

The Impact of New Media Usage on Risk Perception of International Students in North America from the Mainland China during Covid-19 Pandemic

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Abstract. In the post-pandemic era, China and countries in North America have adopted completely different COVID-19 policies, so the content and attitudes of the pandemic information on the media platforms are also different, which means that the media environments of the two places are quite different. For international students, whether their risk perception is affected and their behavior changes in different media environments is an interesting topic worth exploring. In this study, media usage, risk perception and behavior of international students in North America from mainland China during the pandemic were investigated in the form of questionnaires. The study found that these students perceived less risk after going abroad and showed stronger intention to reduce preventive behavior and increase recreational activities such as eating out with more people. Therefore, this study can indicate that changes in media environment together with media usage can affect people's risk perception and have a significant impact on people's behavior.

Keywords: New media usage; Risk perception; International students; COVID-19 pandemic

1. Introduction

COVID-19 is a worldwide pandemic caused by the coronavirus 2 that causes severe acute respiratory illness (SARS-CoV-2). The disease was discovered in late 2019 in Wuhan, Hubei Province, People's Republic of China, and quickly spread to many nations across the world in early 2020, eventually becoming a global pandemic. As of October 17, 2022, over 625 million confirmed cases have been recorded globally, with over 6,568,000 fatalities and a fatality rate of over 1.05%, making it one of the biggest epidemics in human history. Death estimates vary greatly throughout the world, with recorded mortality rates ranging from 0.5% to 5.0% in most nations.

Due to the rapid spread of COVID-19 worldwide, the Ministry of Foreign Affairs, PRC and the National Immigration Administration have jointly issued a series of entry and exit policies: Suspend the entry of foreigners with APEC business travel cards from March 28, 2020, at 00:00. Suspension of port visas, 24/72/144-hour transit visa waiver, Shanghai cruise visa waiver, and 144-hour visa waiver for foreigners from Hong Kong and Macau entering Guangdong in groups, etc. Furthermore, close contacts, entrants are subject to 7 days of intensive isolation medical observation + 3 days of home health monitoring isolation mandatory control. There are also a variety of "gathering restrictions" have been introduced. This has left the Chinese population in a somewhat restricted environment where travel, recreation, and study abroad have been put on hold. This has been replaced by strict mask wearing habits and self-disinfection practices.

From the end of 2019 to the end of 2022, the domestic media in China is full of information about the Covid-19 epidemic, and most of the information is positive, such as "fighting the epidemic together", "strictly implementing the epidemic prevention policy" and "actively complying with the epidemic prevention regulations". The Chinese people have shown a high degree of cooperation in such a monolithic news environment.

China is the largest country of study in the U.S., with 348,900 international students from China in 2021, according to U.S. Immigration and Customs Enforcement (ICE). As students from mainland China studying in the U.S. are in a culturally different environment, paying attention to and receiving information from overseas new media platforms is the primary way to guide their lives abroad and influence their perceptions, attitudes, and behaviors toward the external environment. In public health events, the media is an important source of risk information, and the media's focus on the event and its dissemination may influence the public's understanding and response to risk information, as well as their perceptions and judgments of social risks.

Since the onset of the COVID-19 pandemic, China has treated the COVID-19 pandemic differently than the United States and other North American countries, so there are differences in the reporting of the epidemic information on new media platforms in both countries. In addition, there is a big difference in the mindset of the residents of the two countries. Chinese people are more traditional and conservative in their thinking. People believe that peace is the most important, so they will consciously follow the order and regulations. This is also the subtle influence of Chinese history and culture on people. North America, on the other hand, is more liberal. Individual freedom is above all else, so it will be difficult to be bound by rules. In the face of an epidemic, the general environment in China, people will be more disciplined in their behavior because they will be afraid to see words such as increased cases and accelerated spread of the virus. In other words, Chinese people are more sensitive and less tolerant of risk perception in this regard. In contrast, the general perception in North America is that epidemics are not a factor that affects normal life. Thus, in this environment, if a control is added, people will not only not comply, but may also cause a resistance movement.

As a result of changes in the internal and external environment, information is received from different sources, so group behavior may be different from that in mainland China. This paper aims to understand the changes in risk perceptions and behaviors of Chinese students in North America after they have paid attention to the information about the New Coronary Pneumonia epidemic on overseas new media platforms, to provide a reference for new media platforms to pay attention to and report on risk information issues.

2. Literature Review

Risk perception is defined that be formed by people's comprehensive judgment of all kinds of information, which is used to judge to what extent the risk is related [1]. Tyler developed the theory and classified the risk perception in two categories including personal level and societal level in his impersonal impact hypothesis [2]. Current researches toward risk perception have roughly been divided into three areas, psychological researches, cultural researches and the media research.

