

# Who is responsible for social responsibility in a pandemic? Insights from a qualitative study in Singapore during the first wave of the COVID-19 pandemic

Jane M LIM<sup>1\*</sup>, Pearlyn HM NEO<sup>1</sup>, Suan Ee ONG<sup>1,2</sup>, Rayner KJ TAN<sup>1</sup>

*Affiliations:*

<sup>1</sup> Saw Swee Hock School of Public Health, National University of Singapore and National University Health System (NUHS), Singapore

<sup>2</sup> Research for Impact Singapore, 378 Alexandra Road, Block 29 Level 2 Health Horizons, Singapore 159964

*\*Corresponding author:*

<sup>1</sup>Saw Swee Hock School of Public Health, NUS 12 Science Drive 2, Tahir Foundation Building, Singapore 117549. Email: janelim@nus.edu.sg

## Abstract

**Introduction:** The role of social responsibility has been used to underpin the implementation of rapidly changing non-pharmaceutical interventions (NPIs) to slow COVID-19 community transmission.

**Methods:** To explore public awareness of COVID-19 and social responsibility in a pandemic, we conducted eight mobile app-based online focus group discussions (FGDs) with participants in Singapore between 28 March and 13 April 2020.

**Results:** Findings from our online FGDs indicate that social responsibility, especially during the early stages of COVID-19, was influenced by external factors such as appropriate legislation and allowances in existing societal culture, as well as action-based factors including mask wearing and safe distancing. Both were further mitigated by individual factors that mediated an individual's capacity and capability to comply with rapidly changing legislation during a pandemic.

**Conclusion:** While similar NPIs have been imposed globally, considerable between-country differences remain in health outcomes and adherence rates, displaying the complex nature of social responsibility. Evolving the role of social responsibility should be accompanied by expanding social norms and less reliance on punitive approaches.

## INTRODUCTION

Following the rapid global spread of COVID-19, governments were forced to close their borders and implement strict control measures such as lockdowns, mask-wearing

and social distancing in accordance to WHO guidelines [1]. While similar preventive measures were imposed globally, health outcomes, as measured by case numbers and mortality

**KEY WORDS:** COVID-19; focus group discussions; non-pharmaceutical interventions (NPIs); public awareness; social responsibility.

rates, have varied considerably across different countries [2]. Such differences display the complex, multifaceted nature of social responsibility in adhering to non-pharmaceutical interventions (NPIs) [3–7]. The concept of social responsibility is an ethical framework [8] that suggests that an individual has an obligation to undertake actionable civic duties that potentially benefit both themselves and their community at large. In a global pandemic, social responsibility can present as overall community compliance to NPIs, an additional key indicator of the success of such measures. Existing literature on community compliance to COVID-19 control measures have highlighted the role of population-level sociocultural characteristics as well as individual-level factors such as gender, education or religion [9, 10], indicating the subjective nature in capacities to adhere to and adopt rapidly evolving NPIs. Previous research also outlines the differential impact of physical and mental health outcomes of NPIs across varying segments of the population, disproportionately affecting groups

such as older adults [11–13] and females [14, 15]. Such evidence then demonstrates the consequential influence of context on compliance. The first case of COVID-19 was reported in Singapore on 23 January 2020. Since then, the Singapore government incrementally implemented a series of movement control measures to curb its spread, including the closure of entertainment establishments such as nightclubs and bars in late February 2020 following the change in Singapore's Disease Outbreak Response System Condition (DORSCON) color code from yellow to orange [16]. A key NPI that occurred in Singapore was a period of strict movement control measures from 7 April to 1 June 2020, also known as the 'circuit breaker'. The term 'circuit-breaker' referred to a set of measures that would curb the continued spread of COVID-19 in the community, and in effect 'break the circuit' of transmission. Movement control measures during this time included the closure of entertainment establishments and non-essential workplaces, mandatory mask-wearing, as well as restrictions on le-

### TAKE-HOME MESSAGE

*Although rapidly changing non-pharmaceutical interventions have been implemented globally to slow COVID-19 community transmission, stark differences remain in health outcomes and adherence rates, indicating the complex nature of social responsibility. Understanding the role of social responsibility can help to expand social norms, encouraging less reliance on punitive approaches.*

**Competing interests** - none declared.

Copyright © 2021 Jane Lim et al. Edizioni FS Publishers

This is an open access article distributed under the Creative Commons Attribution (CC BY 4.0) License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. See <http://www.creativecommons.org/licenses/by/4.0/>.

