Original Research

Need to investigate COVID-19 beliefs for tailor-made sensitisation campaigns

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A B S T R A C T

Objectives: The main objective of this study was to investigate the COVID-19 beliefs of a random sample of Mauritian social media users.
Study design: Cross-sectional study.
Methods: This quantitative research was undertaken by means of an online survey instrument, with questions on participants' behaviour towards COVID-19 and their beliefs with respect to susceptibility, barriers, benefits, cues to actions and self-efficacy.
Results: In total, 405 participants completed the survey. Participants had a low mean COVID-19 perceived susceptibility and perceived severity. Significant differences in susceptibility were observed among different age groups, places of residence and educational levels. A significant difference in self-efficacy was found between people living in urban and rural areas. Participants aged <39 years showed a significantly lower perceived benefit of staying at home to avoid COVID-19 infection compared with those aged 39–54 years. Multiple linear regression modelling revealed that participants aged 39–65 years and those who were single were the most concerned about the risk of COVID-19 infection.
Conclusions: The findings of this study provide the basis for evidence-based health education programmes that are tailor-made for specific targeted audience. Sensitisation campaigns on the benefits of staying home should be aimed at younger social media users (aged <39 years). Community health centres in rural areas need to be involved in providing educational videos to empowering people towards self-efficacy.

1. Introduction

The current COVID-19 pandemic [1] constitutes a public health threat to both developing and developed countries, and the global challenge is to curb the incidence of COVID-19 [2]. One of the four key areas of the comprehensive strategy to prevent COVID-19 is communication with the population about the risks of transmission and the means of prevention [3]. Providing information to the general public is vital because COVID-19 is highly infectious [4] and its complications include acute respiratory distress syndrome, septic shock, metabolic acidosis, bleeding and coagulation dysfunction [5]. Since the declaration of the COVID-19 pandemic, health education campaigns have been initiated worldwide to advise the general public about protective measures. The self-protection measures recommended by the World Health Organisation (WHO) include the following: (i) washing hands with soap and water or using an alcohol-based gel; (ii) avoiding touching the eyes, nose and mouth; (iii) maintaining at least 1-m distance with others; (iv) staying at home and self-isolating; (v) avoiding going to crowded places; (vi) wearing a mask to avoid infecting others [3].

According to the Health Belief Model [6] (HBM), individuals will adopt protective health behaviours if they believe that they (i) are personally susceptible to developing the disease, (ii) perceive the disease to be severe, (iii) perceive the preventive action to be effective in reducing the threat and (iv) are capable of performing the preventive action. Healthy behaviour is thus a resultant of several factors, namely, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy [7]. With reference to Mukhtar [8], an individual will be more efficient in adopting the

preventive measures if the perceived threat is greater. On the other hand, results from Van den Broucke [9] suggest that a person may not consider themselves at risk if they have not been in contact with any other contaminated person. Bavel et al. [10] highlight that the social and behavioural sciences have a major role to play in promoting healthy behaviour; for instance, focusing on worst-case scenarios, even if they are uncertain, has the potential to encourage people to adopt the relevant preventive measures. Prati et al. [11] emphasised the importance of building public trust and understanding risk perception and affective response for adoption of recommended behaviours. In addition, the knowledge of an individual will influence their behaviour in terms of COVID-19 precautionary measures [4].

In terms of Asian countries, online surveys revealed a high level of perceived severity in China [12], and a high level of perceived risk of COVID-19 in Hong Kong and South Korea where respondents adopted self-protective measures [13,14].

In the US and UK, participants generally demonstrated a good knowledge of the disease; however, misconceptions on the means of its prevention were evident [15]. Czeisler at al [16]. showed that 77.3% of adults in the US reported self-isolating and 57.5% reported always wearing masks when going out. Although there was a high percentage of UK adults willing to self-isolate for 7 days (87%), people from disadvantaged backgrounds were less likely to be able to work from home or self-isolate [17].

With reference to other developing countries, most respondents in Northern Iran [18] had relatively high perceived susceptibility, perceived severity, perceived benefits and perceived self-efficacy, while Nasir and Almahdi [19] reported that respondents in Sudan showed low perceived susceptibility and severity.

