumiputera	70	17.5
	Kadazan-Dusun	134	33.5
	Bajau	47	11.8
	Chinese	85	21.3
	Malay	57	14.3
	Indian	7	1.8
Territory	Sabah	265	63.3
	Sarawak	53	13.3
	Peninsular Malaysia	82	20.5
	Total	400	100.0

Independent-Sample T-Test

An independent-sample t-test was conducted in this study to test whether there is a significant difference in the mean social risk perception and personal risk perception scores for males and females. The results in Table 3 shows that there was a significant difference in the scores for males (M=4.582, SD=0.481) and females (M=4.691, SD=0.404); t (398) = -2.419, p = 0.016 (two-tailed). The magnitude of the differences in the means (mean difference = -.109, 95% CI: -.199 to -.021) was very small (eta squared = 0.014). Similarly, when an independent t-test was performed to compare the personal risk scores for males and females. The result in Table 4 also shows that there was a significant different between males scores (M=3.499, SD=0.726) and females scores (M=3.284, SD=0.756); t (398) = 2.757, p = .006 (two-tailed). The magnitude of the differences in the means (mean difference = 0.215, 95% CI: 0.062 to 0.368) was very small (eta squared = 0.019).

Table 3
T-Test Analysis for Comparing Social Risk Perception Scores for Males and Females

Group Statistic

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Social Risk	Male	141	4.582	0.482	0.041
	Female	259	4.691	0.404	0.025

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Social Risk	Equal variances assumed	8.694	0.003	-2.419	398.000	0.016	-0.110	0.045	-0.199	-0.021
	Equal variances not assumed			-2.297	248.009	0.022	-0.110	0.048	-0.203	-0.016

Table 4
T-Test Analysis for Comparing Personal Risk Perception Scores for Males and Females

Group Statistic

	Gender	N	Mean	Std. Deviation	Std. Error Mean

Personal Risk	Male	141	3.499	0.726	0.061
	Female	259	3.284	0.756	0.047

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Personal Risk	Equal variances assumed	0.004	0.950	2.757	398	0.006	0.215	0.078	0.062	0.368
	Equal variances not assumed			2.790	297.8	0.006	0.215	0.077	0.063	0.367

One-Way Between-Groups Analysis of Variance for Media Exposure and Social Risk and Personal Risk

A one-way between-groups analysis of variance was conducted to explore the influence of media exposure on levels of social risk and personal risk. Respondents were divided into three groups according to viewing time or their time spent on media (Group 1: 0 – 2 hours; Group 2: 2 to 4 hours; Group 3: More than 4 hours). The results in Table 5 show a statistically significant difference at the p < .05 level in Social Risk scores for the three viewing time groups: F (2, 397) = 9.23, p = .000. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 (M = 4.521, SD = .524) was significantly different from Group 3 (M = 4.732, SD = .380). Group 2 (M = 4.56, SD = .455) did not differ significantly from either Group 1 or 3. However, the results show no significant difference at the p > .05 level in Personal Risk scores for the three viewing time groups: F (2, 397) = 2.90, p = .056.

Table 5
One-Way Between-Groups Analysis of Variance for Media Exposure and Social Risk and Personal Risk
Dependent Variable: Social Risk /Tukey HSD

(I) Media exposure 3 groups	(J) Media exposure 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
0-2 hours	2-4 hours	-0.044	0.068	0.796	-0.203	0.116
	> 4 hours	-.2111*	0.062	0.002	-0.356	-0.066
2-4 hours	0-2 hours	0.044	0.068	0.796	-0.116	0.203
	> 4 hours	-.1675*	0.049	0.002	-0.283	-0.052
> 4 hours	0-2 hours	.2111*	0.062	0.002	0.066	0.356
	2-4 hours	.1675*	0.049	0.002	0.052	0.283

Note: *The mean difference is significant at the 0.5 level.

Dependent Variable: Personal Risk/Tukey HSD

(I) Media exposure 3 groups	(J) Media exposure 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
0-2 hours	2-4 hours	.28591*	0.119	0.043	0.007	0.565
	> 4 hours	0.188	0.108	0.190	-0.066	0.442
2-4 hours	0-2 hours	-.28591*	0.119	0.043	-0.565	-0.007
	> 4 hours	-0.098	0.086	0.494	-0.300	0.105
> 4 hours	0-2 hours	-0.188	0.108	0.190	-0.442	0.066
	2-4 hours	0.098	0.086	0.494	-0.105	0.300

Note: *The mean difference is significant at the 0.5 level.