**Cite this article as:** Lim JM, Neo PHM, Ong SE, Tan RKJ. A qualitative study: Who is responsible for social responsibility in a pandemic? Insights from a qualitative study in Singapore during the first wave of the COVID-19 pandemic. *J Health Soc Sci.* 2021;6(4): 556-565

DOI: 10.19204/2021/whsr8

**Author Contributions:** Conceptualisation, study design, methodology: JL, PN, SEO, RT. Data collection: JL, SEO, RT. Data analysis: JL, RT. Writing-original draft: JL. Writing-review & editing: JL, PN, SEO, RT.

Received: 7/09/2021

Accepted: 11/11/2021

Published Online: 30/12/2021

aving the house unless for essential services such as buying groceries, caring for elderly family members who were living alone, or seeking or rendering medical attention [17]. To explore public awareness of COVID-19 and public perceptions, understandings, and practices of social responsibility in a pandemic, we conducted eight mobile app-based online focus group discussions (FGDs) with adult (> 21 years) participants in Singapore.

## METHODS

### *Data collection and study participants*

Between 28 March and 13 April 2020, we conducted eight mobile app-based FGDs [18] to explore public awareness of COVID-19, concerns surrounding the propagation of misinformation, as well as participants' perceptions of social responsibility. Participants were recruited through commonly used social media platforms such as Facebook, Twitter and Instagram. Members of the public were eligible for the study if they were 1) at least 21 years of age, 2) WhatsApp users, and 3) community-dwelling Singaporean citizens or permanent residents at point of recruitment. Due to strict implementation of circuit breaker measures in Singapore, FGDs were conducted over WhatsApp, the most widely used chat application in the country at the time. WhatsApp was also selected because of its high levels of security at the time, with automated end-to-end encryption of chats [19]. Participants were stratified by the following age groups – 21 to 30 years, 31 to 40 years, 41 to 50 years and 51 years and above – to compare similarities and differences in perceptions across age groups. Each FGD was led by one main facilitator and two observers and was conducted over a period of five consecutive days. Data collection was conducted both synchronously (i.e., all participants were required to be online at a specific time for a specific duration) and asynchronously (i.e., participants could reply at their convenience anytime between 9am and 6pm), with new topics of discussion introduced daily. All participants were reimbursed SGD50 upon

completion of the study.

All participants were also required to sign and complete a comprehensive online consent form that included clauses on confidentiality and sharing of identities of other participants and/or discussed content prior to the start of the FGD. At the beginning of every day's discussion, after introducing the day's topic, the facilitator would outline discussion ground rules to remind participants to interact with other respectfully, civilly, and non-judgementally. All chat transcripts, including media files (e.g., photos, videos, memes) were directly downloaded from the researchers' WhatsApp phone applications and stored in a secure, password-protected location accessible only to research team members.

### *Topic guide*

The development of FGD topic guides was informed by published evidence that highlighted key aspects of communication, public awareness, and information in a pandemic [20–22]. As such, participants were first asked about their general knowledge and attitudes towards COVID-19, and subsequently how they accessed and understood both official and unofficial sources of COVID-19 information. On the last two days, participants were then asked about their experiences with misinformation surrounding COVID-19 and how they perceived outbreak preparedness, alongside related issues of panic buying and stock-outs. Complete topic guides used for the five days of discussion can be found in the appendix.

### *Thematic analysis*

All WhatsApp chat transcripts were imported and coded using Dedoose Version 8.0.35 [23]. Thematic analysis using an inductive (data-driven) approach was used to analyse the data. Initially, JL independently coded a subset of five interviews and each developed a preliminary set of codes for analysis. This code set was then compared and reviewed by PN, SEO and RT to develop a consolidated codebook for the rest of the analysis. Final modifications were made to

improve the framework before finalisation, achieved through team-based iterative discussion and consensus-building. Using the final coding framework, JL and RT coded the remaining transcripts independently. The content of each code was available to all authors for subsequent validity checks. Participant quotations are provided to illustrate our findings.