To date, there have been no studies on COVID-19 perceived risk and perceived severity in the tropical island of Mauritius, where the management of the COVID-19 outbreak included various levels of prevention [20,21]. The public health response of the authorities included a communication strategy put in place to provide COVID-19 health information on self-protection [22]. The health sensitisation campaigns delivered by the government are to be commended. Nonetheless, the impact of these campaigns on the Mauritian population needs to be evaluated to enable evidence-based policy decisions in the future. This study was designed with the aim of investigating the impact of the COVID-19 health education campaigns on the Mauritian population with the objectives being as follows: (1) to determine the behaviour adopted by a random sample of Mauritian social media users in the prevention of COVID-19 infection; and (2) to investigate the beliefs of participants with respect to COVID-19.

2. Methods

2.1. Study design

A cross-sectional study was designed for the purpose of this research to assess the beliefs and behaviour of participants in the prevention of COVID-19 infection.

2.2. Targeted population

A random sample of Mauritian social media users constituted the study population. Recruitment was undertaken in a snowball manner on the social media platform Facebook from 27 April to 28 May 2020. A 'Participation Invitation Note' was sent to prospective participants. We set adult Mauritian males and females as inclusion criteria and excluded participants aged <18 years.

2.3. Sample size

With the population of the island of Mauritius consisting of 1.3 million inhabitants, the calculated sample size was 399, as per Slovin's formula.

2.4. Survey instrument

A simple and short online questionnaire was created using Google Forms. A Google Form link containing the questionnaire and information sheet was generated and shared on different platforms on social media to recruit participants.

2.5. Ethical considerations

Ethical clearance was obtained from the University of Mauritius Research Ethics Committee (reference number 2020-0001). Anonymity of participants' responses on the Google Forms was ensured through deactivation of the Google survey option to automatically save email addresses of participants.

2.6. Data analyses

Data were input with the use of the SPSS 23 software to perform the different statistical analyses in order to determine the behaviour adopted by a random sample of Mauritian social media users in the prevention of COVID-19 and to investigate the beliefs of participants with respect to the disease. The analysis of the independent variables, namely psycho-socio-demographic parameters, and the dependent variables, namely recommended behaviours, were analysed for the purpose of this study. Statistical analysis, mainly Kruskal Wallis and pairwise Mann Whitney U comparison, was performed to investigate any association between demographic variables and the HBM components, namely perceived susceptibility, perceived severity, perceived barriers, perceived benefits, cues to actions and self-efficacy.

Belief and behaviour scores were calculated and multivariable linear regression was carried out. The behaviour scores and belief scores were the dependent variables and demographic variables were the independent variables to determine the factors associated with each of the scores. Furthermore, the belief scores and behaviour scores were analysed to determine if there were any differences in their means and if they were correlated.

Behaviour questions were given scores of 0 for 'No' and 1 for 'Yes', and the belief responses varied with scores from 0 for 'strongly disagree' up to 5 for 'strongly agree'. Items were evaluated for internal reliability using the Cronbach's α. The Cronbach's coefficient for the belief was 0.615, which indicated an acceptable reliability.

3. Results

3.1. Demographic characteristics

A total of 405 participants from various areas in Mauritius participated in the study. The majority of respondents were aged 24–38 years (59%, n = 239), with a predominance of females (62.6%, n = 252). In terms of family life, 62% of participants were single (n = 251) and 71.4% had no children (n = 289). Table 1 shows the demographic characteristics of study participants with respect to the belief and behaviour scores. The belief score differed significantly across the age groups and marital status, with a p-value <0.001; whereas, the behaviour score was not statistically different across subgroups.

3.2. Source of health information

Our study reveals that 97.5% (n = 395) of participants received health messages regarding COVID-19 preventive measures from the Ministry of Health of Mauritius and 99% (n = 401) received information from other sources. However, 28.9% (n = 117) of participants believed there is a media exaggeration of the COVID-19 situation. We note that 5.4% (n = 22) of respondents had to consult a doctor for fever, cough,

Table 1
Belief and behaviour scores by demographic characteristics.