Psychological research on risk perception mainly focuses on psychological measurement models, which could go back to the Theory of Planned Behavior [3], and Heuristic-Systematic model [4] that be developed in early psychological researches. Based on the researches, Griffin et al. subdivided perceived risk characteristics into four parts: perceived possibility, perceived severity, organizational trust and personal control [5] in 2004. In the area of cultural researches, Douglas et al. tried to use cultural theory to analyze risks in the real society in their book *Risk and Culture* in 1983. They believed that people with different cultural preferences paid attention to risks, which all reflected ideologies and cultural beliefs in a specific social environment [6].

Risk perception researches in media area are mostly through questionnaires and structural equation models to examine the relationship between media-related variables and public risk perception. Choi et al. explored the role of social media in shaping public risk perception in the context of the MERS outbreak in South Korea, found that social media has a significant positive impact on public risk perception [7]. Oh, S.H. et al. took the H1N1 flu in South Korea as an example to discuss the impact of public information exposure to news media and entertainment media on the risk perception. The research results showed that public information exposure to news media would have an impact on

social level risk perception. Information exposure to entertainment media will influence the risk perception at the individual level and the social level [8].

During the Covid-19 pandemic, more researches are conducted to explore the connections among media use, risk perception and behaviors. According to Rather's findings, perceptions of risk and fear of COVID-19 have significant negative effects on attitudes. There is a significant positive correlation between attitude and co-creation and revisit intention. Furthermore, it has been found that fear of COVID-19, perceived risk, and social media indirectly promote co-creation and/or revisit intentions by encouraging tourists to engage with the brand and attitude towards the destination during pandemics [9].

By collecting questionnaires and constructing descriptive statistics, Rayani, Rayani, and Sharjabad found that the preventive behaviors of Iran students in Persian Gulf University is related with their risk perception and health information seeking toward Covid-19. The authors also indicate that nearly half of subjects are unaware of complete symptoms of Covid-19, and they have relatively low risk perception [10]. Zhao proposed that social media usage has positive association with people's anxiety, while people's anxiety is also positively correlated to their risk perception in the Covid-19[11].

Although there are many scholars do the research on risk perception, few scholars pay attention to the impact of media environment changes on risk perception, especially those who have experienced media environment changes. This study focuses on international students from mainland China in North America, who are a special but very worthy group. They have experienced changes in the media environment, which is mainly due to the different COVID-19 policies adopted by different countries. By observing this group of international students, this paper will explore the influence of changes in media environment on risk perception and behavior.

3. Methodology

To test the hypothesis, this paper gathered data through conducting the questionnaire in a Chinese platform called Wen Juan Xing. The survey's target audience is the Chinese students of age 18+ who have studied in North America during the pandemic. Starting from October 20th, 2022, the authors sent out the questionnaires on one of the most popular Chinese social media platforms: Sina Weibo, often simply called "Weibo". Up to November 19th, 2022, 44 results were collected. Since researchers did not detect any incomplete and obviously unreasonable response, all 44 collected results were effective in total.

The questionnaire included three main parts. The first part centers on individual hygiene habits and social media usage, including frequency, platform, and content. The second part focuses on individual risk perception toward Covid-19 after browsing the related information on social media. In the final section, participants need to fill in their demographic information, including gender, age, grade, the time they stayed overseas, and whether they had Covid-19 before. For the answer setting, this paper utilized Likert-Scale in rating the participants' answers for data analysis. Likert-Scale is widely used as a rating scale in psychological questionnaires. In this paper, 5 level score: "1" indicates "disagree", while "5" indicates "agree".

4. Result

The questionnaire was administered in the form of matrix scale questions to international students in North America (Chinese students who had studied in North America during the Covid-19 epidemic or are currently studying in North America). Of the fifteen survey questions, five were related to background information about the survey population. These five questions were in the last part of the questionnaire to make such questions, which may be designed for privacy and sensitive information, unobtrusive and to reduce respondents' resistance to participate in the survey. Improving response rate and reliability of questions in the key information category. First, gender was asked, with 10 men and 34 women in the final valid questionnaire, accounting for 22.73% and 77.27% respectively. Next,

the age of the respondents was categorized and counted. Students aged eighteen and below and thirty and above were not included. 86.36% people between the ages of eighteen and twenty-two had the largest proportion. There were 11.36% people (between twenty-two and twenty-six years old. There was 2.27% person between the ages of twenty-six and thirty. Of these, 86.36% are undergraduate students and 13.64% have graduated. The penultimate question investigated the duration of these students' study abroad to distinguish the difference in the frequency of exposure to different media depending on the length of residence in North America. 22.73% of them were less than or equal to 1 year; 36.36% were between 1 and 2 years; the fewest were between 2 and 3 years, with 2.27%; and the most were 3 years and above, with 38.64%. The last question was the one that involved the most private information: about the respondents' experience of having been infected with the Covid-19 virus. Among the respondents 70.45% had not been infected and 29.55% had been infected. An additional question immediately following for those who filled in yes in the previous question further confirmed the location of their diagnosis: 92.31% were infected overseas and only 7.69% was infected in mainland China.