### *Ethical aspects*

This study was approved by the Departmental Ethics Review Committee at the Saw Swee Hock School of Public Health, National University of Singapore (reference number: SSHSPH 014).

## RESULTS

Thematic analysis indicated a bi-directional conceptualisation of social responsibility in a pandemic, inclusive of both external and individual factors (Figure 1).

### *External factors*

External factors comprised of appropriate legislations both by governing structures and workplaces. Participants acknowledged that appropriate timing of legislation, especially for overall crowd management and safe distancing measures to reduce transmission, was crucial. Concomitant with the development of country-wide legislation, participants across age groups also discussed the need for enforcement to encourage greater uptake of control measures in preventing further community-level COVID-19 spread. In particular, older participants discussed growing trends of non-compliance to control measures in younger age groups.

*“Previously the government introduced social distancing, restaurants followed those guidelines. Some added cross marks on seats to ensure that people don’t sit on it. Today’s update highlights the changes with the increase rates of infection. No dine in from Tuesday onwards”*

(Participant 1)

*“I think they have been trying their best. Food courts, coffee shops, hawker centers have removed*

*half their seats and marked out with X the areas we should not sit. There are also clearly marked out lines for queues at supermarkets etc...But perhaps more can be done to enforce. Although measures are in place, many people ignore these measures. Just today in hospital I see a couple sitting next to each other despite seats being clearly marked out.”*

(Participant 2)

*“The queue markers at restaurants, supermarkets, and other public places have been pretty useful to remind people how far they should be distancing themselves. Public transport is still an issue, but with the new measures of having most workplaces closed, hopefully those who still need to use the transport system would have less people to contend with and more physical distance in between.”*

(Participant 3)

*“And there are still cases where people still flagrantly congregate despite the rules, e.g. I saw a group of about 10 [teenage boys] underneath a HDB block near my place gathering around a chess table to play mobile games together just yesterday night, and apparently they’ve been doing this get-together regularly and frequently despite the measures becoming stricter over the past month.”*

(Participant 003, FGD 2A)

In addition to relevance and timing of legislation, participants spoke about existing allowances in societal culture that could facilitate or impede compliance to novel COVID-19 legislation. For instance, some participants discussed trends surrounding mask wearing and other aspects of collective responsibility prior to the pandemic.

*“Before this entire [COVID-19] happened, wearing mask when sick or when not feeling well was almost non-existent...[even] with social distancing measures, some prefer [their routine] to go to the coffeeshop to drink coffee, chat with friends. Evening go drink beer with beer promoters serving.”*

(FGD 1B)

This was also a pertinent issue for participants in their respective workplaces, where many found recent control measures incompatible with well-established social norms at the wor-

place, such as presenteeism. Participants also discussed varying experiences in the adoption of technological tools to facilitate transitions to remote working situations. There was further widespread agreement among participants that policy changes and new norms needed to be accompanied by evolving team culture and overall management. Participants shared the following:

*"It depends on where you're looking at it from... there was a lot of emphasis on turning up for work despite being ill... which is rather contrary to social responsibility. I was penalised earlier this month for taking a week of MC from a viral flu".*

(Participant 1)

*"To some extent. I think there's still a prevalent mindset in some companies or employees that... you can't trust your own employees to be doing proper work for 8 hours a day while they're [home]. In order for social responsibility to happen in the workplace, I feel like the messaging and support has to come down from the upper management."*

(Participant 2)

*"Yea it's not just about having policies in place. team culture and supervisors make a big difference :p".*

(Participant 1)

*"Prior to the WFH measures, our office realized that if not for this pandemic, the adoption of certain technological tools that we already have may not be adopted."*

(Participant 2, FGD 3A)

### **Action-based factors**

Another aspect of social responsibility were action-based factors in actively adhering to evolving country-wide COVID-19 legislation and advisories to prevent themselves and others from getting sick. Examples of these behaviours included mask wearing, staying home if they felt sick, minimising contact with vulnerable family members and practicing physical distancing whenever they were in contact with non-household members. Some participants also discussed heightened healthcare seeking habits, as well as keeping a personal record for contact tracing purposes:

*"Wearing masks, washing your hands regularly, staying home when you're sick, educating people if they ask and don't know about these measures, fighting back against fake news... prevent panic buying and hoarding of essential items. buying only what is necessary so that others have enough as well"*

(Participant 1)

*"Acting with others in mind, not just yourself. in this context, staying home as much as possible, minimising interactions with others, spreading responsible messages, etc."*

(Participant 2)

*"Lots of things:*

*- spend more responsibility and be considerate in what you buy. Spare a thought for others too.*

*- stay at home when you are not well. Be mindful of the virus and when in doubt, consult the doctor immediately.*

*- be mindful of your cleanliness so as not to spread to others with poor immune system like the elders.*

*- be considerate and attentive to your what is needed to be done to make this situation better and to get it over as fast as we can.*

*- always keep in mind that if one does what is advisable to be done, then hopefully we can get over this much sooner and back to our normal life."*

(Participant 3)

*"Social Responsibility is about showing concern to others as we live in a relatively dense space. I believe most people show the concerns for others; they are socially responsible it may be due to the enforcement in place. I have never seen such orderliness in the wet market. I really hope that after this we will inch towards a gracious society like Japan or Taiwan."*

(Participant 4, FGD 6A).

Amidst threats of misinformation, participants also believed that correcting false information, disengaging misinformation on social media platforms and not participating in panic behaviours were vital behaviours in practicing social responsibility. Inevitably, participants across all age groups said that they have all received circulating false news and unfounded rumours about COVID-19, most commonly through social networking platforms such as WhatsApp and Facebook.

### Mediating factors

Overall, most participants acknowledged that there were generally high levels of citizen compliance to COVID-19 legislation, facilitated by stiff penalties when control measures were breached. While a majority agreed that the punitive nature of early stage enforcement was effective and sometimes necessary in slowing community transmission, some also recognised that certain individual factors, such as sociodemographic or socioeconomic characteristics, could influence adoption of rapidly changing legislation during a pandemic.

More specifically, given the rapidly evolving context within which COVID-19 advisories were issued, participants discussed the adequacy of government communication and the clarity of key messages to varying segments of the general public. Some participants highlighted unintentional breaching of control measures could be due to the lack of that due to the immense amounts of information, people may not have had the ability or resources to distil key messages and did not know what was expected of them.

Across all age groups, participants also tended towards the belief that younger and older segments of the population demonstrated lower trends of compliance to control measures, and thus had greater potential to facilitate disease transmission in the community. In the younger population, participants generally at-

tributed poor adherence to recklessness and self-interests, in part due to their perceived immunity to COVID-19. While there were similar levels of frustration toward older adults who were more susceptible to COVID-19 complications, participants recognised that this segment of the population was also more vulnerable to loneliness and other detrimental social isolation concerns.

*“Youngsters are more rebellious. Don’t listen and always want to test the system !! We were once young before . Same behaviour. Don’t think of consequences. Don’t know how to write “DIE””*  
 (Participant 1)

*In your opinion why do you think they continue to do it?*

(Facilitator)

*They need to chit chat and I think some are lonely and so needs to find company”*

(Participant 001, FGD 1B)

Further, working age participants also verbalised the challenges of navigating transitions and changing environments in a push for working from home to curb disease spread. These challenges ranged from technological issues, social isolation, as well as blurred boundaries between home and work. These issues were exacerbated in participants, disproportionately female, who had to maintain a work routine along with additional duties in the home, including home-based schooling and childcare.