Variable	Behaviour Score (mean ± SD)	Belief Score (mean ± SD)	Behaviour F	p-value	Belief F	p-value
Gender			1.106	0.294	0.019	0.892
Male	4.54 ± 0.743	33.21 ± 4.231				
Female	4.62 ± 0.690	33.15 ± 4.155				
Age group (years)			3.025	**0.050**	8.895	**0.000**
18-39	4.56 ± 0.747	32.74 ± 4.103				
39-65	4.75 ± 0.493	34.87 ± 4.096				
>65	4.00 ± 1.414	35.50 ± 2.121				
Marital Status			4.265	0.150	7.190	**0.001**
Single	4.53 ± 0.723	32.73 ± 3.756				
Married	4.73 ± 0.568	34.18 ± 4.071				
Other	4.67 ± 0.723	31.17 ± 7.057				
Residence			1.807	0.159	**0.01**	0.971
Urban	4.53 ± 0.770	33.18 ± 4.052				
Rural	4.63 ± 0.668	33.17 ± 4.267				
Education			0.997	0.370	0.169	0.845
Primary	4.53 ± 0.756	33.36 ± 3.869				
Secondary	4.51 ± 0.766	32.95 ± 3.867				
Tertiary	4.62 ± 0.687	33.21 ± 4.319				
Financial Status (Rs)			0.792	0.531	1.562	0.184
<20,000	4.53 ± 0.772	33.33 ± 3.869				
20,000–50,000	4.63 ± 0.693	33.11 ± 4.413				
50,000–80,000	4.63 ± 0.742	35.00 ± 3.742				
80,000–100,000	4.81 ± 0.403	34.69 ± 4.629				
>100,000	4.71 ± 0.611	33.43 ± 3.673				

Rs, Mauritian Rupee; SD, standard deviation.

shortness of breath during lockdown, and 63.5% (n = 257) admitted having gone out during the lockdown period, for which the main reasons were grocery shopping, essential service workers and seeking medical help for themselves or a family member.

3.3. Preventive measures

Results show that most of the participants were taking the preventive measures to reduce transmission of COVID-19. The Kruskall Wallis test was performed between the HBM and age, area of residence and educational level at a 95% confidence interval. Perceived susceptibility, perceived severity and perceived benefits are HBM components that vary significantly with age.

3.4. HBM components

The mean rank for perceived susceptibility was statistically significantly lower for the 18–23 years age group. The pairwise Mann Whitney U comparison has shown that older people are statistically more likely to believe that the consequences of contracting COVID-19 are severe compared with younger individuals (adjusted significance 0.00 when comparing 18–23 and 39–54 years-old age groups; adjusted significance 0.001 when comparing 18–23 and 55–65 years-old age groups; adjusted significance 0.000 when comparing 24–38 and 39–54 years-old age groups; adjusted significance 0.002 when comparing 24–38 and 55–65 years-old age groups [N: 86, mean rank:167.30] compared with 24–38 and 55–65 year old age groups [N: 239, mean rank: 211.50 and N: 12, mean rank: 278.83, respectively].

When analysing the results for HBM against area of residence, it shows that perceived severity and perceived barriers were statistically significant between urban and rural areas. A U test determined that the susceptibility of contracting COVID-19 and perceived benefits of prevention measures were not significantly different in urban and rural areas. The association between educational level and perceived severity was shown to have a significant p-value. Upon carrying out a pairwise comparison, using the Mann Whitney U test, a significant difference was found among the School Certificate holders compared with the Higher School Certificate holders. A higher mean rank (254.63) was found for the School Certificate holders compared with the Higher School Certificate holders (170.64).

The Mann-Whitney U test was performed on HBM questions against gender, place of residence, smoking status and parental status. It can be seen that gender has no statistical significance with any of the HBM questions. With respect to place of residence, perceived severity and perceived barriers are statistically significant with a p-value of 0.046 and 0.028, respectively. Parental status has a significant p-value of 0.02 with perceived barriers and the Mann-Whitney test showed that participants with one or more children showed a statistically significant higher perceived severity (p = 0.000 with mean rank of 244) compared with those who had no children.