The first question of the questionnaire addresses the general attitude of the respondents regarding the risk perception of Covid-19. When respondents were asked if they take care of their personal hygiene, 4.55% disagreed, 6.82% slightly disagreed, 13.64% neither agreed nor disagreed, 31.82% slightly agreed and 43.18% agreed. When respondents were asked if the pandemic has no effect on their preventive behavior, 47.73% disagreed, 18.18% slightly disagreed, 9.09% neither agreed nor disagreed, 13.64% slightly agreed and 11.36% agreed. In addition, for the statement that the epidemic had no impact on entertainment, 45.45% disagreed, 27.27% slightly disagreed, 9.09% neither agreed nor disagreed, 6.82% slightly agreed and 11.36% agreed.

When asked whether they took the initiative to pay attention to the information related to the epidemic on new media, more than 50% of the respondents agreed, among which 40.91% slightly agreed, 18.18% agreed and 6.82% disagreed. As for whether to pay more attention to the epidemic information after going abroad, 29.55% of respondents slightly agreed, 22.73% agreed, 6.82% disagreed and 22.73% disagreed. Among the platforms that respondents frequently exposed information about the COVID-19 pandemic, social media, such as Facebook, Twitter, Youtube, Instagram, Telegram, etc., has the most agreement and slightly agreement, accounting for 63.64%. The second is news media, such as the New York Times, BBC news, etc., accounting for 47.73%. Search engines such as Google accounted for 45.46%, while mass media accounted for the least at 40.91%. Regarding the attitude of receiving information about the COVID-19 pandemic on the media platform, 68.19% respondents agreed or slightly agreed that the epidemic situation has stabilized; 50% agreed or slightly agreed that the epidemic control has been lifted, and 38.64 respondents agreed or slightly agreed that the outbreak was over. It is worth noting that 43.18% of respondents still agree or slightly agree that the epidemic situation is serious.

Among the information about the COVID-19 received on the platform, 68.19% of respondents agreed or slightly agreed that the information is about that epidemic situation has stabilized, 50% agreed or slightly agreed that the information is about that the epidemic control has been lifted, and 38.64% agreed or slightly agreed that the information is about that the epidemic situation has ended. Among the respondents' attitudes towards the epidemic, 61.36% agreed or slightly agreed that epidemic prevention and control should be lifted; 50% of respondents agreed or slightly agreed that they have the risk to be infected; 45.45% of respondents agreed or slightly agreed that the epidemic was over; Only 29.55% of respondents agreed or slightly agreed that the COVID-19 was life-threatening.

In terms of participants' attitudes towards the pandemic, more than half of the respondents agree the pandemic has become normal; however, 36.37% of the respondents agree the pandemic situation is still serious and 50% of them think it is necessary to control the pandemic. Also, 40.9% of the participants said they are still afraid of catching the virus, and 50% of them believe the virus will have effects on them. When asked about the comparison of their behaviors before and after going abroad, 68.18% participants indicate that they feel more safe eating outside after they go abroad, and

only 13.6% participants oppose. There is a major difference between participants' mask wearing behaviors before and after they go to North America, as 63.6% of them reported their mask wearing behavior has changed. Also, in respect of subject's recreational behaviors, 52.3% of subjects reported both their outdoor activities, disinfection behavior, and travel behaviors have become different, while 56.8% of participants reported their change in the frequency of going to the cinema. In addition, around 20% of participants choose "Neither disagree nor agree" in their answer in average.

When it comes to the objectivity of COVID-19 related information released on new media platforms, 34.09% of respondents maintain a neutral attitude, 31.82% of respondents believed that the provision of COVID-19 related information was basically objective, but not completely objective; 20.45% believe that the provision of COVID-19 related information is slightly less objective, but not completely so, and there may be some objectivity; a minority of 9.09% thought that the provision of COVID-19 related information was completely objective. A very small number of respondents, 4.55%, thought it was not objective at all.

When asked about the timeliness of providing information related to COVID-19, more than half of the respondents 63.63% think it is timely enough, 22.73% maintain a neutral attitude, and only a minority 13.63% think it is not timely enough. Regarding the accuracy of information related to COVID-19, 45.45% of respondents maintain a neutral attitude, while 25% think it is not completely accurate, but not completely inaccurate. 18.18% of respondents think it is basically accurate, very few 6.82% and 4.55% think it is completely accurate and think it is completely inaccurate. On the question of the comprehensiveness of information related to COVID-19, 36.36% of respondents think the information is basically comprehensive, 22.73% think it is slightly incomplete, 6.82% and 2.27% think it is completely accurate and completely inaccurate, and 31.82% remain neutral.