One-Way Between-Groups Analysis of Variance for Mass Media Exposure and Social Risk and Personal Risk

A one-way between-groups analysis of variance was performed to examine the influence of mass media exposure on levels of social risk and personal risk. Respondents were divided into three groups according to viewing time or their time spent on mass media (Group 1: 0 – 2 hours; Group 2: 2 to 4 hours; Group 3: More than 4 hours). Results in Table 6 show no statistically significant difference at the p > .05 level in Social Risk scores for the three viewing time groups: F (2, 397) = 1.05, p = .352. Similarly, there is no significant different at the p > .05

level in Personal Risk scores for the three viewing time groups: F (2, 397) = 1.07, p = .344.

Table 6
One-Way Between-Groups Analysis of Variance for Mass Media Exposure and Social Risk and Personal Risk
Dependent Variable: Social Risk/Tukey HSD

(I) Mass Media exposure 3 groups	(J) Mass Media exposure 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
0-2 hours	2-4 hours	-0.063	0.050	0.429	-0.181	0.056
	> 4 hours	-0.067	0.066	0.563	-0.222	0.087
2-4 hours	0-2 hours	0.063	0.050	0.429	-0.056	0.181
	> 4 hours	-0.005	0.072	0.998	-0.175	0.166
> 4 hours	0-2 hours	0.067	0.066	0.563	-0.087	0.222
	2-4 hours	0.005	0.072	0.998	-0.166	0.175

Note: *The mean difference is significant at the 0.5 level.

Dependent Variable: Personal Risk
Tukey HSD

(I) Mass Media exposure 3 groups	(J) Mass Media exposure 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
0-2 hours	2-4 hours	-0.041	0.087	0.883	-0.246	0.163
	> 4 hours	-0.165	0.113	0.312	-0.431	0.101
2-4 hours	0-2 hours	0.041	0.087	0.883	-0.163	0.246
	> 4 hours	-0.124	0.125	0.583	-0.418	0.170
> 4 hours	0-2 hours	0.165	0.113	0.312	-0.101	0.431
	2-4 hours	0.124	0.125	0.583	-0.170	0.418

Note: *The mean difference is significant at the 0.5 level.

One-Way Between-Groups Analysis of Variance for Social Media Exposure and Social Risk and Personal Risk

A one-way between-groups analysis of variance was conducted to examine the influence of social media exposure on levels of social risk and personal risk. Respondents were divided into three groups according to viewing time or their time spent on social media (Group 1: 0 – 2 hours; Group 2: 2 to 4 hours; Group 3: More than 4 hours). The results in Table 7 show a statistically significant difference at the p < .05 level in Social Risk scores for the three viewing time groups: F (2, 397) = 5.193, p = .006. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 (M = 4.572, SD = .448) was significantly different from Group 3 (M = 4.727, SD = .380). Group 2 (M = 4.60, SD = .486) did not differ significantly from either Group 1 or 3. Table 6 also shows a statistically significant difference at the p < .05 level in Personal scores for the three viewing time groups: F (2, 397) = 3.378, p = .035. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 (M = 3.518, SD = .655) was significantly different from Group 2 (M = 3.253, SD = .761). Group 3 (M = 3.353, SD = .779) did not differ significantly from either Group 1 or 2.

Table 7
One-Way Between-Groups Analysis of Variance for Social Media Exposure and Social Risk and Personal Risk
Dependent Variable: Social Risk
Tukey HSD

(I) Social Media exposure 3 groups	(J) Social Media exposure 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
0-2 hours	2-4 hours	-0.031	0.059	0.858	-0.170	0.108
	> 4 hours	-.15543*	0.055	0.014	-0.285	-0.026

2-4 hours	0-2 hours	0.031	0.059	0.858	-0.108	0.170
	> 4 hours	-.12427*	0.050	0.036	-0.242	-0.007
> 4 hours	0-2 hours	.15543*	0.055	0.014	0.026	0.285
	2-4 hours	.12427*	0.050	0.036	0.007	0.242

Note: *The mean difference is significant at the 0.5 level.

Dependent Variable: Personal Risk
Tukey HSD

(I) Social Media exposure 3 groups	(J) Social Media exposure 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
0-2 hours	2-4 hours	.26528*	0.102	0.027	0.025	0.506
	> 4 hours	0.166	0.095	0.192	-0.059	0.390
2-4 hours	0-2 hours	-.26528*	0.102	0.027	-0.506	-0.025
	> 4 hours	-0.100	0.087	0.484	-0.304	0.104
> 4 hours	0-2 hours	-0.166	0.095	0.192	-0.390	0.059
	2-4 hours	0.100	0.087	0.484	-0.104	0.304

Note: *The mean difference is significant at the 0.5 level.