A further study was carried out with HBM components and the health status of participants. A U test showed there was no significant difference between smokers and non-smokers. A Mann-Whitney test showed that perceived susceptibility was higher (p = 0.018) with a mean rank of 247 for participants experiencing lung comorbidities (only for the susceptibility question on their belief of risk of catching COVID-19). Higher susceptibility (p = 0.018, p = 0.007) and severity (p = 0.002) were found to be significant in diabetic compared with non-diabetic participants, with corresponding higher mean rank for both perceived susceptibility (267, 276) and severity (288).

The Mann Whitney U test showed that perceived severity was found to be significantly higher in individuals experiencing heart disease (p = 0.016), with mean rank of 335.6. Perceived severity was also found to be significantly higher (p = 0.001) in those with hypertension, with a mean rank of 282 (for only one susceptibility question - believe that their own risk was higher than other people). Perceived severity was significantly higher (p = 0.01) for the hypertensive participants, with a mean rank of 262.

The mean value of the belief score was 33.17 ± 4.179 and that of the behaviour score was 4.57 ± 0.711. A correlation analysis between the belief and behaviour scores showed that they were correlated with a Pearson's correlation coefficient of 0.266 (p = 0.000), which is statistically significant. Multiple linear regression analysis was performed with the behaviour and belief scores against the demographic variables and the results are shown in Table 2. For our modelling study, we choose a p-value of 0.2. We found that for the belief score, only the age group 39–65 years (β = 0.042, p = 0.009) and the marital status single (β = −0.354, p = 0.104) were significant. For the behaviour score, only the age group >65 years was statistically significant (β = −0.080, p = 0.172). Results show that Mauritians have low sensitivity towards the

Table 2
Regression results for behaviour and belief scores with related factors.

Variable	Behaviour β [SE] (p-value)	Belief β [SE] (p-value)
Gender		
Female	−0.014 (0.812)	0.028 (0.632)
Age group in years		
39–65	0.042 (0.545)	0.177 (**0.009**)
>65	−0.080 (0.172)	0.022 (0.699)
Marital Status		
Single	−0.354 (0.222)	−0.462 (**0.104**)
Married	0.394 (0.382)	−0.360 (0.210)
Residence		
Urban	−0.060 (0.291)	0.000 (0.992)
Education		
Secondary	−0.021 (0.811)	−0.020 (0.819)
Tertiary	−0.003 0.969)	−0.027 (0.757)
Financial Status in Rs		
20,000–50,000	0.070 (0.285)	−0.032 (0.617)
50,000–80,000	0.031 (0.633)	0.059 (0.356)
80,000–100,000	0.069 (0.255)	0.030 (0.609)
>100,000	0.026 (0.683)	−0.072 (0.244)

Rs, Mauritian Rupee; SE, standard error.

severity of COVID-19 and that this perception is heterogeneous among people of different age groups, places of residence, educational levels and comorbidities. Participants in the age group 39–54 years perceive quarantine to be a preventive measure, whereas those in younger age groups do not.

4. Discussion

4.1. Knowledge

Results of the current study show that 89.9% of the participants correctly identified the knowledge question on COVID-19. The education level of the study population, with 73.8% of participants having a Bachelor's degree, is considered to be one of the factors contributing to the high level of knowledge on COVID-19. The governmental communication strategy, with daily updates on the news platforms informing people on the pandemic, is considered as the second factor contributing to the high level of knowledge on COVID-19, as 97.5% participants received information from local sources. Indeed, the local Ministry of Health along with the public and private media platforms have carried out an intensive sensitisation campaign on the COVID-19 pandemic. This study showed that 50% participants believed that the COVID-19 outbreak has been well managed by Mauritian authorities. Such a positive response is explained by the prompt governmental response in implementing confinement measures [22]. A study conducted in China showed that the majority of participants were convinced that their country would overcome the COVID-19 epidemic [4].