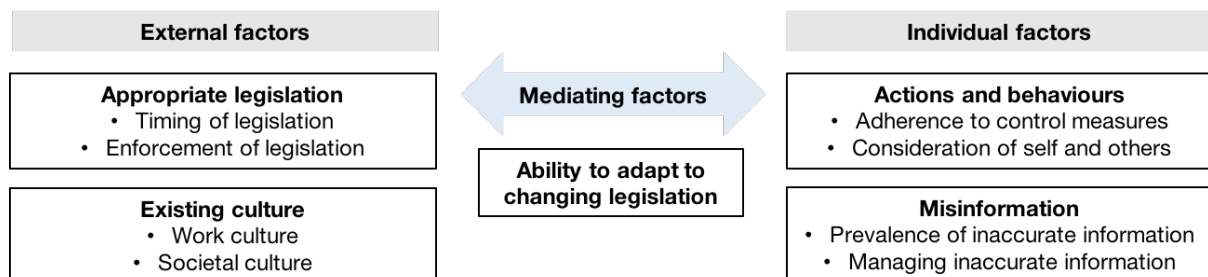


Figure 1. Bi-directional conceptualisation of social responsibility.

## DISCUSSION

Findings from our online FGDs indicate that social responsibility, especially during the early stages of COVID-19, was influenced by external factors such as appropriate legislation and allowances in existing societal culture, as well as action-based factors including mask wearing and safe distancing. Both were further mitigated by individual factors that mediated an individual's capacity and capability to comply with rapidly changing legislation during a pandemic.

In Singapore, the COVID-19 (Temporary Measures) Act 2020 was passed by Parliament on 7 April 2020 – approximately two months after presentation of the first imported case – implementing country-wide mitigation measures to curb community COVID-19 spread. Despite its stringent nature, participants generally agreed that the situation necessitated a larger-scale approach from governing structures. This corroborates evidence in similar settings, where the timely enactment and clear communication of pandemic-pertinent legislation showed improved perceived effectiveness, promoted positive behavioural changes and reduced pandemic-related fear and anxiety in the general public.

However, expedient legislations alone are inadequate in enforcing COVID-19 control measures. Across countries, early local clusters tended to emerge in workplaces [24, 25], prompting concerns of presenteeism, where individuals who were feeling unwell continued to attend work or other social activities. Previous literature also highlights the issue of presenteeism and the importance of workplace distancing in slowing disease transmission [26–29], making the adherence to recommended control measures especially vital in the workplace. This calls for the expanding or re-establishing of social norms to accommodate safe practices in order to sustainably curb COVID-19 spread distancing.

Accompanying the need for higher-level regulations, participants also viewed social responsibility along a spectrum of individual-level actions to keep themselves and

others safe, such as continued mask-wearing, safe distancing, heightened healthcare seeking behaviours as well as managing misinformation. Across age groups, participants alluded to uncertainties that closely followed the COVID-19 infodemic [20], as technology and social media were used on an unprecedented scale to keep people informed and connected. While information dissemination can be advantageous, widespread misinformation can also influence population-level anxiety [22] and result in fragmented social response. Contingent on population-level trust, further information dissemination surrounding COVID-19 should focus on official news sources and other government-related channels [30].

While participants acknowledged that punitive enforcement of control measures could contribute to higher levels of compliance, some recognised that adoption of control measures could be more challenging in some segments of the population, especially with constantly evolving legislation in the early stages of the pandemic. In particular, prior research has suggested that physical distancing disproportionately affects older adults, with noticeably higher levels of depressive symptoms corresponding with social isolation [11, 13], highlighting the continued need for infrastructure in clinical and community-based organisations to maintain the provision of services that engage and support older adults [1].

Additionally, as workplace distancing measures necessitate remote work environments, the transition to working from home has greater consequences for those, especially females, who undertake additional responsibilities in the home, such as home-based learning, childcare or other unpaid care work [30]. While studies have shown overall elevated depression and anxiety levels in work from home environments [31], females have consistently reported greater stress levels [15] and higher instances of experienced domestic violence [32], suggesting significant gendered psychophysiological consequences with other entrenched inequalities in adherence to CO-

VID-19 control measures. Understanding the reasons for variability in community response to control measures is then essential to improve long-term mitigation measures and to aid the development of more targeted public health interventions.

Our study is subject to a number of potential limitations. It is possible that there was a degree of self-selection in our study sample, as participants with greater compliance with COVID-19 control measures may have been more incentivised to participate. Additionally, due to the nature of data collection via WhatsApp, findings may not adequately represent those who are not familiar with or are not frequent users of digital technology. It is also possible that participants may have provided inaccurate information or socially desirable responses due to the peer-based, self-reporting nature of our study.