REGRESSION ANALYSIS

Results in Table 8 indicated that 5.5% variances in social risk could be explained by gender, media exposure, mass media exposure, and social media exposure (R^2 = 0.05, p < 0.01). Based on the results only two variables; namely gender (β = .105, t-value= 2.11, p < 0.05) and media exposure (β = .171, t-value= 2.731, p < 0.01) were found to have a significant effect on social risk. More specifically, the finding indicates that females and more than 4 hours of media exposure have a significant impact on social risk.

As shown in Table 9, R^2 for the regression is 0.021, which shows that 2.1% of personal risk variation can be explained by gender, media exposure, mass media exposure, and social media. The results show that only gender has a significant effect on personal risk (β = -.127, t-value= -2.524, p < 0.05). The standard beta for gender is negative but significant, indicating that the male's group has more impact on personal risk. Media exposure, Mass media exposure, and Social Media exposure were found to have no significant effect on personal risk.

Table 8
Regression Analysis of Gender and Media Exposure with Social Risk

Dependent Variable	Independent Variable	Std. Beta	t-value	Sig.	VIF	Results
Social Risk	Gender	0.105	2.114*	0.035	1.020	Supported
	Media Exposure	0.171	2.731**	0.007	1.638	Supported
	Mass Media Exposure	-0.004	-0.074	0.941	1.078	Not Supported
	Social Media Exposure	0.044	0.714	0.476	1.616	Not Supported
	R^2	.055				
	Adjusted R^2	.046				
	Sig. F	5.75				

Note: Significant levels: **p < 0.01, *p < 0.05

Table 9
Regression Analysis of Gender and Media Exposure with Personal Risk

Dependent Variable	Independent Variable	Beta	t	Sig.	VIF	Results
Personal risk	Gender	-0.127	-2.524*	0.012	1.020	Supported
	Media Exposure	0.005	0.080	0.936	1.638	Not Supported
	Mass Media Exposure	0.063	1.212	0.226	1.078	Not Supported
	Social Media Exposure	-0.021	-0.324	0.746	1.616	Not Supported
	R^2	.021				
	Adjusted R^2	.012				

DISCUSSION AND CONCLUSION

Based on previous literature (Gerhold, 2020), women are more concerned about Covid-19 compared to men. The results of this research appear to support Gerhold (2020) research outcome to a certain extent. However, this study investigates a deeper aspect of risk perception because according to Tyler & Cook (1984) the study of risk perception should be conducted from two levels, namely social and personal levels. It is shown in this study that women do have positive risk perceptions about Covid-19 on a social level. In other words, women, who are heavily exposed to media feel that society is more vulnerable to Covid-19 than on a personal level. On the other hand, men perceived that individuals have a higher risk of being affected by Covid-19 compared to people at large. The differing in perceptions could be related to the differences in the capacity for empathy between males and females. Stereotypically, females are portrayed as more nurturing and empathetic, while males are portrayed as less emotional and more cognitive. Some authors suggest that observed gender differences might be largely due to cultural expectations about gender roles (Christov-Moore, L. *et al*., 2014). These results appear to support the primary proposition of the Cultivation Theory that states, the more time people spend 'living' in the television/media world, the more likely they are to believe social reality aligns with reality portrayed on television/media.

Like previous research outcome (Hughes, 1980; Skogan & Maxfield, 1981; Tyler, 1980; Tyler & Cook, 1984; Mazur & Hall, 1990; Coleman, 1993), this study also appears to suggest that exposure to media has a significant effect on risk perceptions, particularly on a social level. In other words, heavy viewers or those who are exposed heavily to media contents tend to think that society is vulnerable and might be affected by the Covid-19 virus. Detailed analysis of the media exposure was done by separating media exposure into two categories, namely mass media, and social media exposures show that both categories of exposures show no significant effect on a personal level. This is also indicating that even though respondents that exposed heavily to media contents, they were personally not in any way affected by what they saw on media.

In conclusion, this study has shown that both hypotheses were somehow proven. It appears that gender and media have some effects on risk perceptions, although the effect was only on a social level. These results partly support the proposition of the Cultivation Theory. This study suggests that although media effects are present when exposure is high, the effect is not applied to all situations. This study has shown that 'heavy viewers' perceptions about risk were only heightened when it involves other people. They seem to be afraid that people at large might be affected by the Covid-19 virus compared to themselves (personal level). The reasons behind the differences in effect are unknown but this could be an interesting issue to explore in the future.

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