4.2. Susceptibility

This study showed that participants had a low mean perceived susceptibility of 33.9% and perceived severity of 24.4%; these findings are similar to a Sudanese study [19] that also reported a low perceived susceptibility and severity (45% and 40%, respectively). Nasir and Almahdi explained their findings with the concept of 'optimism bias', which is a belief that a negative COVID-19 event is less likely to happen to them due to the geographically long distance from China [19]. For the case of Mauritius, in line with Nasir and Almahdi [19], we attribute our findings to optimism bias, but also to the closure of our international borders and lockdown of the whole country, followed by a total sanitary curfew. On the other hand, a study by Kwok et al. [13] in Hong Kong showed the participants had high perceived susceptibility (89%) and severity (97%), which were attributed to the shared border and high connectivity with China. The authors highlighted that "visitors from mainland China have never been fully banned from entering Hong

Kong".

4.3. Severity

This study in Mauritius revealed a significant difference in perceived severity between Mauritian participants with and without comorbidities. This is explained by the fact that local and international media platforms, based on the WHO Situational Report [3] have reported that older people and those with underlying medical conditions are more prone to develop serious complications of COVID-19. The current study also showed a statistical difference with respect to perceived severity among participants of different age groups and educational levels, which is in line with results from a study by Costa [23] in Brazil where a significant difference in perceived severity was observed among different schooling levels.

4.4. Self-efficacy

A significant difference in self-efficacy was found between participants living in urban and rural areas of Mauritius. A higher mean rank for self-efficacy was found among participants living in urbans areas than those living in rural regions. In the study by Van den Broucke [9], 73% of the participants considered themselves capable of self-isolation, even if there was no lockdown. Although the perceived threat of COVID-19 in the Mauritian study population was low, participants showed a high level of self-efficacy. Atchison et al. [17] also showed that there was a high percentage of people willing to self-isolate for 7 days; however, this study pointed out that people from disadvantaged backgrounds were less likely to be able to work from home or self-isolate [17].

4.5. Perceived benefits of prevention measures

In terms of perceived benefits of prevention measures, which refers to the effectiveness of the behavioural mechanisms adopted to prevent the infection [23], 60% of participants believed that by staying home, they would not be infected with COVID-19. Our study showed that there is a statistically significant difference between the different age groups and the perceived benefits of staying at home to avoid COVID-19 infection. Respondents aged 39–54 years showed a higher perceived benefit of staying home than those aged <39 years. These results are in line with a study in Hong Kong where the older age group (i) felt more susceptible to contracting severe acute respiratory syndrome (SARS), (ii) perceived SARS as having more serious consequences; and (iii) believed in greater benefits from the preventive measures [24]. Similar results were found by Van den Broucke [9] who states that people tend to underestimate the severity of COVID-19 when they hear from the media that most fatalities are older people or those with pre-existing morbidity.

4.6. Cues to action

The majority (91%) of participants admitted to washing their hands to maintain good health. Although no significant differences were obtained between this perceived cue to action and demographics, we can reasonably assume that external cues, as defined by Alsulaiman and Rentner [25], such as international media coverage on the pandemic and the local campaigns on preventive measures, have contributed to this behaviour. The majority (93%) of participants disagree with the proposition that washing hands is a waste of time. This finding is consistent with the high rate of participants having adopted this preventive measure, believing in its importance in preventing the spread of COVID-19. Individuals with less perceived barriers are more likely to wash their hands than those with a higher perceived barriers [25].

4.7. Limitations and strengths

The study population of this online survey consisted of participants with internet access while the country was in lockdown. Now that we are no longer in confinement, there is the need to extend this survey to people with no internet access. This is important because individuals without internet access generally constitute a vulnerable group with low education and low income. Addressing their views will lead to better preparedness towards an eventual second wave of COVID-19 in Mauritius. This recommendation is extended to authors who, during the lockdown in their respective countries, focused on social media users only. A strength of this study is that it achieved its targeted sample size, with a random study population and thus led to findings that are generalisable to the population of social media users in Mauritius.