However, the use of online focus group discussions has specific advantages during a pandemic, enabling rapid quality data collection within the context of physical distan-

cing measures. This enabled us to study public perceptions toward COVID-19 during the early phases of the pandemic [18]. Future research should explore further facilitators and barriers of behavioural changes to provide greater insights into implementation of sustainable COVID-19 policies and strategies.

## CONCLUSION

Due to the novel nature of COVID-19, the role of social responsibility has been used to underpin an expanding set of control measures. Participants understood social responsibility as a conglomeration of external and individual factors, contextualised by existing societal culture, rapidly changing control measures and the uncertainties in the levels and sources of risk in the early phases of an epidemic. Evolving the role of social responsibility should be accompanied by expanding social norms and less reliance on punitive approaches.

## References

1. Koh D. COVID-19 lockdowns throughout the world. *Occup Med.* 2020;70(5):322–322.
2. Chirico F, Nucera G, Magnavita N. Estimating case fatality ratio during COVID-19 epidemics: Pitfalls and alternatives. *J Infect Dev Ctries.* 2020;14(5):438–439.
3. Flaxman S, Mishra S, Gandy A, Unwin HJT, Mellan TA, Coupland H, et al. Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe. *Nature.* 2020;584(7820):257–261.
4. Imai N, Gaythorpe KA, Abbott S, Bhatia S, van Elsland S, Prem K, et al. Adoption and impact of non-pharmaceutical interventions for COVID-19. *Wellcome Open Res.* 2020;5(59). <https://doi.org/10.12688/wellcomeopenres.15808.1>
5. Lai S, Ruktanonchai NW, Zhou L, Prosper O, Luo W, Floyd JR, et al. Effect of non-pharmaceutical interventions to contain COVID-19 in China. *Nature.* 2020;585(7825):410–413.
6. Chirico F, Nucera G, Szarpak L. COVID-19 mortality in Italy: The first wave was more severe and deadly, but only in Lombardy region. *J Infect.* 2021 Jul;83(1):e16. doi: 10.1016/j.jinf.2021.05.006. Epub 2021 May 14.
7. Chirico F, Sacco A, Nucera G, Magnavita N. Coronavirus disease 2019: the second wave in Italy. *J Health Res.* 2021;35(4):359–363. doi: 10.1108/JHR-10-2020-0514.
8. Alliance P. Social responsibility and ethics. Retrieved from Pachamama Alliance 2018 [cited 2021 October 18]. Available from: <https://www.pachamama.org/social-justice/social-responsibility-and-ethics>.
9. Asnakew Z, Asrese K, Andualem M. Community Risk Perception and Compliance with Preventive Mea-