In response to the question about the credibility of information related to COVID-19, 43.18% of respondents remain neutral, 31.82% think it is somewhat credible, 18.18% think it is somewhat untrustworthy, and very few respondents, 2.27% and 4.55%, think it is completely credible and completely untrustworthy.

5. Discussion

The survey results of those international students' attitudes towards the COVID-19 can reflect that they perceive the risk to be lower after going abroad. The majority of respondents believe that epidemic control should be loosened, which is related to the information they have received, as most of the information they have been exposed to is about the situation stabilizing after going abroad. Second, nearly half of the respondents agreed that the epidemic was over, while only about one-third agreed that they received information about the epidemic being over, indicating that other factors influenced their risk perception that the epidemic was over. These other factors may come from the attitude and lifestyle of those close to the respondents, or their own experience with COVID-19, which makes them think that the pandemic is no longer scary, just like a common cold.

In terms of their attitude towards preventive behavior to the pandemic, many respondents still believe that prevention and control are necessary. Along with the decline of daily Covid-19 cases worldwide, it is common for participants to reduce their risk awareness of the virus and return to their normal life. However, since the subjects have experienced the pandemic peak and the media has constantly reported the pandemic situations, including the increasing cases, side effects, and negative impact of Covid-19, it is inevitable for them to have the prevention realization. In addition, nearly 70% of participants reported they were never diagnosed with Covid-19 before, so their fear of getting an infection is well-understood due to the unknown long term side effect of the virus. Generally, people's prevention awareness towards the pandemic is understandable and beneficial to control the virus, as long as their fear will not impact their social life and career in a serious level.

Although many participants' attitude towards the pandemic situation is negative, most of them experience a change in behavior, including the mask wearing behavior, frequency of dining out and frequency of recreational activities. Regarding 68.18% participants indicating that they feel safer

dining out after they go abroad and 63.6% subjects change their mask wearing behaviors, researchers believe the theory of conformity can help to explain these phenomena. Since the control policy overseas is not as strict as it is in mainland China and the media information overseas about the pandemic is more positive, people overseas tend to eat more frequently outside and wear less masks. Thus, when participants go abroad, they tend to follow the public, increasing their frequency of dining out and recreational activities, while decreasing the mask wearing behaviors. Since the researchers believe that the sooner people get back to normal life the better for their psychological health and social stability, the change in participants' behavior in this survey is beneficial. This change also shows the impact of the media and environment to people's behaviors under the pandemic.

About the trust of media platforms, respondents believe that the information about COVID-19 on new media platforms is not consistent with the real social situation, but it is basically objective. Relevant information in the aspect of timeliness, according to the answer situation seems to have the timeliness. In terms of accuracy, students tend to doubt and distrust accuracy, and relevant information may not be able to accurately serve as a reference standard for their own attitudes and behaviors. In terms of comprehensiveness, relevant information is generally comprehensive, which can meet the daily needs of information. As long as the relevant information is transmitted on the new media platform, it will have a certain credibility. However, in daily life, they are not completely convinced by the relevant information provided, and the majority of these groups remain neutral. To conclude, respondents' attitudes about the credibility of media platforms tend to be neutral, that indicates in this case, media platforms' credibility has little influence in respondents' risk perception and behavior.

6. Conclusion

This study explores the media usage of North American students from mainland China who have experienced media environment changes, and further investigates their risk perception and behavior towards the pandemic. The study showed that more than half of the respondents actively follow information about the pandemic on media platforms, of which social media like Facebook, Instagram has the highest proportion of use. Of the epidemic information content received, the largest proportion was about the epidemic has stabilized, about 68 percent. In terms of the attitude towards the pandemic, more than 60% of the international students in North America agreed that epidemic prevention and control should be relaxed, and nearly half of the respondents believed that the epidemic was over. Therefore, most of the respondents' risk perception of the pandemic was reduced after going abroad, which was related to their different media environments and media usage habits. The findings demonstrate that changes in the media environment affect people's risk perception of the pandemic, and this effect occurs through a combination of people's frequency of media use and their exposure to information about the pandemic. The survey results also illuminated that although these students in foreign countries had a reduced risk perception of the epidemic, they still focused on individual pandemic preventive behaviors. Many respondents still believed that prevention and control were necessary, but most of them experienced changes in behaviors, including the behavior of wearing masks, the frequency of eating out and the frequency of recreational activities. They tend to wear masks less after going abroad, and agree that it is safe to go out and eat with many people, which indicates that risk perception also has a significant impact on the change of behavior.

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