5. Conclusions

This study showed that social media users in Mauritius had a low mean perceived susceptibility and perceived severity of COVID-19, with a significant difference being noted in perceived susceptibility among different age groups, places of residence and educational levels. Participants aged <39 years, compared with those aged 39–54 years, showed a significantly lower perceived benefit of staying at home to avoid COVID-19 infection. The findings of this study provide the basis for evidence-based health education programmes that are tailor-made for specific targeted audience. Sensitisation campaigns on the benefits of staying home should be aimed at younger social media users (aged <39 years). Community health centres in rural areas need to be involved in providing educational videos for empowering people towards self-efficacy. From a global perspective, this study contributes to fill the gap in the literature of studies investigating the COVID-19 beliefs of the people living in African countries. This study emphasises the need for African countries to investigate the beliefs of their inhabitants to provide tailor-made COVID-19 sensitisation campaigns.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.puhip.2021.100156.

Ethical approval

Ethical clearance was obtained from the University of Mauritius Research Ethics Committee (reference number 2020-0001).

Author contributions

In line with the ICMJE recommendation, all four authors met all four criteria for authorship with significant contribution to (1) design and/or data collection, analysis or interpretation, (2) manuscript drafting, writing or revision, (3) final approval and (4) agreement for accountability.

References

[1] WHO., WHO Director-General's Opening Remarks at the Media Briefing on COVID-19 11 March 2020 [Press Release], 2020. Mar [cited 2020 Mar 31], https://web.archive.org/web/20200331112655/https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19—11-march-2020.

[2] F. Sarwar, S.A. Panatik, F. Sarwar, Editorial: psychology of preventive behavior for COVID-19 outbreak, Journal of Research in Psychology 2 (1) (2020 May 10) 1–3, https://doi.org/10.31580/jrp.v2i1.1370.

[3] World Health Organization 11.03, Coronavirus Disease 2019 (COVID-19): Situation, Report – 51, 2020, https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200311-sitrep-51-covid-19.pdf?sfvrsn=1ba62e57_10.

[4] B.L. Zhong, W. Luo, H.M. Li, Q.Q. Zhang, X.G. Liu, W.T. Li, Y. Li, Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey, Int. J. Biol. Sci. 16 (10) (2020) 1745.

[5] Z.M. Chen, J.F. Fu, Q. Shu, Y.H. Chen, C.Z. Hua, F.B. Li, R. Lin, L.F. Tang, T.L. Wang, W. Wang, Y.S. Wang, Diagnosis and treatment recommendations for pediatric respiratory infection caused by the 2019 novel coronavirus, World journal of pediatrics (2020 Feb 5) 1–7, https://doi.org/10.1007/s12519-020-00345-5.

[6] I.M. Rosenstock, The health belief model: origins and correlates, Health Educ. Monogr. 2 (4) (1974) 336–353.

[7] A. Kagee, M. Freeman, Mental Health and Physical Health (Including HIV/AIDS). https://www.sciencedirect.com/science/article/pii/B9780128036785002824.

[8] S. Mukhtar, Mental health and emotional impact of COVID-19: applying health belief model for medical staff to general public of Pakistan, Brain Behav. Immun. (2020 Apr 10), 10.1016/j.bbi.2020.04.012, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7151322/.

[9] S. Van den Broucke, Why health promotion matters to the COVID-19 pandemic, and vice versa, Health Promot. Int. 35 (2) (2020 April) 181–186, https://doi.org/10.1093/heapro/daaa042.

[10] J.J.V. Bavel, K. Baicker, P.S. Boggio, V. Capraro, A. Cichocka, M. Cikara, M.J. Crockett, A.J. Crum, K.M. Douglas, J.N. Druckman, J. Drury, Using social and behavioural science to support COVID-19 pandemic response, Nature Human Behaviour (2020 Apr 30) 1–2, https://doi.org/10.1038/s41562-020-0884-z.

[11] G. Prati, L. Pietrantoni, B. Zani, Compliance with recommendations for pandemic influenza H1N1 2009: the role of trust and personal beliefs, Health Educ. Res. 26 (5) (2011 Oct 1) 761–769, https://doi.org/10.1093/her/cyr035.

[12] Li JB, Yang A, Dou K, Wang LX, Zhang MC, Lin XQ. Chinese Public's Knowledge, Perceived Severity, and Perceived Controllability of the COVID-19 and Their Associations with Emotional and Behavioural Reactions, Social Participation, and Precautionary Behaviour: A National Survey. https://doi.org/10.21203/rs.3.rs-16572/v2.