- asures for COVID-19 Pandemic in Ethiopia. *Risk Manag Healthc Policy*. 2020;13:2887–2897.
10. Zhao SZ, Wong JYH, Wu Y, Choi EPH, Wang MP, Lam TH. Social distancing compliance under Covid-19 pandemic and mental health impacts: A population-based study. *Int J Environ Res Public Health*. 2020;17(18):6692.
  11. Berg-Weger M, Morley JE. Loneliness and social isolation in older adults during the Covid-19 pandemic: Implications for gerontological social work. Springer; 2020.
  12. Guo Y, Cheng C, Zeng Y, Li Y, Zhu M, Yang W, et al. Mental health disorders and associated risk factors in Quarantined adults during the COVID-19 outbreak in China: cross-sectional study. *J Medical Internet Res*. 2020;22(8):e20328.
  13. Smith ML, Steinman LE, Casey EA. Combatting social isolation among older adults in a time of physical distancing: the COVID-19 social connectivity paradox. *Front Public Health*. 2020;8:403.
  14. Alon TM, Doepke M, Olmstead-Rumsey J, Tertilt M. The impact of COVID-19 on gender equality. National Bureau of economic research; 2020.
  15. Sharma N, Vaish H. Impact of COVID-19 on mental health and physical load on women professionals: an online cross-sectional survey. *Health Care Women Int*. 2020;41(11-12):1255–1272.
  16. Wong JEL, Leo YS, Tan CC. COVID-19 in Singapore-Current Experience: Critical Global Issues That Require Attention and Action. *JAMA*. 2020 Apr 7;323(13):1243–1244. doi: 10.1001/jama.2020.2467.
  17. Jacinta I, Chen P, Yap JC-H, Hsu LY, Teo YY. COVID-19 and Singapore: From Early Response to Circuit Breaker. *Ann Acad Med Singapore*. 2020;49:561–572.
  18. Chen J, Neo P. Texting the waters: An assessment of focus groups conducted via the WhatsApp smartphone messaging application. *Methodol Innov*. 2019;12(3):2059799119884276.
  19. Pang N, Woo YT. What about WhatsApp? A systematic review of WhatsApp and its role in civic and political engagement. *First Monday*. 2020;25(12). <https://doi.org/10.5210/fm.v25i12.10417>.
  20. Cinelli M, Quattrocioni W, Galeazzi A, Valensise CM, Brugnoli E, Schmidt AL, et al. The covid-19 social media infodemic. *Sci Rep*. 2020;10(1):1–10.
  21. Finset A, Bosworth H, Butow P, Gulbrandsen P, Hulsman RL, Pieterse AH, et al. Effective health communication—a key factor in fighting the COVID-19 pandemic. *Patient Educ Couns*. 2020;103(5):873.
  22. Lim JM, Tun ZM, Kumar V, Quayle SED, Offeddu V, Cook AR, et al. Population anxiety and positive behaviour change during the COVID-19 epidemic: Cross-sectional surveys in Singapore, China and Italy. *Influenza Other Respir Viruses*. 2021;15(1):45–55.
  23. Version D. 8.0. 35. Web application for managing, analyzing, and presenting qualitative and mixed method research data Los Angeles, CA: SocioCultural Research Consultants, LLC 2018; 2018.
  24. Furuse Y, Sando E, Tsuchiya N, Miyahara R, Yasuda I, Ko YK, et al. Clusters of coronavirus disease in communities, Japan, January–April 2020. *Emerging Infect Dis*. 2020;26(9):2176–2179. <https://doi.org/10.3201/eid2609.202272>.
  25. Zhang Y, Su X, Chen W, Fei CN, Guo LR, Wu XL, et al. Epidemiological investigation on a cluster epidemic of COVID-19 in a collective workplace in Tianjin. *Zhonghua liu xing bing xue za zhi= Zhonghua liuxingbingxue zazhi*. 2020;41(5):649–653.
  26. Neo LS, Chin J, Khader M. “Don’t Come to Work If You are Unwell!”: The Psychology of Presenteeism. January, 2020. SSRN Electronic J. doi: 10.2139/ssrn.3584410.
  27. Eisen D. Employee presenteeism and occupational acquisition of COVID-19. *Med J Aust*. 2020 Aug;213(3):140–140.e1. doi: 10.5694/mja2.50688. Epub 2020 Jun 28.
  28. Kinman G, Grant C. Presenteeism during the COVID-19 pandemic: risks and solutions. *Occup Med (Lond)*. 2021 Oct 1;71(6-7):243–244. doi: 10.1093/occmed/kqaa193.
  29. Chirico F, Magnavita N. The Crucial Role of Occupational Health Surveillance for Health-care Workers During the COVID-19 Pandemic. *Workplace Health Saf*. 2021;69(1):5–6.

30. Fridman I, Lucas N, Henke D, Zigler CK. Association between public knowledge about COVID-19, trust in information sources, and adherence to social distancing: Cross-sectional survey. *JMIR Public Health Surveill.* 2020;6(3):e22060.
31. Power K. The COVID-19 pandemic has increased the care burden of women and families. *Sustainability: Science, Practice and Policy.* 2020;16(1):67–73.
32. Angelucci M, Angrisani M, Bennett DM, Kapteyn A, Schaner SG. Remote work and the heterogeneous impact of covid-19 on employment and health. *National Bureau of Economic Research*; 2020.
33. Roesch E, Amin A, Gupta J, García-Moreno C. Violence against women during covid-19 pandemic restrictions. *BMJ.* 2020 May 7;369:m1712. doi: 10.1136/bmj.m1712.