[13] K.O. Kwok, K.K. Li, H.H. Chan, Y.Y. Yi, A. Tang, W.I. Wei, S.Y. Wong, Community responses during early phase of covid-19 epidemic, Hong Kong, Emerg. Infect. Dis. 26 (7) (2020 Apr 16) 10–3201, https://doi.org/10.3201/eid2607.200500.

[14] M. Lee, M. You, Psychological and behavioral responses in South Korea during the early stages of coronavirus disease 2019 (COVID-19), Int. J. Environ. Res. Publ. Health 17 (9) (2020 Jan) 2977.

[15] P. Geldsetzer, Knowledge and perceptions of COVID-19 among the general public in the United States and the United Kingdom: a cross-sectional online survey, Ann. Intern. Med. (2020 Mar 20).

[16] M.É. Czeisler, M.A. Tynan, M.E. Howard, S. Honeycutt, E.B. Fulmer, D.P. Kidder, R. Robbins, L.K. Barger, E.R. Facer-Childs, G. Baldwin, S.M. Rajaratnam, Public attitudes, behaviors, and beliefs related to COVID-19, stay-at-home orders, nonessential business closures, and public health guidance—United States, New York City, and Los Angeles, May 5–12, 2020, MMWR (Morb. Mortal. Wkly. Rep.) 69 (24) (2020) 751.

[17] C.J. Atchison, L. Bowman, C. Vrinten, R. Redd, P. Pristera, J.W. Eaton, H. Ward, Perceptions and Behavioural Responses of the General Public during the COVID-19 Pandemic: A Cross-Sectional Survey of UK Adults, medRxiv, 2020. Jan 1, https://www.medrxiv.org/content/10.1101/2020.04.01.20050039v1.full.pdf. (Accessed 3 April 2020).

[18] Shahnazi H, Ahmadi-Livani M, Pahlavanzadeh B, Rajabi A, Hamrah MS, Charkazi A. Assessing preventive health behaviors from COVID-19 based on the health belief model (HBM) among people in golestan province: a cross-sectional study in Northern Iran. ResearchSquare. DOI: 10.21203/rs.3.rs-24871/v1.

[19] E.F. Nasir, H.A. Almahdi, Study of the Sudanese Perceptions of COVID-19: Applying the Health Belief Model, medRxiv (2020 Jan 1), https://doi.org/10.1101/2020.05.28.20115477.

[20] M. Chan Sun, C.B. Lan Cheong Wah, COVID-19 in Mauritius: Discourse Analysis of the Public Health Response against the Pandemic, SSRN, 2020 May 5. SSRN: https://ssrn.com/abstract=3593537. or, https://doi.org/10.2139/ssrn.3593537.

[21] S. Kowlessur, B. Ori, P. Zimmet, J. Tuomilehto, P. Chitson, Y. Ramphul, Tackling the COVID-19 pandemic in paradise: the Mauritian experience, The Lancet Diabetes & Endocrinology 8 (11) (2020) 878–879.

[22] M. Chan Sun, C.B. Lan Cheong Wah, Lessons to be learnt from the COVID-19 public health response in Mauritius, Public Health in Practice 1 (2020 Nov 1), 100023, https://doi.org/10.1016/j.puhip.2020.100023.

[23] M. Costa, Health belief model for coronavirus infection risk determinants, Rev. Saude Publica 54 (47) (2020 May), https://doi.org/10.11606/s1518-8787.2020054002494.

[24] C.S. Tang, C.Y. Wong, Factors influencing the wearing of facemasks to prevent the severe acute respiratory syndrome among adult Chinese in Hong Kong, Prev. Med. 39 (6) (2004 Dec 1) 1187–1193, https://doi.org/10.1016/j.ypmed.2004.04.032.

[25] S.A. Alsulaiman, T.L. Rentner, The health belief model and preventive measures: a study of the Ministry of health campaign on coronavirus in Saudi Arabia, Journal of International Crisis and Risk Communication Research 1 (1) (2018) 3. https://stars.library.ucf.edu/jicrcr/vol1/iss1/3/.